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Ag Spreagadh Gasúir Ghaeltachta chun Ceangal a dhéanamh le hAcmhainní Teanga  
Saibhre Digiteacha agus ag Cruthú Deiseanna Idirghníomhaíochta idir na Glúnta a  
thrasnaíonn teorainneacha *Baile-Scoile-Pobail*

*Encouraging Gaeltacht Children's Engagement with Rich Digital Language Resources and Creating  
Opportunities for Intergenerational Interaction across Home-School-Community Boundaries*

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# Table of Contents

TABLE OF FIGURES.....	VI
TABLE OF TABLES.....	IX
ABSTRACT.....	X
DEARBHÚ.....	XI
BUÍOCHAS.....	XII
CHAPTER 1 - INTRODUCTION.....	1
1.1. THE RESEARCH PROBLEM.....	1
1.2. RESEARCH OBJECTIVES .....	3
1.3. METHODOLOGY .....	3
1.4. GUIDING THEORETICAL PRINCIPLES.....	4
1.5. THE PROMISE OF TECHNOLOGY MEDIATED LEARNING.....	4
1.6. POTENTIAL CONTRIBUTIONS OF THIS THESIS .....	6
1.7. STRUCTURE OF THE THESIS .....	7
CHAPTER 2 - BACKGROUND.....	9
2.1. INTRODUCTION .....	9
2.2. LANGUAGE MAINTENANCE, LANGUAGE SHIFT AND LANGUAGE REVITALISATION .....	10
2.3. KEY PAST EVENTS IN RELATION TO THE LANGUAGE IN THE GAELTACHT .....	12
2.4. THE CURRENT STATE OF THE LANGUAGE IN THE GAELTACHT .....	17
2.5. THE EDUCATION SYSTEM IN THE GAELTACHT .....	22
2.5.1. <i>The Linguistic Context of Gaeltacht Schools</i> .....	23
2.5.2. <i>Challenges faced by Gaeltacht schools</i> .....	25
2.5.3. <i>Challenges faced by Gaeltacht parents</i> .....	29
2.5.4. <i>The Effect of Standardisation on Language Shift</i> .....	30
2.5.5. <i>Language revitalisation from the bottom up</i> .....	32
2.5.6. <i>Learning Resources and Support for Native Speaking Children</i> .....	36
2.6. RAIDÍÓ NA GAELTACHTA, DIGITAL MEDIA AND LANGUAGE REVITALISATION.....	38
2.7. FINALLY, A RESPONSE FROM THE STATE – A NEW POLICY FOR THE GAELTACHT.....	43
2.8. CONCLUSION .....	47
CHAPTER 3 – REVIEW OF THE LITERATURE.....	49
3.1. INTRODUCTION .....	49
3.2. PEDAGOGICAL PRINCIPLES UNDERLYING THE DESIGN: SOCIOCULTURAL THEORY .....	49
3.2.1. <i>Situated and Collaborative Learning</i> .....	52
3.3. WEB 2.0: TRANSFORMING MEANING MAKING THROUGH SOCIAL SOFTWARE.....	54
3.4. PEDAGOGICAL MODELS SUPPORTING LANGUAGE ACQUISITION IN MINORITY COMMUNITIES.....	56
3.5. MULTILITERACIES AND NEW LITERACY STUDIES .....	60
3.5.1. <i>New Literacies: Redefining texts as multimodal</i> .....	62
3.5.2. <i>New Literacies: A New Ethos</i> .....	65
3.5.3. <i>An Opportunity for Threatened Languages</i> .....	65
3.6. BRIDGING THE GAP BETWEEN THE HOME AND THE CLASSROOM .....	65
3.6.1. <i>Artefactual Literacies</i> .....	66
3.6.2. <i>Funds of Knowledge</i> .....	67
3.6.3. <i>Identity Texts</i> .....	68
3.6.4. <i>Schools out of sync with out-of-school practices</i> .....	69

3.6.5.	<i>Solutions in the cloud and poor rural broadband</i> .....	71
3.7.	CRITERIA FOR EVALUATING TECHNOLOGY-SUPPORTED INSTRUCTION .....	72
3.8.	SAMPLE PROJECTS .....	73
3.8.1.	<i>A Labrador Inuititut Story Database</i> .....	73
3.8.2.	<i>Knowledge Producing Schools</i> .....	76
3.8.3.	<i>The Oral History Project – Identity Texts</i> .....	78
3.8.4.	<i>Synthesizing The Examples</i> .....	79
3.9.	SUMMARY .....	81
<b>CHAPTER 4 – METHODOLOGY.....</b>		<b>83</b>
4.1.	INTRODUCTION .....	83
4.1.1.	<i>Research Schedule</i> .....	83
4.2.	DESIGN BASED RESEARCH .....	84
4.2.1.	<i>The Twin Goals of DBR</i> .....	86
4.2.2.	<i>Nature of DBR problems</i> .....	87
4.2.3.	<i>Steps in Design-Based Research</i> .....	88
4.2.4.	<i>Conjecture Maps</i> .....	91
4.2.5.	<i>Design Requirements</i> .....	94
4.2.6.	<i>Collaborative Nature of DBR</i> .....	95
4.3.	DATA COLLECTION.....	96
4.4.	DATA ANALYSIS.....	98
4.5.	NARRATIVE OUTPUT OF DESIGN-BASED RESEARCH .....	100
4.5.1.	<i>Three cycles of analysis</i> .....	101
4.6.	CHALLENGES OF DBR.....	105
4.7.	ETHICAL CONSIDERATIONS .....	106
4.8.	SUMMARY .....	108
<b>CHAPTER 5 – THE INITIAL DESIGN OF THE INTERVENTION – DESIGN REQUIREMENTS AND DESIGN CONJECTURES ...</b>		<b>109</b>
5.1.	INTRODUCTION .....	109
5.2.	PHASE 0: ORIGINS OF THE RESEARCH: THE ITUNESU PROJECT .....	110
5.3.	DESIGN REQUIREMENTS .....	115
5.4.	CONJECTURE MAP SPECIFYING THE OVERALL DESIGN .....	117
5.4.1.	<i>High level Conjecture</i> .....	118
5.4.2.	<i>Embodiment of the Design</i> .....	118
5.4.2.1.	Tools and Materials.....	118
5.4.2.2.	Task Structures .....	126
5.4.2.3.	Participant Structures .....	130
5.4.2.4.	Discursive Practices.....	131
5.4.3.	<i>Mediating Processes</i> .....	131
5.4.3.1.	Observable Interactions .....	132
5.4.3.2.	Participant Artefacts .....	132
5.4.3.3.	Reported Interactions.....	134
5.4.4.	<i>Achieving the Desired Outcomes</i> .....	134
5.5.	SUMMARY .....	135
<b>CHAPTER 6 – PRELIMINARY PHASE 1A AND EXPLORATORY PHASE 1B IN SCOIL CHLUAIN LOCHA.....</b>		<b>136</b>
6.1.	INTRODUCTION .....	136
6.2.	DESCRIPTION OF THE LOCAL CONTEXT – SCOIL CHLUAIN LOCHA.....	136
6.3.	PHASE 1A – CLUAIN LOCHA, PRELIMINARY SESSIONS: FAMILIARISATION AND A LIGHTWEIGHT WALKTHROUGH OF A DESIGN PROTOTYPE.....	138

6.3.1.	<i>Production of the children's first artefact</i> .....	141
6.3.2.	<i>Reflections</i> .....	143
6.3.3.	<i>Design Refinements and Planning for Phase 1b</i> .....	145
6.4.	PHASE 1B – DEVELOPING THE LOCAL AREA THEME .....	148
6.4.1.	<i>Introduction</i> .....	148
6.4.2.	<i>Christmas in Times Past Theme and Reluctance to Record</i> .....	148
6.4.3.	<i>Artefacts from the Archives Resonating with the Children</i> .....	150
6.4.3.1.	Vignette – Personal Connections in the Archives Resonating at Home.....	152
6.4.4.	<i>Artefacts from Home Crossing the Home-School Divide</i> .....	154
6.4.5.	<i>Personal Connection with the Artefacts from Home Sparking Conversations</i> .....	156
6.4.6.	<i>Multimodal Artefacts on the Local Area Theme</i> .....	157
6.4.6.1.	Vignette – Multimodal Artefact: The Old Road .....	158
6.4.6.2.	Vignette – Multimodal Artefact: The Local Bog.....	159
6.4.6.3.	Vignette – Multimodal Artefact: The Old School.....	160
6.4.7.	<i>Wiki Affected by Technical Problems and its Written Nature</i> .....	161
6.4.8.	<i>Researcher's Naivety Relating to Children's Contextual Knowledge and its Relation to the Written Word - A Need for Structured Agency</i> .....	164
6.4.9.	<i>Technical Problems</i> .....	167
6.4.10.	<i>Key Turning Point in Intervention: Too much focus on tech</i> .....	169
6.5.	REFLECTIONS .....	170
	<b>CHAPTER 7 - PHASE 2: IMPLEMENTING THE REFINED INTERVENTION.....</b>	<b>176</b>
7.1.	INTRODUCTION .....	176
7.2.	CHAPTER NARRATIVES.....	176
7.2.1.	<i>Cloud drive with local storage for more reliable school-home access to resources</i> .....	176
7.2.2.	<i>Brainstorming for Specific Themes</i> .....	178
7.2.3.	<i>Collaborative listening (and talking) to preselected archival clips</i> .....	179
7.2.4.	<i>Exemplary Artefact Synchronising Local Area Audio and Images</i> .....	185
7.2.5.	<i>Multimodal Artefacts based on the children's chosen radio clips</i> .....	187
7.2.5.1.	Vignette: Multimodal Artefact – The War of Independence .....	189
7.2.5.2.	Vignette: Multimodal Artefacts – Other Artefacts .....	191
7.2.6.	<i>Spread of technology to fit new purposes in the classroom</i> .....	193
7.2.7.	<i>Collection in cloud being repurposed as suitable curricular resources</i> .....	194
7.2.8.	<i>Community Presentation</i> .....	195
7.3.	REFLECTIONS .....	196
	<b>CHAPTER 8 - PHASE 3, FURTHER REFINEMENTS IN A NEW CONTEXT: BARR NA LEICE.....</b>	<b>201</b>
8.1.	INTRODUCTION .....	201
8.2.	DESCRIPTION OF THE LOCAL CONTEXT – SCOIL BHARR NA LEICE .....	201
8.3.	OUTLINE OF THE SESSIONS AND INITIAL SET UP.....	202
8.4.	REFINEMENTS TO THE DESIGN FROM PHASE 2.....	203
8.4.1.	<i>Synchronisation Sheet</i> .....	203
8.4.2.	<i>Exemplary artefact and accompanying sync sheet</i> .....	204
8.5.	BARR NA LEICE NARRATIVES .....	205
8.5.1.	<i>An outline of interactions in Session 1</i> .....	205
8.5.2.	<i>Extensive Listening and Choosing Themes</i> .....	207
8.6.	PARTICIPANT NARRATIVES.....	210
8.6.1.	<i>The overall learning trajectories</i> .....	211
8.6.2.	<i>Participant Narrative: Tadhg – My Grandfather, Peadar Stiofán</i> .....	214
8.6.3.	<i>Group Narrative: Oileán Mór Group working with Siobhán's recording of her Mamó</i> .....	218

8.6.4.	<i>Community Celebration</i> .....	223
8.7.	THE VIEWS OF THE CHILDREN .....	224
8.8.	THE VIEWS OF THE TEACHER.....	228
8.9.	REFLECTIONS .....	232
<b>CHAPTER 9 – REVIEW OF THE DESIGN ACROSS THE THREE PHASES.....</b>		<b>235</b>
9.1.	INTRODUCTION .....	235
9.2.	REVIEW OF THE DESIGN REQUIREMENTS.....	235
9.3.	REVISITING THE CONJECTURE MAP .....	236
9.3.1.	<i>High-level Conjecture</i> .....	238
9.3.2.	<i>Embodiment of the Design</i> .....	238
9.3.2.1.	Tools and Materials.....	238
9.3.2.2.	Task Structures .....	240
9.3.2.3.	Participant Structures .....	242
9.3.2.4.	Discursive Practices.....	243
9.3.3.	<i>Mediating Processes</i> .....	243
9.3.3.1.	Observable Interactions .....	243
9.3.3.2.	Participant Artefacts .....	244
9.3.3.3.	The Reported Interactions.....	246
9.4.	THEORETICAL CONJECTURES SUBSTANTIATED THROUGH REACHING THE DESIRED OUTCOMES.....	246
9.5.	RESEARCHER REFLECTIONS .....	248
9.6.	SUMMARY .....	250
<b>CHAPTER 10 – OVERALL CONTRIBUTIONS AND RECOMMENDATIONS.....</b>		<b>251</b>
10.1.	INTRODUCTION .....	251
10.2.	THEORETICAL (DISTAL) CONTRIBUTIONS .....	253
10.2.1.	<i>Resonance</i> .....	253
10.2.2.	<i>Synaesthetic Synchronisation</i> .....	256
10.2.3.	<i>Extension of Identity Texts for use in endangered language contexts</i> .....	257
10.3.	TRANSFERABLE (MEDIAL) CONTRIBUTIONS.....	258
10.3.1.	<i>Revised design criteria</i> .....	258
10.3.2.	<i>A robust cloud-based infrastructure to support Home-School activities in small rural schools</i> .....	259
10.3.3.	<i>An Eight-week Programme for Engagement with Rich Language Resources</i> .....	262
10.4.	RECOMMENDATIONS .....	266
10.4.1.	<i>Recommendations for implementation and spread</i> .....	266
10.4.2.	<i>Recommendations for further research</i> .....	267
10.5.	CONCLUSION .....	267
<b>BIBLIOGRAPHY .....</b>		<b>268</b>
<b>APPENDIX A – ETHICS DOCUMENTS .....</b>		<b>282</b>
SCHOOL INFORMATION SHEET .....		282
SCHOOL CONSENT FORM .....		284
PARENT INFORMATION SHEET.....		285
PARENT CONSENT FORM .....		287
GARDA VETTING FORM.....		288
<b>APPENDIX B – SAMPLE EXTRACTS FROM THE ANALYSIS MAP .....</b>		<b>289</b>
WORK OUTSIDE THE SCOPE OF THE PROJECT .....		289
TECHNICAL PROBLEMS .....		289

## Table of Figures

FIGURE 1 - A COLOUR-CODED MAP OF IRELAND SHOWING THE SEVEN COUNTIES IN WHICH GAELTACTAÍ ARE LOCATED WITH COLOURS INDICATING THE VARIOUS CATEGORIES.....	18
FIGURE 2 – UNBALANCED BILINGUALISM (FROM PÉTERVÁRY <i>ET AL.</i> 2014).....	21
FIGURE 3 - PROTESTS AGAINST SEVERE CUTBACKS IN THE GAELTACHT AND ON LANGUAGE ISSUES [REPRODUCED FROM ANSIONNACHFIONN.COM] .....	34
FIGURE 4 - A TRANSFORMATIVE PEDAGOGY (REPRINTED FROM CUMMINS AND EARLY 2011).....	59
FIGURE 5 - TYPES OF DEVICE BEING USED IN IRISH SCHOOLS (COSGROVE <i>ET AL.</i> 2014, P.13).....	70
FIGURE 6 - DBR ITERATIONS (REPRINTED FROM (BARAB 2006) ) .....	86
FIGURE 7 - GENERIC MODEL FOR DESIGN RESEARCH (REEVES AND MCKENNEY 2013, P.76).....	89
FIGURE 8 – MICRO- AND MACRO- DESIGN CYCLES IN THE DEVELOPMENT OF A LOCAL INSTRUCTION THEORY (REPRINTED FROM GRAVEMEIJER AND COBB, 2006, P.29).....	90
FIGURE 9 - CONJECTURE MAP OUTLINE (ADAPTED FROM SANDOVAL, 2014, P.21 .....	92
FIGURE 10 - CATEGORY MAP SHOWING HOW MAIN CATEGORIES WERE IDENTIFIED AND REPRESENTED. THESE ARE SURROUNDED BY SUBCATEGORIES OF A SIMILAR COLOUR. ARCS (LABELLED AND UNLABELLED) WERE USED TO DENOTE RELATIONSHIPS BETWEEN CATEGORIES. TEXT COLOUR WAS USED TO MARK SIMILARITIES BETWEEN SUBCATEGORIES WITH DIFFERENT PARENT NODES.....	103
FIGURE 11 – ILLUSTRATING THE USE OF THE NOTE FEATURE IN VUE TO ADD TEXT TO A CATEGORY SUCH AS RESEARCH METADATA, DESCRIPTION OF THE NODE OR KEY QUOTES FROM THE DATA.....	104
FIGURE 12 - SCREENSHOT OF THE RAIDIÓ NA GAELTACHTA ARCHIVE DATABASE .....	112
FIGURE 13 - AN EXCHANGE BETWEEN TEACHERS AND THE RESEARCHER ON A WIKI TALK PAGE (CONTRIBUTOR NAMES ANONYMISED).....	112
FIGURE 14 - SAMPLE WIKI PAGE WHICH TEACHERS PARTICIPATING IN THE PROJECT CONTRIBUTED TO BY ADDING METADATA RELATING TO EACH ONE OF THE CLIPS TO BE USED AS PART OF THE iTunesU CHANNEL .....	113
FIGURE 15 – SAMPLE TASKS FROM THE GUIDELINES FOR TEACHERS FOR USING THE iTunesU COLLECTIONN (FOLKLORE GENRE) .....	114
FIGURE 16 - CONJECTURE MAP OF THE INITIAL DESIGN OF THE INTERVENTION .....	117
FIGURE 17 - THE HARDWARE PURCHASED FOR THE INTERVENTION INCLUDED MP3 PLAYERS/RECORDERS WITH DIRECT USB CONNECTOR, ATTRACTIVE BUT STURDY HEADPHONES, CHEAP LAPEL-MICROPHONES AND AUDIO SPLITTERS .....	120
FIGURE 18 - BLANK STORYBOARD USEFUL FOR DEVELOPING A MULTIMODAL NARRATIVE THAT CAN BE USED WITH A TOOL SUCHAS PHOTOSTORY .....	121
FIGURE 19 - THE RECORDING SCREEN IN PHOTOSTORY WHERE, WITH A CONVENTIONAL PHOTOSTORY, THE RED BUTTON IS CLICKED AND THE USER THEN RECORDS THEIR NARRATION INTO A MICROPHONE CONNECTED TO THE COMPUTER. THIS NARRATION TRACK IS NOT USED IN THE CASE OF A PRE-RECORDED NARRATION TRACK (SUCH AS A CLIP FROM THE ARCHIVES OR ONE RECORDED AT HOME). THE MUSIC TRACK IS USED INSTEAD. ....	122
FIGURE 20 - THE ADD BACKGROUND MUSIC SCREEN IN PHOTOSTORY WHICH CAN BE USED TO ADD A PRE-RECORDED VOCAL TRACK SUCH AS A CLIP FROM THE RNA G ARCHIVE .....	123
FIGURE 21 - THE CUSTOMISE MOTION SCREEN IN PHOTOSTORY WHICH ENABLES THE DURATION OF THE AUDIO TO BE SET IN SECONDS AND TENTHS OF SECONDS. WHEN PHOTOSTORY IS USED WITH AUDIO FROM THE ARCHIVES, THIS IS THE PRINCIPAL SCREEN WHERE SYNCHRONISATION BETWEEN THE AUDIO TRACK AND EACH IMAGE IS PERFECTED – WHERE THE SYNCHRONISATION CYCLE (FIGURE 22) TAKES PLACE.....	124
FIGURE 22 - THE SYNCHRONISATION CYCLE .....	128
FIGURE 23 - WALL-MOUNTED DESK FOR DESKTOP COMPUTERS IN CLUAIN LOCHA SUITED SHORT USAGE RATHER THAN COLLABORATIVE LEARNING .....	144
FIGURE 24 - WALL DISPLAY FOR THE LOGAINM ÁITIÚIL PROJECT.....	146
FIGURE 25 – TWO SAMPLE RECORDS FROM THE RADIO DATABASE HIGHLIGHTING THE VARIANTS OF “CLUAIN LOCHA” THAT WERE SEARCHED FOR .....	151
FIGURE 26 - NIAMH NOTICES HER GREAT-GRANDFATHER'S NAME LISTED IN THE RADIO ARCHIVE DATABASE.....	152
FIGURE 27 - RESOURCES FROM HOME: THE COVERS OF TWO OF THE YEARBOOKS THAT WERE BROUGHT IN, DIGITISED AND UPLOADED TO THE WIKI .....	154
FIGURE 28 - CLASS GATHER AROUND TO LOOK AND TALK ABOUT WHO'S WHO IN AN OLD PHOTOGRAPH FROM 1951 .....	156

FIGURE 29 – LEFT: HARRY AND OSCAR WORKING ON THEIR MULTIMODAL ARTEFACT DICTATING THE AUDIO FROM HIGHLIGHTED PARTS OF THE LOGAINM ÁITIÚIL PROJECT BOOK. RIGHT: THE FOUR BOYS IN THE GROUP BEING ASSISTED BY NORITA WITH THEIR DICTATION. ....	159
FIGURE 30 – PHOTOGRAPHS USED IN THEIR MULTIMODAL ARTEFACTS BY THE SEANPHORTACH GROUP WHICH WERE TAKEN ON A FIELD TRIP DURING THE LOGAINM ÁITIÚIL PROJECT .....	160
FIGURE 31 – LEFT: THE OLD SCHOOL GROUP WORKING IN THE SCHOOL’S KITCHEN TO LIMIT THE NOISE FROM OTHER GROUPS THAT WAS AFFECTING THE RECORDING OF THE AUDIO. RIGHT: A SCAN FROM THE WALL DISPLAY AND A PHOTOGRAPH FROM A SCHOOL FIELD TRIP WITH A ‘BLACK AND WHITE’ FILTER APPLIED IN PHOTOSTORY WERE TWO OF THE IMAGES USED BY THE OLD SCHOOL GROUP .....	160
FIGURE 32 – HARRY’S WIKI PAGE: AN PORTACH .....	166
FIGURE 33 – CLASS WEB ON NATIVE AMERICAN THEME (MOLL AND WHITMORE 1993, p.32) .....	175
FIGURE 34 – LEFT: ME WRITING ON THE WHITEBOARD FOLLOWING THE CHILDREN’S PROMPTS AS WE BRAINSTORM ABOUT THE LOCAL AREA. RIGHT: THE COMPLETED MIND MAP DEVELOPED WITH THE PARISH “CLUAIN LOCHA” AS THE HUB OF THE MAP .....	179
FIGURE 35 – CHILDREN IN CLUAIN LOCHA LISTENING COLLABORATIVELY TO THE RADIO CLIPS EXTRACTED FOR THEM BASED ON THEIR BRAINSTORMING .....	180
FIGURE 36 – EXCERPT FROM A BLANK RICHNESS SHEET - USED TO NOTE RICHNESS IN LANGUAGE IN THE AUDIO CLIPS.....	181
FIGURE 37 – SORCHA’S RICHNESS SHEET .....	182
FIGURE 38 – CLASS KNOWLEDGE BUILDING ABOUT LANGUAGE. HERE WE’RE USING FOCALIE TO HELP US TRY TO DECIPHER THE TERM ‘SCALTRACHA’ OR ‘SCAILPREACHA’ THAT FEATURES IN THE WAR OF INDEPENDENCE CLIP.....	183
FIGURE 39 – EXTRACT FROM OSCAR’S RICHNESS SHEET HIGHLIGHTING THE TERM “SMUICÓIDEACHAÍ”. “N + ?” INDICATE THAT THE TERM WAS NEW TO HIM AND THAT HE DIDN’T UNDERSTAND IT .....	184
FIGURE 40 – THE CLASS VIEWING THE EXEMPLARY ARTEFACT ON THE LOCAL AREA .....	186
FIGURE 41 – CLUAIN LOCHA - THEMES AND AUDIO CLIPS THAT EACH CHILD/GROUP WORKED ON .....	188
FIGURE 42 – FIONN AND LABHRÁS SEARCHING FOR IMAGES RELATING TO THE WAR OF INDEPENDENCE.....	189
FIGURE 43 – FIONN AND LABHRÁS WORKING ON THEIR ARTEFACT AND SYNCHRONISING THE AUDIO WITH THE IMAGES THEY HAD GATHERED. CLUAIN LOCHA, SESSION 11.....	190
FIGURE 44 – TWO OF THE CARTOON IMAGES USED BY OSCAR IN HIS ARTEFACT .....	192
FIGURE 45 – CHILDREN TOOK GREAT INTEREST IN EACH OTHER’S ARTEFACTS AND OFFERED HELP, SUGGESTIONS AND A LOT OF PRAISE .....	193
FIGURE 46 – SCREENSHOTS FROM THE SCHOOL’S ANTI-RACISM MULTIMODAL ARTEFACT CREATED USING TECHNOLOGY AND SKILLS FROM THE INTERVENTION .....	194
FIGURE 47 – THE COMMUNITY CELEBRATION IN CLUAIN LOCHA.....	196
FIGURE 48 – SYNCHRONISATION SHEETS (TOP PORTION SHOWN) WERE DISTRIBUTED TO THE CHILDREN TO HELP PLAN THEIR ARTEFACTS AND ENACT THE SYNCHRONISATION CYCLE .....	204
FIGURE 49 – SAMPLE SYNC SHEET DISTRIBUTED TO THE CHILDREN WHILE THEY VIEWED AN EXEMPLARY ARTEFACT THAT I CREATED BASED ON AN AUDIO CLIP ON THE ANNUAL PILGRIMAGE TO OILEÁN NAOMH CHIARÁIN. IT SHOWS TIMECODES, IMAGES AND PHOTOSTORY EFFECTS APPLIED.....	205
FIGURE 50 – BARR NA LEICE COLLABORATIVE MIND MAP . IDENTIFYING CHARACTERISTICS HAVE BEEN ANONYMISED BUT THE STRUCTURE OF THE MAP IS IDENTICAL TO THE ONE GENERATED BY THE CHILDREN. ....	206
FIGURE 51 – EXTENSIVE COLLABORATIVE LISTENING IN SCOIL BHARR NA LEICE. MÚINTEOIR SÍLE WAS ABLE TO PLUG HER SET OF HEADPHONES INTO EACH GROUP’S AUDIO SPLITTER TO SUPPORT THEIR LISTENING .....	208
FIGURE 52 – BARR NA LEICE - THEMES AND AUDIO CLIPS THAT EACH GROUP WORKED ON .....	211
FIGURE 53 – MÁIRE’S SYNCHRONISATION SHEET WHICH SHOWS EVIDENCE OF HER SUSTAINED LISTENING TO THE AUDIO AS SHE PLANS FOR SYNAESTHETICALLY ADDING IMAGES AND EFFECTS TO IT AT SPECIFIC TIMES IN THE NARRATIVE USING PHOTOSTORY .....	211
FIGURE 54 – ÍDE CHECKING TIMINGS ON HER SYNC SHEET AS TO HOW LONG TO DISPLAY THE IMAGE OF A PAIR OF DANCING SHOES (ON SCREEN) AS SHE LISTENS TO THE AUDIO OF HER LATE GREAT-GRANDFATHER, MÍCHEÁL JAISIE, A WELL-KNOWN LOCAL DANCER IN HIS TIME .....	214
FIGURE 55 – ULTAN (LEFT) AND LABHRÁS (RIGHT) ENJOYING TADHG’S (CENTRE) MULTIMODAL ARTEFACT. THE LINE “SEANPHOTA GLIOMAIGH” FROM THE SONG IS CURRENTLY PLAYING AS TADHG’S PICTURE OF A CHILD DRESSED AS A LOBSTER IS CURRENTLY ON SCREEN (FAR LEFT) .....	217
FIGURE 56 – CHILDREN GATHER IN CLOSER TO VIEW TADHG’S ARTEFACT .....	218
FIGURE 57 – SIOBHÁN AND DÓNAL FROM THE OILEÁN MÓR GROUP USING THEIR SYNCHRONISATION SHEET AS THEY WORK ON TIMINGS BETWEEN THE IMAGES AND THE AUDIO AND AN EXCERPT FROM THEIR SYNCHRONISATION SHEET SHOWING THEIR PLANNED IMAGES TO ADD TO THE AUDIO. THEY ADDED A TIC AFTER EACH IMAGE WAS FOUND AND ADDED TO THE ARTEFACT.....	220



FIGURE 58 – THE IMAGES THAT THE OILEÁN MÓR GROUP USED COMPARED TO THEIR SYNCHRONISATION SHEET. THE IMAGE OF THE CURRACH IS TAKEN FROM ONE OF THE LOCAL YEARBOOKS AND FEATURES A LOCAL MAN RETURNING TO VISIT AN T-OILEÁN MÓR .....	222
FIGURE 59 – THE REACTION OF SIOBHÁN WHEN SHE REALISES THAT THEY’VE LOST A LOT OF WORK DUE TO PHOTOSTORY CRASHING .....	223
FIGURE 60 – THE GROUPS WHO WERE COURAGEOUS ENOUGH TO PRESENT THEIR ARTEFACTS AT THE COMMUNITY CELEBRATION – LEFT: NAMES AN GRÚPA RIGHT: ULTAN AND LORCÁN.....	224
FIGURE 61 – REFINED CONJECTURE MAP AFTER COMPLETION OF PHASE 3.....	237
FIGURE 62 – GENERIC MODEL FOR DESIGN RESEARCH, ADAPTED BY HALL (McKENNEY AND REEVES 2013, P.76) .....	252
FIGURE 63 – AN ACTIVITY THAT PROMOTES ENGAGEMENT WITH RICH LANGUAGE RESOURCES BASED ON THE THEME OF THE LOCAL AREA. THE PRODUCTION OF NEW KNOWLEDGE IN THE FORM OF A MULTIMODAL ARTEFACT IS THE LIKELY OUTCOME OF SUCH AN ACTIVITY.....	254
FIGURE 64 – AN ACTIVITY THAT PROMOTES ENGAGEMENT WITH <i>RESONANT</i> RICH LANGUAGE RESOURCES BASED ON THE THEME OF THE LOCAL AREA. <i>RESONANCE</i> (A PERSONAL/EMOTIONAL CONNECTION WITH A RESOURCE) RESULTS IN A LIKELY DEEP ENGAGEMENT WITH THAT RESOURCE PRODUCING TRANSFORMATIVE KNOWLEDGE AND A <i>RESONANT</i> MULTIMODAL ARTEFACT FOR THE LEARNER/GROUP. ....	255
FIGURE 65 – THE SYNCHRONISATION CYCLE (ORIGINAL VERSION IN CHAPTER 5) .....	256
FIGURE 66 – THE DUAL SYNCHRONISATION CYCLE - THE FIRST ACTIVITY (LEFT) IS THE CREATION OF THE SYNCHRONISATION SHEET IN A CYCLE OF LISTENING AND RELISTENING AS THE LEARNER/GROUP OF LEARNERS IMAGINE WHAT IMAGES SUIT EACH IDENTIFIED SEGMENT OF THE AUDIO NARRATIVE. THE SECOND ACTIVITY CREATES THE MULTIMODAL ARTEFACT USING THE SYNC SHEET AS A SCAFFOLD AND INVOKES A FURTHER CYCLE OF LISTENING AND RELISTENING AS THE LEARNER/GROUP OF LEARNERS SYNCHRONISE THE IMAGES WITH THE AUDIO USING MULTIMODAL SOFTWARE .....	257
FIGURE 67 – THE DUAL SYNCHRONISATION CYCLE .....	257
FIGURE 68 – A ROBUST TECHNICAL INFRASTRUCTURE WITH RESOURCES STORED LOCALLY AND IN THE CLOUD .....	260
FIGURE 69 – A TYPICAL FOLDER STRUCTURE FOR A CLOUD ACCOUNT TO FACILITATE SCHOOL-HOME SHARING OF RESOURCES .....	261
FIGURE 70 – AN EIGHT WEEK PROGRAMME FOR TECHNOLOGY-SUPPORTED ENGAGEMENT WITH RICH LANGUAGE RESOURCES IN GAELTACHT SCHOOLS .....	265

## Table of Tables

TABLE 1 - KEY EVENTS IN THE STATE AFFECTING EDUCATION MATTERS IN THE GAELTACHT.....	15
TABLE 2 – CATEGORIES OF GAELTACHT DEFINED ACCORDING TO LINGUISTIC CRITERIA.....	17
TABLE 3- DETAILS OF GAELTACHT PRIMARY SCHOOLS WHO RESPONDED TO THE LANGUAGE SURVEY (90% RESPONSE RATE). AREAS AREA CATEGORISED BY THE NUMBER OF DAILY IRISH SPEAKERS IN THE SCHOOL'S CATCHMENT AREA [REPRODUCED FROM MAC DONNACHA <i>ET AL.</i> (2004, p.41)] .....	23
TABLE 4 - LANGUAGE OF INSTRUCTION IN GAELTACHT PRIMARY SCHOOLS [REPRODUCED FROM MAC DONNACHA <i>ET AL.</i> (2004, p.71)] .....	24
TABLE 5 - DETAILS OF CHILDREN'S LEVELS OF FLUENCY IN CATEGORY A PRIMARY SCHOOLS [REPRODUCED FROM MAC DONNACHA <i>ET AL.</i> (2004, p.41)] .....	25
TABLE 6 - RESEARCH SCHEDULE.....	84
TABLE 7 - SAMPLE OF THE MULTIMODAL TRANSCRIPTION METHOD USED .....	102
TABLE 8 - CHILDREN AND CLASSES IN SCOIL CHLUAIN LOCHA – ALL PSEUDONYMS .....	138
TABLE 9 - CHILDREN AND CLASSES IN SCOIL BHARR NA LEICE (ALL PSEUDONYMS).....	202
TABLE 10 - STRUCTURE OF TADHG'S ARTEFACT .....	216

## **Abstract**

This thesis outlines the trajectory of a pedagogic intervention that was designed to support the language development of native-speaking children of Irish through their sustained engagement with rich language resources from the RTÉ Raidió na Gaeltachta archive and with resources brought in from home. Design-based research, which is an interventionist, iterative approach for designing practical solutions to complex educational problems was a suitable approach to take in the context of the precarious nature of Irish as a community language in the Gaeltacht. The theories guiding the design of the intervention included socio-cultural theory, new literacies studies, multimodality and a number of theories that link school-based and out-of-school literacy practices. These include funds of knowledge, knowledge producing schools, artefactual literacies and identity texts.

The research was conducted across three phases in two schools in Category A areas of the Conamara Gaeltacht. Phase 1 (preliminary/exploratory) and Phase 2 (initial learning programme) were implemented in one school and Phase 3 (refined learning programme) in a second. This helped to examine the transferability of the intervention to other similar contexts. Video data of the learning sessions, post-session design debriefings, interviews with the teachers and focus groups with the children were the primary means of data collection. Analysis was conducted using a variant of grounded theory which yielded initial codes and categories using constant comparison methods. Emergent themes were identified using visualisation and diagramming techniques. Narratives of Phase 1 and Phase 2 follow the emergent themes along the design trajectory of the intervention. Narratives of Phase 3 describes the learning trajectories of some of the participants.

A robust technical infrastructure was implemented in both schools that enabled the digital resources to be shared by the children at home. The children were encouraged to engage with the resources with members of their families and reported interactions suggested that this was largely successful, illustrating how technology can strengthen home-school connections and create new opportunities for intergenerational language transmission. The intervention successfully encouraged the children to engage with rich language resources through the creation of multimodal artefacts that required the synchronisation of the audio with visual images. The pedagogic processes were designed to encourage repeated listening to the audio while both planning for and during actual artefact creation. A key finding was that many children identified personal connections in the resources and those who did tended to engage deeper and longer in the learning activities than those who did not. This was evidenced in their observed interactions and in their artefacts. The research produced a number of theoretical and practical outputs that should be of interest to both Gaeltacht teachers and policy makers.

## **DEARBHÚ**

Dearbhaím gurb é mo shaothar féin go hiomlán atá san ábhar seo atá mé a thíolacadh le haghaidh measúnachta léinn. Dearbhaím nár baineadh aon chuid de as saothar aon duine eile ach amháin sa mhéid atá luaite agus aitheanta sa téacs.

Niall Mac Uidhílin, Samhain 2016

## BUÍOCHAS

Ba mhaith liom buíochas ó chroí a ghabháil le mo bheirt stiúrthóirí, An Dr Tony Hall agus An Dr Fiona Concannon, le scrúdaitheoirí an tráchtas, An tOllamh Jim Cummins agus an Dr Muiris Ó Laoire (seachtrach) agus an Dr Laoise Ní Thuairisg (inmheánach) agus le maoinitheoirí an tráchtas, An Chomhairle um Oideachas Gaeltachta agus Gaelscolaíochta agus Ollscoil na hÉireann, Gaillimh.

Roinn go leor daoine a gcuid ama liom go fial agus go flaithiúil agus iad ag tabhairt cúnamh dom agus bhí daoine san obair, sna scoileanna agus sa mbaile an-tuisceanach agus mé i mbun an taighde seo. Ina measc siúd bhí Peadar Mac Muiris, Bairbre Ní Thuairisg, Sinéad Ní Mhullaoide, Anna Ní Chartúir, Mairéad Ní Chualáin, Máire Uí Dhufaigh, Dorothy Ní Uigín, Brendan Mac Mahon, Gerry Mac Ruairc, Rose Ní Dhubhdha, Séamas Ó Concheanainn, Seathrún Ó Tuairisg, Gearóid Ó Cadhain, Bríd Nic Dhonnacha, Nóra Uí Shúilleabháin, Mícheál Mac Lochlainn, Michael Barry Ó Flatharta, Dónall Ó Braonáin, Muireann Ní Mhóráin, Pól Ó Cainín, Bláthnaid Ní Ghréacháin, Máirín Mhic Lochlainn, Neansaí Ní Choisdealbha, Muintir Uí Dhurcáin, Muintir Uí Chléirigh agus go mór-mhór gasúir Scoil Chluain Locha agus gasúir Scoil Bharr na Leice.

Ní bheinn tar éis an t-ualach oibre a chur dím murach na tacaíochta a bhfuair mé ó mo chlann – mo bhean chéile Celine agus mo chuid gasúir Seán, Éabha agus Róisín. Thug sibh an-mhisneach agus cúnamh dom nuair a bhí mé ag bualadh cloigeann le falla. Tá mé go mór faoi chomaoin daoibh agus tá súil agam go bhfuil sibh ag cur aithne orm arís agus é seo ar fad thart. Is i gcuimhne ar m'athair agus mo mháthair a thiomnaím an saothar seo.

Tá an Polasaí seo ar an gcéad straitéis chuimsitheach don oideachas sa Ghaeltacht ó bunaíodh an Stát. Tá an Rialtas an-tiomanta d'fheidhmiú na mbeart atá sa Straitéis 20 Bliain don Ghaeilge 2010-2030 agus anseo, sa Pholasaí don Oideachas Gaeltachta, déantar cur síos ar an tslí ina dtacóimid le scoileanna Gaeltachta chun oideachas ardcháilíochta trí mheán na Gaeilge a sholáthar do pháistí na Gaeltachta

*This Policy is the first comprehensive strategy for education in the Gaeltacht since the establishment of the State. The Government is strongly committed to implementing the actions in the 20-Year Strategy for Irish and this Policy on Gaeltacht Education sets out how we will support Gaeltacht schools to provide high-quality, Irish-medium education to the children of the Gaeltacht*

An Taoiseach, Enda Kenny, 28/10/2016

From the standpoint of the child, the great waste in school comes from his inability to utilize the experience he gets outside the school in any complete and free way within the school itself; while on the other hand, he is unable to apply in daily life what he is learning in school. That is the isolation of the school – its isolation from life.

(Dewey 1915, p.67)

# Chapter 1 - Introduction

## 1.1. The research problem

Recent research has shown that the Gaeltacht is in crisis and that use of the language, particularly among the young, is in rapid decline even in the strongest Gaeltacht areas (Mac Donnacha *et al.* 2004; Ó Curnáin 2007; Ó Giollagáin *et al.* 2007; Ní Shéaghdha 2010; Lenoach 2012; Péterváry *et al.* 2014). The research outlined in this thesis was conducted in a policy vacuum where the unique pedagogic requirements of native-speaking Gaeltacht children had been completely ignored since the foundation of the State. In contrast to native-English speakers, there was no equivalent curriculum to develop the language of native-Irish speakers to the same degree, resources were aimed at L2 learners of Irish and were completely unsuitable, there was no emphasis on enrichment of language or of dialect and many parents were unhappy with some Gaeltacht teachers' levels of Irish (Coimisiún na Gaeltachta 2002). From a teacher's perspective, the classroom in a Category A area of the Gaeltacht finds them in a challenging multi-class environment trying to cater for the multiple needs of L1 and L2 speakers of Irish. It is suggested that the current system assists in the deterioration of L1 speakers' Irish through their socialisation with learners in school (Mac Donnacha *et al.* 2004; Ó Giollagáin *et al.* 2007; Ní Shéaghdha 2010). This situation has continued to prevail in spite of repeated reports recommending radical changes to the system. Ó Flatharta (2007a), having performed an exhaustive trawl of State papers starkly observes:

- A laghad aird a thugtar ar cheisteanna a bhaineann le cearta daonna agus le cearta pobail ar chóras oideachais a fháil ina dteanga féin, tráth a mbíonn córas oideachais na Gaeltachta á phlé<sup>1</sup>
- A laghad aird a thugtar ar chóras oideachais na Gaeltachta agus a laghad tábhacht a leagtar air i mbuanú na Gaeilge ná i gceist na Gaeilge go náisiúnta
- A laghad taighde atá déanta ar cheist an oideachais sa Ghaeltacht
- A laghad moltaí sonracha a dhéantar a bhaineann le struchtúr an oideachais sa Ghaeltacht
- A laghad aird a thugtar ar chur i bhfeidhm na moltaí ná ar aithint cúraimí agus freagrachtaí feidhmiúcháin
- A laghad infheistíocht bhreise atáthar tar éis a dhéanamh sa chóras bunscolaíochta ná sa chóras iar-bhunscolaíochta
- A laghad saineolas atáthar tar éis a fhorbairt sna réimsí seo den oideachas in Éirinn

(Ó Flatharta 2007a, p.59)

---

<sup>1</sup> •The lack of attention in any discussion about Gaeltacht education to issues of human rights and community rights, in order to make an educational system in their own language available to the people of the Gaeltacht

The Taoiseach's historic statement that opens this thesis was made on the 28<sup>th</sup> of October, 2016, in Scoil Náisiúnta Mhic Dara, An Cheathrú Rua, a primary school in a Category A area of the Conamara Gaeltacht. In it he acknowledged that the State, up until then, had neglected the educational needs of native-speaking children of Irish. The occasion was the launch of a policy on Gaeltacht education (ROS 2016). For the first time since the foundation of the State, Gaeltacht communities have reasons to be optimistic that when native speaking children enter the national school system, this experience may actually improve their ability in their native language rather than the opposite, as is often currently the case. This of course is assuming that the policy is implemented and funded properly.

The policy proposals (ROS 2015a), upon which the new policy is based, were welcomed with cautious optimism when published in May, 2015 during the writing of this thesis. These, rather than the policy itself, are discussed in Chapter 2. Irrespective of policy, however, it is urgent that language revitalisation interventions such as the one proposed in this research are implemented in order to try to reverse the rapid decline of Gaeltacht children's ability and use of the community's language.

The research that I describe in this thesis was conducted in parts of the Conamara Gaeltacht where Irish is still the language spoken by the majority of the local community (labelled Category A areas (Mac Donnacha *et al.* 2004; Ó Giollagáin *et al.* 2007)). Whether that remains the case is dependent on each generation transmitting the local language and culture to the next. Many Gaeltacht schools, particularly in stronger Gaeltacht areas are in rural areas and are often small 1-, 2- or 3- teacher schools. This results in several classes (or all in the case of 1-teacher schools) being taught by the same teacher.

On top of the logistical complexities created by trying to deliver multiple curricula to different children, many language and communication issues also arise. Although the curriculum is delivered through the medium of Irish, not all of the children attending a school will have Irish at home, nor necessarily will parents have any particular interest in the language. Local parents will send their children to the local school and a new child coming from a home with no Irish and no interest in Irish can have a significant effect on the sociolinguistic context of a small Gaeltacht school (Mac Donnacha *et al.* 2004; Ní Shéaghdha 2010). This also directly links with the new policy objective that recommends differentiated provision for native language speakers "to enrich their Irish language development and promote their socialisation in the Irish language" (ROS 2016, p.37)

- 
- The extent of official inattention to a Gaeltacht education system and the absence of importance attached to the role of any such system in the context of the survival of the Irish language or of the Irish Language issue nationally
  - The paucity of research on Gaeltacht education
  - The paucity of recommendation regarding the structure of Gaeltacht education
  - The lack of implementation of recommendations and the absence of recognition of responsibility in that respect
  - The failure to make additional investment in the primary and post-primary education sector
  - The failure to develop expertise in the primary and post-primary sector



## **1.2. Research Objectives**

The research has three interrelated research goals: one principal goal and two subsidiary goals. The principal research goal is: to investigate how pedagogical interventions that draw on a new literacies perspective, and which are supported by technology, can be designed to support young learners' engagement with rich language resources across school-home-community contexts in Category A areas of the Gaeltacht. The first subsidiary goal is in two parts: (a) to investigate if an intervention drawing on a new literacies perspective supported by technology creates novel opportunities for engagement with rich language resources in a Gaeltacht context, and (b), if this is the case, to determine the nature of these opportunities and in particular what roles do the children, the teacher, the wider community and the technology play in this process? The second subsidiary goal is to develop a model that describes the main elements (both practical and theoretical) in a successful intervention to engage young learners with rich language resources in a Gaeltacht context.

## **1.3. Methodology**

A Design-Based Research (DBR) methodology was used which involved the iterative design of an intervention to address the objectives of the research. DBR is an approach that attempts to iteratively design a pedagogic intervention to solve a complex problem (Barab 2006; Van den Akker et al., 2006; McKenney and Reeves 2013). The goals of DBR are to produce both theoretical and practical outputs (Barab and Squire 2004). The theoretical output is in the form of a local instruction theory that has generated theoretical principles to guide future researchers or practitioners (Gravemeijer and Cobb 2006). The practical outputs are the intervention itself and any artefacts produced over the course of the intervention (Edelson 2002; Design-Based Research Collective 2003; Kelly 2004). Ideally interventions should cycle through several phases/iterations and be implemented in more than one context to examine an intervention's transferability (McKenney and Reeves 2013; Barab 2014).

The research was conducted across three phases in two typically small schools in Category A areas of the Conamara Gaeltacht. Phase 1 was a preliminary/exploratory phase, conducted in Scoil Chluain Locha, which enabled the researcher to view how the children engaged with a number of different technologies around rich language resources. Phase 2 was a refined learning programme that was implemented in the same school. Phase 3 refined the learning programme further and implemented it in a second school, Scoil Bharr na Leice, to investigate if the intervention was transferable to other similar contexts. Video data of the learning sessions, post-session design debriefings, interviews with the teachers and focus groups with the children were the primary means of data collection. Analysis was conducted using a variant of grounded theory which yielded initial codes and categories using constant comparison methods. Emergent themes were identified using

visualisation and diagramming techniques. The final thematic diagram was used as the basis for generating thick narratives that employed transcripts and still frame images from the video data to illustrate key events during the intervention (Barron 2007). Narratives of Phase 1 and Phase 2 describe the design trajectory of the intervention. Narratives of Phase 3 attempt to describe the learning trajectories of some of the participants. These are detailed in chapters 6, 7 and 8.

#### **1.4. Guiding theoretical principles**

The work of Joshua Fishman is central to language revitalisation efforts. Fishman, like many other scholars identified intergenerational transmission as the key factor in language maintenance efforts (Fishman 1991). Fishman has suggested that time and resources are often wasted on language revitalisation efforts that are solely school-based and that these would be better directed towards interventions that try to connect the school with surrounding homes and the local language community. Ensuring that this connection was established using internet connectivity was one of the key theoretical principles underlying the design of the intervention.

The pedagogical principles that underlined the design of the intervention included socio-cultural theory (Vygotsky 1978) and situated learning (Lave & Wenger, 1991), new literacies studies (Street 1985, 1998; Kalantzis *et al.* 2010; Lankshear & Knobel 2011), multimodality (Kress 1997, 2003; Jewitt 2005; Pahl and Rowsell 2007) and a number of theories that link school-based and out-of-school literacy practices. These include funds of knowledge (Moll *et al.* 1992; González *et al.* 2005), knowledge producing schools (Bigum 2002; Rowan and Bigum 2010), artefactual literacies (Pahl and Rowsell 2011) and identity texts (Cummins *et al.* 2007; Cummins and Early 2010). What these approaches have in common in relation to language and literacy learning is that they view texts in a broad sense that incorporates a digital, multimodal view of text consumption and production. They also view peoples' encounters with 'texts' as language or literacy events within a particular social context. Other influencing theoretical principles are drawn from the learning sciences (Bransford *et al.* 1999; Hoadley and Van Haneghan 2012) and the related field of computer-supported collaborative learning (Dillenbourg and Fischer 2007; Koschmann 1993).

#### **1.5. The promise of technology mediated learning**

There has been much debate in the past on the role of technology, and it's potential impact on language revitalisation with recent research moving toward that realisation that it is vital that endangered language communities engage with digital media technologies (Galla 2009; Mac Uidhlin 2013; Hermes *et al.* 2016). Technology has been shown to be a motivating factor in children's learning in general and also in language learning in particular. In their language teaching, Warschauer and Grimes

(2007) found that students working with wikis were more motivated in their work than when using traditional means of assessment. In language listening classes, Rost has found that technology tools that learners enjoy “may help learners relax, become more engaged, and make greater progress in listening” (Rost 2013, p.151). Cummins *et al.* (2007, p. 104) similarly suggest that children “do appear to be motivated by the engagement with technology” .

The influence of technology on a globalised world has suggested to policy-makers that an extended skill set is needed on top of traditional literacy skills to be able to navigate this new multimodal landscape. Terms to describe this skill set that have been used in the research material and that are now appearing in policy documents include 21<sup>st</sup> century skills (Cummins *et al.* 2007; Lankshear and Knobel 2011; DCENR 2013; Slotta 2013; Cosgrove *et al.* 2014; Thompson Long and Hall 2015) and digital literacy skills (Marsh 2006; DES 2008a; Jewitt 2008; DES 2009; Merchant 2009; DES 2011; Potter 2012; DES 2015). The definitions of these terms also often imply a development of critical literacy skills.

The most recent definition of literacy in the current literacy and numeracy strategy for schools in Ireland is typical of this new way of defining literacy in a much broader sense:

Traditionally we have thought about **literacy** as the skills of reading and writing; but today our understanding of literacy encompasses much more than that. **Literacy includes the capacity to read, understand and critically appreciate various forms of communication including spoken language, printed text, broadcast media, and digital media.** Throughout this document, when we refer to “literacy” we mean this broader understanding of the skill, including speaking and listening, as well as communication using not only traditional writing and print but also digital media.

(DES 2011, p.8) [emphasis in original]

Although the definition is somewhat vague on the creation of literacy, it is assumed that this is what is meant by “communication” using “traditional writing” and “digital media” in the final sentence. Cummins *et al.* (2007) suggest that if this kind of rhetoric (which promotes knowledge construction, the development of deep understanding and critical literacy skills) was implemented in schools, it would “represent a radical departure” from traditional education (Cummins *et al.* 2007, p.41). Despite being sceptical about the likelihood of this happening, they claim that “the current discourse provides a unique opportunity for educators to explore forms of critical pedagogy that potentially can exert a transformative impact on students and society” (2007, p.41). Drawing on many similar theories to this research, they then produce a valuable set of criteria for evaluating technology-supported instruction that support literacy and learning which greatly helped to inform the design of the intervention in this research. These criteria are outlined in chapter 3 and several slight amendments are proposed in

chapter 5 to extend the criteria to include listening and speaking skills and to draw attention to the complexities that exist in Gaeltacht classrooms.

## **1.6. Potential contributions of this thesis**

Very little educational research of an interventionist nature has been conducted in the Gaeltacht. Most research to date has been about documenting the increasingly fragile nature of the language and in making high-level language planning recommendations (CILAR 1975; Rialtas na hÉireann 1986; Hindley 1990; Mac Donnacha *et al.* 2004; Harris 2006; Ó Curnáin 2007; Ó Giollagáin *et al.* 2007; Ní Shéaghdha 2010; Lenoach 2012; Péterváry *et al.* 2014; Ó Giollagáin 2014a, 2014b). All of this research suggests that the Gaeltacht is in dire straits and what is badly needed now is more research fuelled by pragmatism to try to improve matters as they currently stand.

Ó Giollagáin *et al.* (2007) made a number of recommendations in areas of statutory reform, local and physical planning, language planning, education, family support services and political structures. These recommendations were dependent on statutory recognition of the three categories of Gaeltacht so that their various requirements could be satisfied. Ní Neachtain (2009, p.11) in discussing the recommendations distilled them into a simple and stark appeal: "tarrtháil an méid den Ghaeltacht atá intarrthála trí bhéim a chur ar Chatagóir A le dianspreagadh agus tacaíocht phoiblí institiúidiúil."

Based on the implementation of these recommendations, Ó Giollagáin (2014a) proposed eight societal aims that could be pursued to at the very least slow the decline of the language in the Gaeltacht. Five of these relate to language planning at the macro level that would require input from the State (including geographical planning and policy proposals) but action through a bottom-up approach at the micro level (Baldauf Jr 2006) of the home-community-school nexus is possible in relation following three:

1. Targeting language planning resources at promoting and supporting the transmission of Irish in the home;
2. Re-establishing the home-school-community (institutional) nexus (Fishman, 1991, pp. 379–380) as a more resilient basis for L1 acquisition of Irish;
3. Restructuring of the educational system in the Gaeltacht to focus on the linguistic and educational requirements of L1 speakers of Irish, i.e., a Gaeltacht curriculum for Gaeltacht children in a Gaeltacht educational system;

(Ó Giollagáin 2014a, p.34)

This thesis is attempting to document one such approach using rich language resources from the Raidió na Gaeltachta archive as input to support children's collaborative creative knowledge production (and consumption) of multimodal artefacts that bridge the home-school-community divide.

The findings from this research add to the current body of research on language revitalisation efforts in at least three ways. Firstly, the research aims to explore the problematic relationship that native speakers of Irish have with written texts and suggest a broader pedagogy that utilises other modes to promote language development and bypass writing. This pedagogy promotes the synchronisation of rich audio resources and visual images to create multimodal artefacts. Secondly, this research aims to explore the role of rich language resources and the pedagogic approach needed to support a connection between home and family identity, and school contexts. Thirdly, this research investigates how technology can be used to cross the school-home-community divide and create new opportunities for intergenerational transmission that result in a sense of pride for the learner and positive affective feedback from loved ones.

## **1.7. Structure of the thesis**

The thesis is set out in ten chapters. Chapter 2 reviews the literature outlining the complexity of the linguistic environment for both teachers and children in primary schools in the strongest areas of the Gaeltacht. The literature shows that the education system in these areas is succeeding in supporting non-native speaking children of Irish to acquire sufficient Irish to function as balanced bilinguals in the school setting but is failing to support native speaking children to acquire sufficient Irish to be fully functional in their native language. The detrimental effects of language standardisation on native speakers is also discussed as is the unsuitability of the vast majority of Irish-medium learning resources for native speakers. The chapter then turns to the work of language activists who have engaged in some successful bottom-up initiatives in the Gaeltacht, none more so than the foundation of Raidió na Gaeltachta in 1972. Its digitised archives of rich language resources are discussed in the context of how new technologies are being appropriated by endangered language communities in language revitalisation efforts.

Chapter 3 reviews the literature relating to theories and practices that have informed the design of the intervention. This includes sociocultural theory, computer-supported collaborative learning, new literacies studies and research practices that bridge the home-school divide including artefactual literacies, funds of knowledge and identity texts. The chapter concludes with the description of three sample projects which exemplify the theoretical principles employed in the design of this research.

Chapter 4 presents the research schedule and then proceeds to outline the nature of design-based research and how it was implemented in the research. Also discussed are the approaches to data collection and analysis as well as ethical considerations.

Chapter 5 presents the initial design of the intervention. A description of the iTunesU project is first described. This greatly informed the design of intervention. The design itself is discussed in the remainder of the chapter. This consists of a set of design requirements (McKenney and Reeves 2013) which are context-specific and drew heavily on the work on the iTunesU project and a set of design conjectures which are theory-based and drew heavily on the literature review. The conjectures are presented in the form of a conjecture map and accompanying narrative (Sandoval 2014).

Chapter 6 provides a detailed set of narratives on the implementation of Phase 1 of the intervention in Scoil Chluain Locha in Conamara. This consisted of two sub-phases. Phase 1a was a preliminary phase of three two-hour sessions to enable familiarisation between the participants and the researcher and to implement a prototype of the design. Phase 1b was an exploratory phase of seven two-hour sessions which enabled the researcher to view how the children engaged with a number of different technologies around rich language resources.

Chapter 7 provides a detailed set of narratives on the implementation of Phase 2 of the intervention, a refined learning programme for engagement with rich language resources, in Scoil Chluain Locha in Conamara. The refinements incorporated those elements which worked best in Phase 1b while abandoning those elements which didn't. This consisted of six two-hour sessions resulting in the completion of multimodal artefacts based on rich language resources. These were presented to the local community at an event at the end of the Phase.

Chapter 8 provides a detailed set of narratives on the implementation of Phase 3 of the intervention, the result of implementing a similar set of six sessions to those that were successfully implemented in Cluain Locha, in a second school, Scoil Bharr na Leice. Rather than provide a set of narratives that follow the design trajectory as was the case in chapters 6 and 7, the narratives in this chapter attempt to paint a more ethnographic picture of the key processes and experiences from both the researcher's and the participants' perspectives (following Mor 2011).

Chapter 9 reviews the design of the intervention looking across the three phases and presents a conjecture map showing the refinements of the design at the end of Phase 3. This is followed by a set of narratives that summarise the key refinements, main findings and breakdowns for each element in the conjecture map. The chapter then discusses how the desired outcomes were achieved. The chapter concludes with my own brief reflections on the implementation of the intervention.

Chapter 10 discusses a number of practical and theoretical contributions of the research. The practical contributions include the intervention itself and the artefacts that were produced over the course of its implementation. The theoretical contributions describe the theoretical insights and constructs that emerged from the analysis of the design. Finally the chapter presents a number of recommendations in relation to widening the implementation of the research and in relation to opportunities for further research.

## **Chapter 2 - Background**

### **2.1. Introduction**

This review of the literature outlines the complexity of the linguistic environment for both teachers and children in primary schools in the strongest areas of the Gaeltacht. The literature shows that the education system in these areas is succeeding in supporting non-native speaking children of Irish to acquire sufficient Irish to function as balanced bilinguals in the school setting but is failing to support native speaking children to acquire sufficient Irish to be fully functional in their native language.

The chapter begins by briefly examining the language planning literature to provide sufficient context for the sections that follow. A brief history of important events relating to the Gaeltacht and its school system precedes a more detailed description of the current state of the language in the Gaeltacht which shows that the language is in critical danger of no longer being passed on *ó ghlúin go glúin* (from generation to generation) and that local dialects are beginning to disappear.

Following this, a detailed description of the State's role in relation to education matters in the Gaeltacht precedes a description of the complexity of the linguistic context in which Gaeltacht schools find themselves. A further initiative by the State to adversely affect the language in the Gaeltacht was the introduction of the written standard in 1958. One of the effects of this was to alienate Gaeltacht children and their teachers from the learning resources being produced to teach their native language and other subjects through their native language. Another effect was to erode the traditional target spoken varieties of local Gaeltacht dialects.

The discussion then centres on bottom-up efforts by local community activists and organisations to support native speaking children in the Gaeltacht and in Gaeltacht schools in particular. Raidió na Gaeltachta is one of the most successful instances of a grass roots initiative and its archive contains thousands of hours of rich language resources which could provide authentic language resources to schools. Language revitalisation efforts worldwide are then discussed particularly in the context of many activists looking toward both traditional and digital media for solutions to the precarious state of the world's endangered languages.

The chapter concludes on a note of optimism describing the recently published proposals for the support of an education system in the Gaeltacht (Rialtas na hÉireann, 2015). The policy was published just as this thesis was about to be submitted and is very similar to the proposals which were widely welcomed by the principal stakeholders in the Gaeltacht education sector (see Section 2.7).

## **2.2. Language Maintenance, Language Shift and Language Revitalisation**

There is no room for honest doubt that the Irish language is now dying. The only doubt is whether the generation of children now in a handful of schools in Conamara, Cloch Chionnaola, and Gaoth Dobhair, and Corca Dhuibhne are the last generation of first-language native speakers or whether there will be one more. (Hindley 1990, p.248)

Language maintenance is defined as when a community continues to speak the language or languages that it has traditionally spoken in the past (Hornberger and King 1996; Spolsky 2009). Language shift occurs when one language spoken by a community is displaced by another (Fishman 1991; Hornberger and King 1996; Ó hIfearnáin 2012). If language shift continues unabated in a community, it can ultimately lead to language death (Dorian 1981). The Irish language in the Gaeltacht is currently going through a period of rapid language shift (Ó Giollagáin *et al.* 2007).

In discussing the power struggles that exist within a society between a minority language and culture and those of the majority, where X-ish is the minority language and culture and Y-ish that of the majority, Fishman (1991, p.60), defines dependency interaction as “a process in which those Xmen who are most like Ymen are the ones most rewarded by the power structure of Yish” (Fishman 1991, p.60) and that that this continually erodes Xish along with its demography, its society and its culture. He goes on to describe how:

Xmen are seemingly faced by a cruel dilemma: either to remain loyal to their traditions and to remain socially disadvantaged (consigning their own children to such disadvantage as well), on the one hand; or, on the other hand, to abandon their distinctive practices and traditions, at least in large part, and, thereby, to improve their own and their children’s lots in life via cultural suicide. (Fishman 1991, p.60)

Vitality is seen as the key characteristic of a living language and *revitalisation* (Spolsky 2009) or reversing language shift (Fishman 1991) is what is required in cases of language revival efforts. The family has been identified as being key in maintaining and preserving languages (Spolsky 2009, 2012; Schwartz and Verschik 2013) with Fishman describing it as “the most common and inescapable basis of mother tongue transmission, bonding, use and stabilization” (Fishman 1991, p.94).



In his eight scale 'Graded Intergenerational Disruption Scale' (GIDS), Fishman (1991) described the current status of a language in terms of its maintenance (stretching from stage 8 where the language is close to extinction to stage 1 where the language is supported at a national level, in higher education, etc.). He identified Stage 6 – “the attainment of intergenerational informality and its demographic concentration and institutional reinforcement” (p.92) – as the most crucial stage on the scale as it concerns the intergenerational transmission of the language at the level of the family - “If its fundamental desirability is recognized, then all other RLS-efforts can be evaluated in terms of their feedback or by-product contribution to this stage” (Fishman 1991, pp.93–94). A breakdown in intergenerational transmission of the language, is therefore, a key indicator of language loss (Spolsky 2012).

Without intergenerational mother tongue transmission ... no language maintenance is possible. That which is not transmitted cannot be maintained. (Fishman 1991, p.113)

Romaine (2006) calls into question the privileging of intergenerational transmission in Fishman's model and proposes that RLS efforts should be refocused towards language maintenance without intergenerational transmission. Proponents of this view in Ireland who see themselves as “new speakers” of Irish from outside the Gaeltacht, call into question the prestige attached to the varieties spoken by native speakers and suggest that certain “discourses” are denying them “authenticity” and “ownership” of the language (O'Rourke 2011; O'Rourke and Walsh 2015; Nic Fhlannchadha and Hickey 2016).

In cases of language shift, people of older generations will often have a greater command of the language than younger generations and thus regular contact with “significant others” (e.g. a grandparent) (Spolsky 2012) in the home or community can positively affect the intergenerational transmission of language and culture to children and from a sociocultural perspective, scaffold their learning about becoming a member of the community (Kenner *et al.* 2007; Ruby 2012; Chambers 2015).

As language revitalisation efforts need to focus on intergenerational transmission, school interventions should focus on home-family-community functions (Ó Laoire and Harris 2006), but this is often not the case and (Fishman, 2001). Schools that are largely maintained by the minority community can create an environment that privileges the local language and culture and crucially, create greater opportunities for parental involvement in school activities, “thereby creating and strengthening that most elusive and vital of all RLS assets: community” (Fishman 1991, p.101). He is still cautious, though, about how effective schools can be in affecting change as mother tongue transmission will have already occurred in the home before a child starts school. He argues that education's role in RLS:

... is dependent on its ability to connect back with and reinforce the Xish family-home-neighborhood-community nexus in a supportive fashion, while children are still impressionable (Fishman 1991, p.103)

The links across domains are essential in order “... to derive the maximal benefit from their relatively weak resource base and unfavourable resource competitive setting” (Fishman 2001, p.14). Fishman recognises the “the difficulty of planning spontaneity and intimacy” when trying to implement interventions to support language use within the family. Approaches such as the “funds of knowledge” approach (Gonzalez *et al.* 2005) discussed in chapter 3, illustrate how schools in minority communities can draw on the prior knowledge in homes and communities to enrich the learning experiences of children in school.

Many activists, community leaders and researchers currently involved in trying to revitalise minority languages see the potential in digital media technologies to support their efforts (Penfield *et al.* 2006). Edited volumes that have gathered some of this research together include *Technology-enhanced language revitalization* (Penfield *et al.* 2006), *Information technology and indigenous people* (Dyson *et al.* 2007), and *Social media and minority languages: Convergence and the creative industries* (Jones and Uribe-Jongbloed 2013), section IV of *Revitalizing Indigenous Languages* (Reyhner *et al.* 1999), section VII of *The green book of language revitalization in practice* (Hinton and Hale 2001) and section IV of *Indigenous Language Revitalization Encouragement, Guidance & Lessons Learned* (Reyhner and Lockard 2009).

This research discusses a myriad of technologies supporting language revitalisation with the earlier works discussing how common software packages can be used to manipulate text, audio or video or these combined (when ‘multimedia’ and ‘CD-ROMs’ were in vogue). There is also evidence that the potential of the Internet to connect geographically dispersed communities is starting to be realised in this work. Later research discusses Web 2.0 technologies and the convergence culture between traditional media (radio, television and cinema) and social media (blogs, wikis, Facebook, YouTube, Twitter). The latest texts discuss mobile technologies (Apps, GPS, etc.). How ICTs are employed in RLS is dependent on the current vitality of the language and the context in which they are being used (e.g. archiving, education, etc.). This work provides a useful reference for researchers looking to reverse language shift through the use of digital media, and served as a useful reference text in the design phase of this thesis.

### **2.3. Key Past Events in Relation to the Language in the Gaeltacht**

The Irish language has been spoken in Ireland for over 2,000 years and was spoken by the majority of the population until around the middle of the 19<sup>th</sup> century when a variety of factors

accelerated its decline (such as, over 1 million deaths due to the Great Irish Famine, mass emigration and lack of any official support by the then British Government).

Towards the end of the 19<sup>th</sup> century, various movements seeking independence from British rule saw cultural revivalism as a pathway towards independence and the revitalisation of the language having a central role in that process (Ó Riagáin 1997). It is around this time that the term 'Gaeltacht' first began to be used to define a geographical area where Irish was spoken by the local community (Ó hIfearnáin 2009)

One of the core aims of the new State in 1922 was the revitalisation of the language across the country and Irish was confirmed as one of the two official languages of the State (with Irish given priority in legal matters) (Ó Riagáin 1997). Although the maintenance of Irish as a spoken language in the Gaeltacht was part of the new State's aims, very little was done in terms of policy or planning to support this (Ó Riagáin 1997). This was manifest from as early as 1925 when the first Gaeltacht Commission was set up and the State failed to act upon its recommendations (Coimisiún na Gaeltachta 2002). This was to set an unfortunate pattern whereby report after report on saving the Gaeltacht was written over the years with very little done in terms of implementation of broadly similar recommendations. Ó Flatharta found in his review of the education system in the Gaeltacht:

go ndearnadh neamhaird ar fad go minic de na moltaí a mhol an státchóras féin ar chóras oideachais na Gaeltachta agus go háirithe go ndearnadh neamhaird de na moltaí ba thábhachtaí agus ba shubstaintiúla. (Ó Flatharta 2007a, pp.6–7)

There are three main dialects of Irish – Ulster Irish in the North (which would have the most similarities with Scottish Gaelic), Connacht Irish in the West and Munster Irish in the south. The dialects are sufficiently dissimilar that before the launch of Raidió na Gaeltachta (the national Irish-language radio station) in 1972, native speakers would have had difficulty understanding speakers of other dialects (Cotter 2001; Day 2001).

Although Gaeltacht areas, which are primarily on the western seaboard suffered "extensive out-migration, depopulation and deprivation" (Ó Riagáin 1997, p.16), they still maintained a relatively stable core until 1956, after which they illustrated signs of increasing language shift which has accelerated since the early 1970s. The State's focus on reviving Irish as the national language rather than treating it as a minority language and focus on the needs of the remaining speakers of Irish as a community language has been a contributory factor in its decline in the Gaeltacht (Ó Riagáin 1997; Ó Giollagáin *et al.* 2007; Ó hIfearnáin 2009).

It is claimed that Irish as a community language in the Gaeltacht is in its final years with English, the language of the majority in Ireland, also emerging as the lingua franca of global trade, media and

youth culture in the past forty years (Hindley 1990; Ó Giollagáin *et al.* 2007; Ó Béarra 2009). Among the implications cited by Péterváry *et al.* (2014, p.240) of the Gaeltacht disappearing as a linguistic community is “deireadh leis an bhféiniúlacht Ghaelach bheo, le pobal na Gaeltachta agus le hoidhreacht bheo na nGael”, while Ó Béarra (2009, p.271) questions “an Gaeilge í an Ghaeilge feasta d'uireasa na Gaeltachta?”

The key points in the history of the State that have affected the Gaeltacht are outlined in Table 1. This has been compiled from various academic publications and reports (Ó Riagáin 1997; Coimisiún na Gaeltachta 2002; Mac Donnacha *et al.* 2004; Ó Flatharta 2007a; Ó Giollagáin *et al.* 2007; Ó hlfearnáin 2009; Ó Giollagáin 2014a). The table focuses in particular on recent efforts to deal with an impending crisis which it is suggested (Ó Giollagáin 2014a) were mobilised by Hindley's book *The Death of the Irish Language* (1990). This led eventually to the establishment of a 2<sup>nd</sup> Gaeltacht Commission in 2000 (Coimisiún na Gaeltachta 2002). These events are described in more detail in Ó Riagáin (1997), Ó hlfearnáin (2009) and Ó Giollagáin (2014a). The table also highlights how the three authors interpret the State's changing attitude towards the Irish language and Gaeltacht issues by their identification of distinct periods of the State's handling of these affairs. It is beyond the scope of this thesis to delve deeply into each of these events as this thesis is primarily concerned with implementing practical solutions in schools to support Irish as a community language.

**Table 1 - Key events in the State affecting education matters in the Gaeltacht**

Year	Key Events in State's Treatment of the Gaeltacht	Ó Riagáin (1997)	Ó hIfearnáin (2009)	Ó Giollagáin (2014)
1922	Independence, Irish declared the 'national language' and policies to revive the language throughout the country are implemented relating to education (efforts are made to increase the number of schools teaching through Irish), the Gaeltacht, public administration and language standardization	Development of Language Policy (1922 - 1948)	Broadly agrees with Ó Riagáin on 1st 2 periods	Traditional Revivalism (1922 - end of the 60s)
1926	Original Gaeltacht boundaries drawn up by Coimisiún na Gaeltachta ( <i>fíor-Ghaeltacht</i> areas >=80% speakers and <i>breac-Ghaeltacht</i> areas >25% but <80% speakers)			
1926	Establishment of An Gúm for publishing Irish language books			
1926 – 30	Establishment of seven Coláistí Ullmhúcháin across the country to, among other things, ensure future primary school teachers' fluency in Irish			
1934	Establishment of <i>Scéim Labhairt na Gaeilge (SLG)</i> which offered £2 to families for every child in primary school who was fluent in Irish. This gradually increased over the years and its figures provide a useful assessment of the state of the language in a particular locality	Stagnation and Retreat (1948 - 1970)	Broadly agrees with Ó Riagáin on 1st 2 periods	Traditional Revivalism (1922 - end of the 60s)
1950s	Number of immersion (full and partial) schools outside Gaeltacht drops significantly			
1956	State Department of the Gaeltacht established			
1956	Redrawing of the Gaeltacht boundaries implemented directly by the State. New boundaries broadly similar to <i>fíor-Ghaeltacht</i> areas			
1957	Gaeltarra Éireann – industrial development authority for the Gaeltacht established. Rather than halting outward-migration, this industrialisation has contributed over the years to greater language shift through inward migration of an English-speaking skilled workforce			
1958	An Caighdeán Oifigiúil (the official written standard) is published			
1960	Rules amended for recruiting primary teachers - closure of Coláistí Ullmhúcháin			
1963	Publication of report on the Commission on the Restoration of the Irish Language. This suggested that small-hold farming was insufficient for Gaeltacht communities to rely on and recommended the development of both small-scale and larger-scale industry in Gaeltacht areas			
1969	Ceartha sibhialta na Gaeltachta (Gaeltacht Civil Rights movement) is established. Among their actions, they enter a candidate in the General Election and set up a pirate radio station in Ros Muc, Conamara	Benign Neglect (1970 - 1997)	Repositioning of language ideology (1970 - early 90s)	Aspirational Bilingualism (1971 - 1990s)
1972	Raidió na Gaeltachta starts broadcasting			
1973	Foundation of Gaelscoileanna organisation (supporting Irish-medium schools outside the Gaeltacht). The number of Gaelscoileanna has grown from 16 in 1973 to 187 in 2015.			
1975	Committee on Irish Language Attitudes Research (CILAR): one of a number of studies conducted assessing the attitudes of the population at large towards the language. These have been consistently shown a favourable, if somewhat detached attitude by the majority of respondents			
1979	Údarás na Gaeltachta (The Gaeltacht Authority) replaces Gaeltarra Éireann with directly-elected board members			
1990	Publication of <i>The Death of the Irish Language</i> (Hindley, 1990)			
1996	Teilifís na Gaeilge (Irish TV station) established (now TG4)			

1998	Publication of an tAcht Oideachais which places gives responsibilities in relation to language maintenance to educational institutions in the Gaeltacht		Irish as a Minority Language / Cultural Heritage Issue (1990s – 2009)	Minority Survivalism (1990s – 2009)
1999	Establishment of <i>An Chomhairle um Oideachas Gaeltachta &amp; Gaelscolaíochta</i> (COGG) to cater for the needs of Gaelscoileanna and of Gaeltacht schools			
1999	Publication of the Primary Schools' Communicative Syllabus for Irish			
1999	Establishment of <i>Scéim na gCúntóirí Teanga / Language Assistant Scheme</i> . This was set up to support language acquisition by children in Gaeltacht schools. Many schools use this scheme to support L2 children but there is also evidence of support for L1 children in Category A areas (Ní Shéaghdha, 2010)			
2000	Establishment of 2nd <i>Coimisiún na Gaeltachta (Gaeltacht Commission)</i> whose report in 2002 calls on the State to investigate what is happening to the language in the Gaeltacht			
2003	Publication of <i>Acht na dTeangacha Oifigiúla (Official Languages Act)</i>			
2005	Publication of <i>Staid reatha na scoileanna Gaeltachta/A study of Gaeltacht schools</i> (Mac Donnacha et al. 2005)			
2006	Establishment of <i>Eagraíocht na Scoileanna Gaeltachta (Organisation of Gaeltacht Schools)</i> - a Gaeltacht-based organisation set up to highlight the unique status and requirements of Gaeltacht schools and to provide support to those schools			
2007	Publication of <i>Struchtúr Oideachais na Gaeltachta / A Structure for Education in the Gaeltacht</i> (Ó Flatharta 2007)			
2007	Publication of <i>Staidéar Cuimsitheach Teangeolaíoch ar Úsáid na Gaeilge sa Ghaeltacht / Comprehensive Linguistic Study of the Usage of Irish in the Gaeltacht published</i> (Ó Giollagáin et al., 2007)			
2009	Publication of the <i>Fiontar Report advising on the 20-Year Strategy for the Irish Language</i> (Fiontar, 2009)			Rhetorical Bilingualism (2009 - 2014)
2009	Foundation of Guth na Gaeltachta - a pressure group campaigning against proposed major cutbacks in the Gaeltacht			
2010	Publication of <i>Straitéis 20 Bliain don Ghaeilge 2010-2030</i> (Rialtas na hÉireann 2010) purportedly based on Ó Giollagáin et al., (2007) and Fiontar (2009).			
2011	Ending of <i>Scéim Labhairt na Gaeilge (SLG)</i>			
2011	Tuismitheoirí na Gaeltachta established, partly in response to ending of SLG			
2012	Publication of <i>Acht na Gaeltachta</i> (Rialtas na hÉireann 2012). Boundaries to be drawn on linguistic criteria rather than on previous geopolitical criteria. Many Gaeltacht activists highly critical of both 20-year strategy and <i>Acht na Gaeltachta</i> .			
2013	Dissolution of <i>Eagraíocht na Scoileanna Gaeltachta</i>			
2015	Publication of education proposals for the Gaeltacht & consultation with the public			
2015	Publication of the New Primary School Curriculum & Syllabus for Irish			
2016	Publication of <i>Polasaí don Oideachas Gaeltachta</i> (ROS 2016)			

## 2.4. The Current State of the Language in the Gaeltacht

A series of studies documenting the current state of the Gaeltacht (see Table 1) were recommended by the report of the 2<sup>nd</sup> Commission on the Gaeltacht (2002) which itself was seen as a belated response by the Government to Reg Hindley's controversial book *The Death of the Irish Language: A Qualified Obituary* (1990) where Hindley outlined his views on the state of the language which contrasted official figures (census data and figures from *Scéim Labhairt na Gaeilge*) with his own observations of actual language use, made while visiting the official Gaeltachtaí between the 1950s and the 1980s. Despite the criticism that the book received at the time, it is now accepted that his blunt assessment of the state of the Gaeltacht was largely accurate if not overly optimistic (Ó Giollagáin 2014a).

The two principal studies that were commissioned were an assessment of Gaeltacht schools, henceforth referred to as *GS* (Mac Donnacha *et al.* 2004), and the Comprehensive Linguistic Study of the Usage of Irish in the Gaeltacht, henceforth referred to as the *CLS* (Ó Giollagáin *et al.* 2007). Both of these reports categorise electoral districts in Gaeltacht areas into one of three categories based on the number of daily Irish speakers in the school's locality (as per census 2002 figures). The three categories in both reports are broadly similar (Table 2).

	<b>GS</b> (Mac Donnacha <i>et al.</i> 2004)	<b>CLS</b> (Ó Giollagáin <i>et al.</i> 2007)	<b>Number of Electoral Districts</b>
Category A	>=70%	>=67%	24/155
Category B	>=40% but <69%	>=44% but <67%	20/155
Category C	<40%	<44%	111/155

**Table 2 – Categories of Gaeltacht defined according to linguistic criteria**

According to the CLS "Is ionann 67% den phobal a bheith ina gcainteoirí laethúla Gaeilge agus tairseach chinniúnach theangeolaíoch. (*the proportion of active, integrated Irish speakers needs to be maintained above 67% for the use of Irish in a community to be sustainable*)" (Ó Giollagáin 2014a, p.10). Like Hindley (1990), the authors of the CLS analysed census and *Scéim Labhairt na Gaeilge* figures as well as analysing other official documents. They also collected both quantitative (a *language attitudes* survey completed by 965 secondary school students) and qualitative (interviews with Gaeltacht parents, focus groups and public meetings) data.

The principal finding of the CLS is that the Gaeltacht is in a state of crisis. There are only 24 electoral districts in Category A (out of a total of 155). Figure 1 illustrates the geographical spread of

these districts. There are only three areas of the Gaeltacht classified as Category A with the strongest of these in South Conamara, Co. Galway (Hindley 1990). This area stretches from An Spidéal in the east to Carna in the west where 60% of all remaining daily speakers reside (Ó Giollagáin *et al.* 2007).

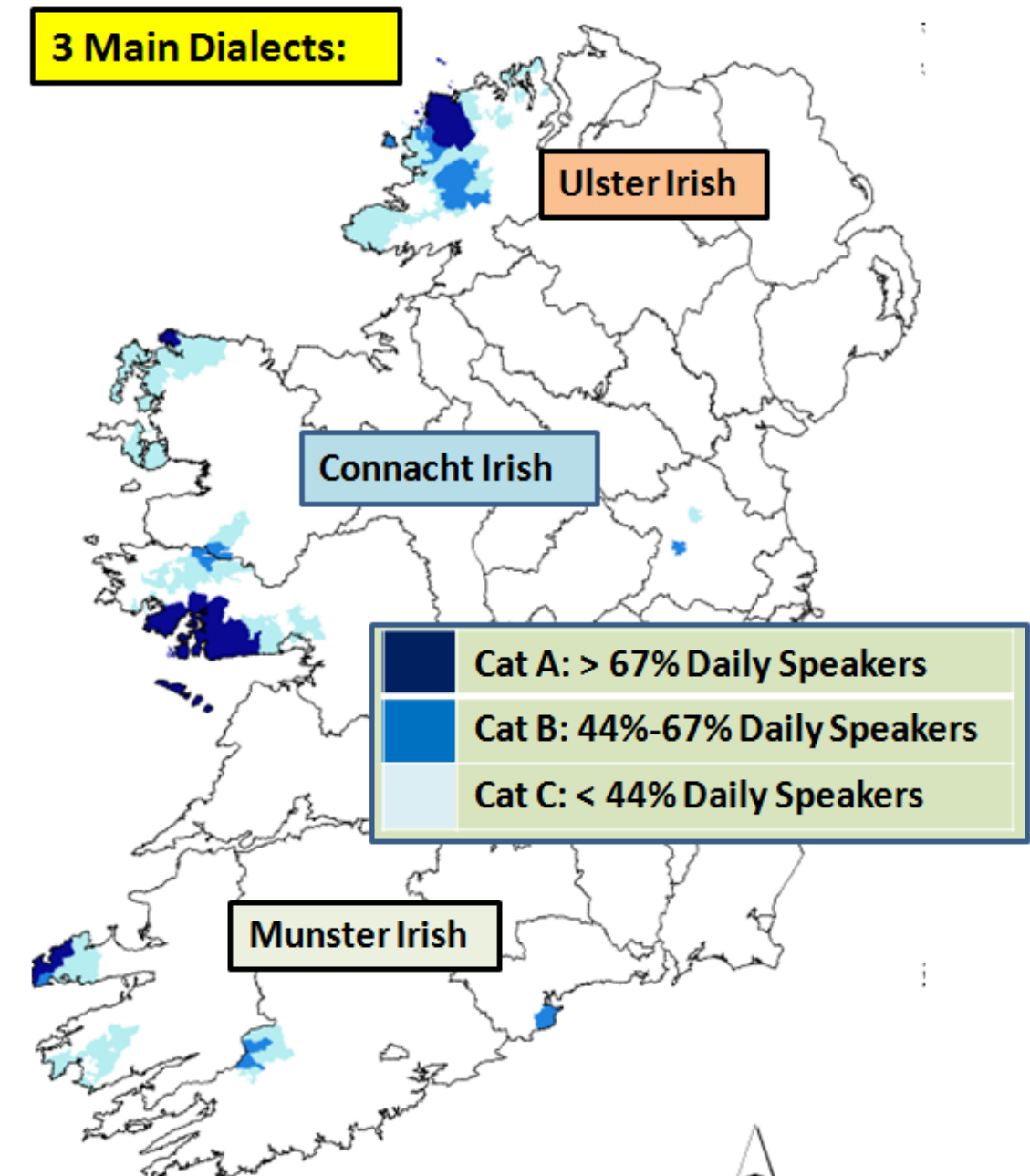


Figure 1 - A colour-coded map of Ireland showing the seven counties in which Gaeltachtaí are located with colours indicating the various categories<sup>2</sup>

<sup>2</sup> Permission to reproduce this image has been granted by the author



Although the number of Irish speakers among the current generation of parents in Category A areas is above the critical 67% threshold, only 53% of children are being brought up through Irish (Ó Giollagáin *et al.* 2007; Ó Giollagáin 2014a). The CLS also finds that even though a majority (60%) of young people in Category A areas still use Irish within family and neighbourhood discourses, their use of Irish within peer groups drops to 41% for primary school children and to 24% for secondary school students. This shows evidence of accelerated language shift among the youngest generation.

A majority of secondary school students in Category A areas who participated in the language attitudes survey reported that they prefer to converse in English with their peers rather than Irish and also that their ability to converse in English was better than in Irish (2007, p.27). Fishman describes this type of phenomenon as ‘Irishness through English’ and suggests that its influences are much stronger on young people in the Gaeltacht than phenomena that foster transmissibility (1991, p.136). Other phenomena cited as affecting language shift include popular culture, mainstream media and new digital media (Ó Curnáin 2009; Péterváry *et al.* 2014).

The CLS explains that:

The increasing marginalisation of the use of Irish within the social networks of the young is driven to a large extent by the dominance of English within the socialisation processes to which young people are exposed in the contemporary Gaeltacht, particularly by the position of English in the Gaeltacht education system and in the media. This in turn has seriously undermined the effective intergenerational transmission of Irish, even in Gaeltacht areas where Irish-speaking networks are most widespread and inclusive, i.e. those districts in Category A (Ó Giollagáin *et al.* 2007, p.27).

The Gaeltacht is now a bilingual society (Ó Giollagáin *et al.* 2007; Péterváry *et al.* 2014). While bilingualism and plurilingualism have been proven to be of great benefit to the individual child, young speakers who have not fully acquired their home language by the time they start school are particularly vulnerable to the phenomenon of “unbalanced bilingualism” and this almost inevitably leads to language shift (Ó Giollagáin 2009; Lenoach 2012; Péterváry *et al.* 2014) - “Is sa chomhthéacs éagothrom idirtheangach seo a thagann sealbhú laghdaithe na mionteanga dúchais chun cinn” (Ó Giollagáin 2012, p.28).

The term “unidirectional bilingualism” is used to describe a process of language socialisation between speakers of minority and majority languages where the “... minority-language speakers are bilingual because their acquisition of the majority language is compulsory and unidirectional. This is because majority-language speakers only acquire bilingual competence as a matter of choice” (Ó Giollagáin 2009).

Sa dátheangachas aontreoch de ghnáth sealbhaíonn lucht na mionteanga an mhórtéanga. Tá an ghlúin Ghaeltachta a rugadh ó na 1990idí ar aghaidh á sóisialú dátheangach ón gclia bhán. Is rímhinic a shealbhaítear an mhórtéanga níos fearr ná an mhionteanga i sealbhú dátheangach comhuaineach mar seo (Ó Curnáin 2012, p.105).

Ó Curnáin (2007, 2009, 2012) has shown that since the 1960s, the level of Irish acquired by each new generation has been a reduced version of that spoken by the preceding generation. A feature of this reduced acquisition is that the richness of the language is being affected and local dialects are starting to disappear (Ó Curnáin 2007). Ó Béarra (2007, 2009) claims that the Irish currently spoken today (which he calls *An Ghaeilge Nua*) would not be understood by a monolingual speaker, such has been the influence of English in the last forty years on syntax, morphology and pronunciation. He goes on to claim that this artificial language influences the subconscious so that new speakers' thoughts are framed by the majority language and culture and that this is exhibited in new forms of an anglicized version of Irish. This is discussed further in the section on the standardization of the written form of the language.

Research on native-speaking secondary school students and their teachers in the Kerry Gaeltacht also suggests that the richness of language in the vernacular is no longer being transmitted to younger generations and that as a consequence they are experiencing difficulties in communicating with their elders:

Léiríodh sa ghrúpa fócais go bhfuil deacrachtaí ag cainteoirí dúchais óga an Ghaeilge atá ag daoine atá níos sine ná iad a thuiscint fiú má tá an Ghaeilge sin ina gcainúint féin agus dírithe ar na réimeanna teanga is bunúsaí.

(Ní Chonchúir 2012, p.128)

This can be illustrated by two students' observations about their respective grandparents:

Neain, an Ghaelainn atá aici tá sé really críonna anois. Cuid de na focail ní thuigfeá in aon chor iad. (F1)

Na seanmháithreacha agus na seanaithreacha bheadh i bhfad níos mó deacrachtaí agat leo [ná leis na tuismitheoirí] mar bheadh seanfhocail nár chualais riamh i dtrácht air nó nathanna cainte is rudaí mar sin. (F2)

(Ní Chonchúir 2012, p.124)

Recent research shows that among home-speaking children in Category A areas of the Gaeltacht, who come from families where both parents are Irish speakers, English has become their stronger language and that "Gaeilge laghdaithe" is the most accurate term to describe their level of

Irish, being much lower than the standard one would expect a monolingual speaker to have (Péterváry *et al.* 2014, p.220). Native speakers are thus experiencing a form of subtractive bilingualism in Gaeltacht schools whereby the learning of the L2 is having a negative impact on the acquisition of their L1. English speakers, on the other hand, are experiencing a form of additive bilingualism whereby they are acquiring the L2 with no adverse impact on their L1. They cite the experience of the native speaker to be an instance of unbalanced bilingualism which they illustrate in Figure 2.

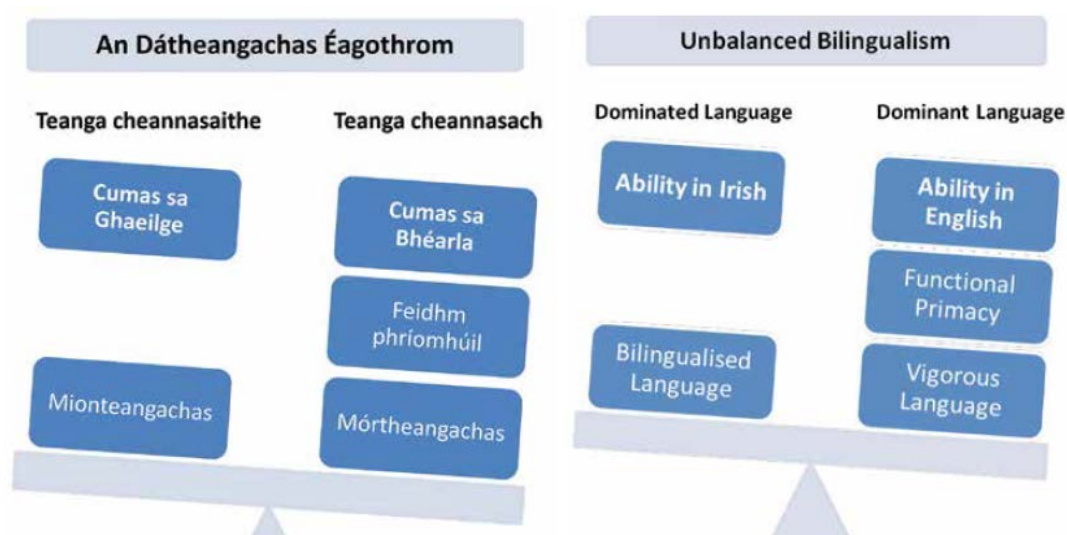


Figure 2 – Unbalanced Bilingualism (from Péterváry *et al.* 2014)<sup>3</sup>

They suggest that this reduced acquisition is due to:

- the acceptance of the dominance of English-language culture
- the continuing erosion of the social density of Irish speakers in traditionally Irish-speaking areas
- changes in the nature of the linguistic inputs the younger generation hear
- changes in the nature of spoken Irish, now influenced by language contact with English
- a contraction of the domains and functions of Irish in its traditional realms
- changes in the opportunities for language input and uptake in acquisition and for communicative outputs in (functional, monolingual) Irish
- the limited capacity of the community support and educational institutions to manage these changes
- the dominance of majority language use in the social practices of the young.

(Péterváry *et al.* 2014, p.225)

The acquisition of children's language cannot occur independently of the sociocultural context in which they live and its successful completion relies on rich input from the surrounding language

<sup>3</sup> Permission to reproduce this image has been granted by the author

community and “... dhá shaibhre an comhthéacs [teangeolaíoch] is fearr” (Ó Curnáin 2009, p.113). Unfortunately, the youngest generation in the Gaeltacht are living now in communities in which this richness has diminished to such a degree that they cannot achieve full acquisition in Irish (Péterváry et al. 2014, p.225). Ó Béarra laments the passing of an older generation who spoke (and still speak) a rich variety of the language:

... nach furasta don Ghaeilgeoir leaganacha nua, ná go deimhin seanleaganacha, a chloisteáil ná a choinneáil ar a chluais ar an ábhar nach gcloistear na leaganacha seo sách minic mar nach bhfuil na cainteoirí ann. (Ó Béarra 2009, p.267)

Ó Giollagáin suggests that the breakdown in the relationship between the home transmission of Irish, a supportive language community and the educational system has caused a “linguistic dysfunction” in the Gaeltacht (Ó Giollagáin 2014b). The CLS concludes that unless the process of language shift can be halted, that their study is documenting “the final stages in the lifecycle of the Gaeltacht as an Irish-speaking community” (Ó Giollagáin *et al.* 2007, p.27). The consequence of this language socialisation is that it is unlikely that many of the next generation of parents will have relationships that developed through the medium of Irish, thus reducing the chance of them bringing up their children through Irish. They further suggest that at the current rate of decline, Irish as a community language is unlikely to continue for more than fifteen to twenty years (this figure has since been revised to ten years based on the analysis of newer census data (Ó Giollagáin and Charlton 2015).

## **2.5. The Education System in the Gaeltacht**

Prior to independence there was little support for the Irish language in the education system. In fact, the primary school education system, which was initiated in 1831, didn't allow for Irish-medium education or the teaching of Irish even in Gaeltacht areas until almost the turn of the century (Ó Flatharta 2007a). It was only through pressure from Conradh na Gaeilge that Irish was gradually allowed to be taught and Irish-medium education was tolerated to support the acquisition of English. Even after the formation of the State in 1922, and the stated aims to restore Irish as the national language, almost half of the schools in the Gaeltacht were still being taught through English in the 1930s (Kelly, 2002 cited in Ó Flatharta 2007).

When Roinn na Gaeltachta/*the Department of the Gaeltacht* was set up in 1956 and the Gaeltacht boundaries redrawn, responsibilities for educational matters in the Gaeltacht remained with An Roinn Oideachais/*the Department of Education*. So, although the new Department had (and still has) responsibilities to preserve the Gaeltacht as a language community, it has had no say in the type of curriculum that would suit the Gaeltacht's unique context, the recruitment of teachers, or any other matters relating to the education of Gaeltacht children (Ó Flatharta 2007a). It is clear at the same time

that Gaeltacht schools have borne much of the burden of keeping the language alive in the Gaeltacht (Hindley 1990).

### 2.5.1. The Linguistic Context of Gaeltacht Schools

There are many complex challenges faced by schools in the Gaeltacht. These will be outlined presently, but it is worth noting again how the State has consistently failed to implement broadly similar recommendations made over many years by numerous reports on how to address these challenges (Ó Flatharta 2007a). The frustration felt both by those who wrote the reports and even more so by those who repeatedly participated in the research within the Gaeltacht education system is summed up succinctly by Mac Donnacha et al:

Tá práinn le feidhm a thabhairt do mholtaí na tuarascála seo. Is mó fós an phráinn de bharr gur beag atá sa tuarascáil seo nár tugadh chun solais roimhe seo i dtuarascálacha eile. Níor tharla mórán mar thoradh ar fhoilsiú na dtuarascálacha sin rud a d'fhág lagmhisneach agus frustrachas ar na múinteoirí a rinne ionchur iontu. Is buille tubaisteach eile do mheanma mhúinteoirí agus thuismitheoirí na Gaeltachta a bheadh ann dá dtarlódh an rud céanna mar thoradh ar fhoilsiú na tuarascála seo.

(Mac Donnacha *et al.* 2004, p.138)

Gaeltacht schools have been defined to date by the State according to geographical location rather than linguistic criteria and have therefore been reliant on the linguistic make up of their surrounding community when determining the language of instruction. The following table from Mac Donnacha et al's report details the distribution of primary schools, households and pupils according to the 3 linguistic categories of Gaeltacht:

Contae	Líon Scoileanna	Líon Teaghlach	Líon Daltaí
Catagóir A	39	1459	2226
Catagóir B	21	744	1320
Catagóir C	69	2740	4544
Iomlán	129	4943	8090

Table 3- Details of Gaeltacht Primary Schools who responded to the language survey (90% response rate). Areas categorised by the number of daily Irish speakers in the school's catchment area [Mac Donnacha *et al.* (2004, p.41)] <sup>4</sup>

Less than one third of the schools are situated in Category A areas (with 39 schools, and 2,226 students in all). Mac Donnacha et al. (2005, p. 71) found that in Category A schools approximately 90% of instruction was primarily through the medium of Irish with this decreasing for Category B and Category C schools (Table 4). This illustrates the importance of the linguistic context of the surrounding area to the policy of the school in relation to the language of instruction.

<sup>4</sup> Permission to reproduce this image has been granted by the author

Rang	Gaeilge amháin nó Gaeilge den chuid is mó			Níos mó Gaeilge ná Béarla			Béarla amháin, Béarla den chuid is mó, níos mó Béarla ná Gaeilge		
	CAT A	CAT B	CAT C	CAT A	CAT B	CAT C	CAT A	CAT B	CAT C
Naíonáin Bheaga	87%	68%	26%	13%	19%	27%	0%	12%	47%
Naíonáin Mhóra	91%	71%	26%	9%	20%	26%	0%	9%	48%
Rang 1	92%	74%	27%	8%	19%	23%	0%	7%	50%
Rang 2	90%	74%	30%	10%	19%	20%	0%	6%	50%
Rang 3	91%	77%	28%	8%	18%	20%	2%	5%	52%
Rang 4	91%	75%	29%	9%	20%	19%	1%	4%	52%
Rang 5	88%	77%	32%	12%	14%	18%	0%	8%	49%
Rang 6	90%	76%	32%	10%	16%	19%	0%	8%	49%

Table 4 - Language of Instruction in Gaeltacht Primary Schools [Reproduced from Mac Donnacha *et al.* (2004, p.71)] <sup>5</sup>

Mirroring dwindling population numbers, the number of children attending primary schools in the Gaeltacht has been steadily decreasing, while up to one quarter of primary and secondary school pupils attending Gaeltacht schools originally come from areas outside the Gaeltacht (Mac Donnacha *et al.* 2004).

Of the 142 schools in the Gaeltacht, 78% these are small 1-4 teacher schools (Eagraíocht na Scoileanna Gaeltachta 2013) which results in several classes being taught together by one teacher in the same classroom (for example, the 2 principal schools in this study had junior infants up to 2<sup>nd</sup> class in one classroom and 3<sup>rd</sup> to 6<sup>th</sup> class in another). Subjects (apart from English) are taught through the medium of Irish in the vast majority of cases in Category A areas but as pupil numbers fall, schools are losing teachers and are threatened with closure and/or amalgamation (Mac Donnacha *et al.* 2004). As this thesis was nearing completion, it was reported that a school in a Category A area of Conamara closed due to unsustainably low numbers (Ó Catháin 2016). The report also suggests that similar prospects are facing other small schools outside a 30km radius of Galway City as people move closer to areas of greater employment.

This has raised concerns that children may be forced to move to schools with different linguistic policies and make up with local organisations calling for the protection of small Gaeltacht schools (Eagraíocht na Scoileanna Gaeltachta 2013; Tuismitheoirí na Gaeltachta 2015). There have been poor outcomes for the language from closure and amalgamations of small Gaeltacht schools in the past (Hindley 1990, p.69). Mac Donnacha *et al.* (2004) have suggested, however, that larger schools would be better able to deal with some of the very difficult language planning issues faced in the Gaeltachtaí and offer recommendations to ensure that schools' policies and practices wouldn't be compromised by amalgamation.

<sup>5</sup> Permission to reproduce this image has been granted by the author

Mac Donnacha et al (2004, p.41) found that in Category A primary schools, where Irish is spoken by more than 70% of the local population, only 54% of children have 'Gaeilge Líofo' or 'Gaeilge Mhaith' on entering primary school (Table 5). This shows evidence of language shift. Having roughly a 50:50 split between L1 and L2 children starting school in Category A areas creates significant challenges for the education system in the Gaeltacht (Mac Donnacha *et al.* 2004; Ó Giollagáin *et al.* 2007; Ní Shéaghda 2010).

Rang	Gaeilge Líofo	Gaeilge Mhaith	Gaeilge Mheasatha	Beagán Gaeilge	Gan aon Ghaeilge
Naíonáin Bheaga	43%	11%	13%	25%	8%
Naíonáin Mhóra	57%	15%	13%	14%	0%
Rang 1	59%	17%	18%	5%	2%
Rang 2	56%	19%	21%	3%	1%
Rang 3	68%	15%	15%	2%	0%
Rang 4	68%	12%	16%	3%	0%
Rang 5	66%	14%	16%	3%	0%
Rang 6	72%	15%	11%	2%	1%
Iomlán	61%	15%	15%	7%	2%

Table 5 - Details of Children's Levels of Fluency in Category A Primary Schools [from Mac Donnacha *et al.* (2004, p.41)]<sup>6</sup>

The figures in Table 5 do show an improvement in fluency levels as the children progress to higher classes, which shows that the education system is helping children with little Irish upon entering it, to be able to function within an Irish-speaking environment. The CLS suggests, however, that the education system in the Gaeltacht is failing to transform these L2 speakers into *active* Irish speakers (Ó Giollagáin *et al.* 2007). They suggest, in fact, that it is having the opposite effect:

the participation of English speakers in the education system in Gaeltacht schools is reinforcing the use of English among young native speakers of Irish. (Ó Giollagáin *et al.* 2007, p.11)

The survey of young people conducted as part of the CLS reported that although the vast majority of young people in Category A areas feel strongly attached to the language, this is not necessarily reflected in their use of the language, particularly among themselves (Ó Giollagáin *et al.* 2007).

### 2.5.2. Challenges faced by Gaeltacht schools

Although the 1999 primary school curriculum (Rialtas na hÉireann 1999) which brought in a communicative syllabus for Irish did offer two strands based on a school's medium of teaching (T1 for where this is Irish and T2 where this is English), this did not satisfy Gaeltacht communities who felt that the focus of T1 schools was primarily Gaelscoileanna where children are primarily native speakers of English (Ó Béarra 2009). Gaeltacht schools and their unique linguistic context are mentioned in the

<sup>6</sup> Permission to reproduce this image has been granted by the author

syllabus and teachers are encouraged to stretch the language abilities of their pupils by using challenging content following the communicative approach but the challenging linguistic contexts in which teachers find themselves in the Gaeltacht are not recognised (Ní Shéaghadha 2010). These issues prompted Ó Béarra to call for the building of an entirely new education system for the Gaeltacht:

Ní mór atheagar ó bhonn a dhéanamh ar an mbunscolaíocht Ghaeltachta agus í a dheighilt ón nGaelscolaíocht ar an ábhar nach ionann an dá bheithíoch ar chor ar bith. Ní mór curaclam ar leith a cheapadh a fheilfeas don Ghaeltacht, curaclam a chruthós mórtas as a dteanga féin, as teanga an fhocail dár díobh iad, i measc óige na Gaeltachta. Drochmheas atá ag óige na Gaeltachta fós ar a dteanga féin.

(Ó Béarra 2009, p.270)

It seems, that in its pursuit of the revival of Irish nationally, educational policies were focused almost entirely on the teaching of Irish as a second language (L2) leading to a complete absence of policies relating to language maintenance in the Gaeltacht (Ó Flatharta 2007a). This has limited the level of Irish that children raised through Irish can expect to attain through the education system (Mac Donnacha *et al.* 2004, Ó Giollagáin *et al.* 2007). Ó Giollagáin highlights these shortcomings in a damning indictment:

The national curriculum is taught in all these options, and therefore linguistic attainment in Gaeltacht schools is pitched at levels commensurate with L2 acquisition of Irish rather than native-speaking abilities. To be brutally honest, there is no such thing as a Gaeltacht educational system.

(Ó Giollagáin 2014a, pp.37–38)

It was only through the enactment of The Education Act of 1998 (Rialtas na hÉireann 1998), which specifies for the first time a statutory framework for the entire Irish Education system, that the unique context in the Gaeltacht received some degree of recognition. The Act states that schools in the Gaeltacht have responsibilities in relation to both educational and language planning issues. In relation to the former, the Act states that the State has a responsibility:

Cuirfidh scoil aitheanta oideachas ar fáil do mhic léinn ar oideachas é is cuí dá gcumas agus dá riachtanais agus, gan dochar do ghinearáltacht an mhéid sin roimhe seo, úsáidfidh sí na hacmhainní a bheidh ar fáil di (Rialtas na hÉireann 1998, sec.9)<sup>7</sup>

The research discussed in the early part of this chapter suggests that the State has been remiss to date in fulfilling this responsibility in support of home speakers of Irish.

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<sup>7</sup> “as far as is practicable and having regard to the resources available, there is made available to people resident in the State a level and quality of education appropriate to meeting the needs and abilities of those people”



In relation to the latter, the Act states that those responsible for implementing the act shall "cuidiú leis an nGaeilge a choinneáil mar phríomhtheanga an phobail i limistéir Gaeltachta"<sup>8</sup> (Rialtas na hÉireann 1998, sec.6 (j))

The Act also states that all schools have responsibilities "chun forbairt na Gaeilge agus thraidisiúin na hÉireann, litríocht na hÉireann, na healaíona agus nithe cultúrtha eile, a chur chun cinn." (Rialtas na hÉireann 1998, sec.9 (f)) and that "i gcás scoileanna atá lonnaithe i limistéar Gaeltachta, chun cuidiú leis an nGaeilge a choinneáil mar phríomhtheanga an phobail,"<sup>9</sup> (Rialtas na hÉireann 1998, sec.9 (h)). The statutory responsibilities of schools to promote the use of Irish in their wider language communities was also underlined in Straitéis 20 Bliain don Ghaeilge (Rialtas na hÉireann 2010) and the school's role in the language planning process was highlighted in Acht na Gaeltachta (2012).

Following the publication of the Education Act (Rialtas na hÉireann 1998), An Chomhairle um Oideachas Gaeltachta & Gaelscolaíochta (COGG) was set up in 2002 under Provision 31 of the Act, thanks to a campaign led by Comhdháil Náisiúnta na Gaeilge, Gaelscoileanna and Eagraíocht na Scoileanna Gaeltachta. COGG functions as an advisory body to support both Gaeltacht and all-Irish schools as well as having functions in relation to the teaching of Irish as a subject in all schools (COGG 2016). COGG has 3 primary responsibilities: supplying resources, providing support services and research (for example, this piece of research has been funded by COGG). The board of COGG is made up of parents, teachers, civil servants and other experts (COGG 2016). The value of the work done and commissioned by COGG to both Irish-speaking and Gaeltacht schools has been acknowledged many times (Mac Donnacha *et al.* 2004; Ó Flatharta 2007a; Ní Shéaghdha 2010; Gaelscoileanna Teo. 2013a) but it can only function in an advisory capacity in relation to policy changes and curricular development.

Recent reports reflect the concern that Gaeltacht schools cannot fulfil their statutory responsibilities, as set out in legislation, in relation to the provision of an appropriate education to Gaeltacht children and their language planning responsibilities in the community in the absence of support, advice or resources from the State (Mac Donnacha *et al.* 2004; Ní Shéaghdha 2010; Eagraíocht na Scoileanna Gaeltachta 2013). In spite of the lack of support, Mac Donnacha *et al.* (2004) report that Gaeltacht schools have been doing their best to fulfil their statutory responsibilities and that the use of the language in the community would be far weaker but for their efforts in this regard. They warn, however, that 14% of children finishing primary school have neither fluent nor good Irish. Ní Shéaghdha (2010) found that there are now less than one thousand children attending primary school in Category A areas of the Gaeltacht whose first language is Irish. Of greater concern is the fact that

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<sup>8</sup> "contribute to the maintenance of Irish as the primary community language in Gaeltacht areas"

<sup>9</sup> "in the case of schools located in a Gaeltacht area, contribute to the maintenance of Irish as the primary community language"

English is the primary language of socialisation outside of the classroom (Mac Donnacha *et al.* 2004, Ó Giollagáin *et al.* 2007). Mac Donnacha *et al.* (2004) report that in the light of such a challenging situation, a significant number of Gaeltacht schools have already switched to teaching through the medium of English in weaker Gaeltacht areas and that this trend is likely to continue unless appropriate support is forthcoming.

Teachers in the Gaeltacht need to be aware of the unique sociolinguistic context in which they are teaching but teacher training courses fail to prepare teachers for this, tending to focus only on the requirements of teaching Irish as a second language and ignoring the unique characteristics of schools in Gaeltacht communities, particularly those in strong Gaeltacht areas (Mac Donnacha *et al.* 2004; Mac Donnacha 2005; Ní Ghallachair 2008) – “the particular needs of native speakers of Irish, whether in the Gaeltacht or outside, are addressed neither by teacher education nor the curriculum” (Ní Ghallachair 2008, p.198). Mac Donnacha *et al.* (2004) recommend the introduction of specialist courses of study for Irish-medium teachers, run through Irish in an Irish-speaking environment, to address these unique requirements.

Mac Donnacha *et al.* (2004) report that many Gaeltacht schools are struggling to fill vacant posts. Without proper guidance on language planning and maintenance in such a complex environment, it is perhaps unsurprising that schools are struggling – struggling to fill posts but also struggling to meet the language development needs of all their learners.

Ní Shéaghdha (2010) conducted an important piece of research which examines practices supporting language enrichment/acquisition for L1 speakers of Irish in Category A primary schools. In it she outlines the complex work environment in which a teacher in a typical small Category A Gaeltacht has to work – finding herself trying to divide her time between several classes in a room where 30% - 60% of the children are native speakers and the remainder are learning Irish as a second language in the context of a curriculum that only properly supports and resources the teaching of Irish as L2. She criticises the lack of guidance provided for Gaeltacht schools in the curriculum in relation to immersion education and in relation to literacy in the Irish language syllabus.

Cé go n-aithníonn an curaclam bunscoile cainteoirí dúchais Gaeilge níl cuspóirí foghlama ar leithligh leagtha amach chun tacú lena saibhriú teanga (sealbhuí/forbairt a gcéad teanga).

(Ní Shéaghdha 2010, p.5)

She highlights the fact that while certain practices have been established to support children with little or no Irish, no support structures have been provided to support native speakers develop and enrich their language as they progress through school. It is claimed that the system assists in the

deterioration of L1 speakers' Irish through their socialisation with learners in school (Mac Donnacha *et al.* 2004; Ó Giollagáin *et al.* 2007; Ní Shéaghadha 2010).

None of the schools who participated in Ní Shéaghadha's survey had language plans that made reference to the different needs of L1 and L2 speakers of Irish, although several implemented practices that differentiated between both groups – e.g. running separate enrichment sessions with the *Cúntóir Teanga* (2010). The majority of principals stated that their greatest challenge is to bring those children who have little Irish on entering the school up to a standard whereby the school can function as an all-Irish school which means that the school has no choice but to teach Irish as an L2 (*ibid*, pp.28-29). Only three of the schools surveyed implemented any form of differentiation on linguistic grounds. In these cases native speakers would be put in groups to work together on resources aimed at language enrichment and sometimes with the school's *cúntóir teanga*. Other schools reported that these kinds of strategy would be impractical due to the number of groups already in the one classroom (*ibid*).

### **2.5.3. Challenges faced by Gaeltacht parents**

Parents of Irish-speaking children have also expressed concern that their children's Irish wasn't developing as they expected once they entered the education system (Mac Donnacha 2005; Ó Giollagáin *et al.* 2007) confirming Ó Giollagáin *et al.*'s claim that "... Irish-speaking children are not evidencing the full range of linguistic competencies expected of native speakers" (2007, p.15). Nic Cionnaith (2012), in her research on parents who are raising their children through Irish in the Conamara Gaeltacht, also reports similar results. Fourteen out of eighteen of the parents who participated in her focus groups felt that the standard of their children's Irish had diminished since starting school. They were highly critical of a system which they saw as providing extra resources for improving L2 speakers' Irish while at the same time allowing "... do Ghaeilge na bpáistí atá tógtha le Gaeilge sa mbaile a fháil níos laige." (2012, p.155). They also raised concerns relating to the standard of some of the teachers' Irish and speculated whether this was contributing to the deterioration in their children's Irish that they had observed at home.

Some parents in Nic Cionnaith's study reported seeing the children work on homework where the textbook would be covered in Tippex and the teacher having written equivalent phrases using "Gaeilge cheart" – the vernacular that the children and their parents could understand better. Parents with children in a different school reported having to buy the English version of textbooks as they didn't understand the variant of Irish being used in them.

#### 2.5.4. The Effect of Standardisation on Language Shift

The standardised form of a language which is associated with official publications, is often seen as having a greater prestige than local dialects (Ní Ghearáin 2012). The *Caighdeán Oifigiúil* (Rannóg an Aistriúcháin 1958) was developed to standardise written Irish (Ó hIfearnáin 2008; Ní Ghearáin 2012). Several guiding principles were used during the devising of *An Caighdeán Oifigiúil* one of which was that the living language (*caint na ndaoine*) in the Gaeltacht regions should be utilised when possible (Ó Murchadha 2013). It is claimed, however, that the principles relating to Irish literature took precedence in its development and that the dialects were sidelined resulting in a much more complicated standard than was necessary (Williams 2006; Ó Béarra 2009; Ó Murchadha 2013).

*An Caighdeán Oifigiúil* was intended for official State publications but it was also adopted by The Department of Education which meant that practically all educational texts were written using an *Caighdeán Oifigiúil* (Ó hIfearnáin 2008). A tension has emerged between Gaeltacht children's vernacular and the official language of the school (Ó hIfearnáin 2008). This has also seen a variety of the language emerge that is spoken primarily by native English speakers who do not live in the Gaeltacht (Cotter 2001, p.303). Hindley (1990) claims that the *Caighdeán* also had a detrimental effect on older generations in the 1950s. They found the spelling reforms (as well as the decision to abandon the Gaelic script in printed material) confusing with difficulties with spelling continuing to the present day. He claims that standardization has led to the alienation of native speakers from 'state Irish'. (1990, p.217). Fishman asserts that "it doesn't pay to force a written standard, much less a spoken one, on an adamantly unwilling or seriously ailing speech community" (1991, p.345).

Gee, notes that literacy has been used across the world,

... in age after age, to solidify the social hierarchy, empower elites, and ensure that people lower on the hierarchy accept the values, norms, and beliefs of the elites, even when it is not in their self-interest or group interest to do so. (Gee 2008, p.61)

He suggests that this divide is evident today between those who control the dominant narratives in society relating to "knowledge, ideas, culture, and values" (2008, p.62) and those who do not. He cites Freire's work as offering an alternative view of literacy – a bottom-up view in which literacy is used in an emancipatory fashion to liberate the marginalised from the dominant classes. It is through understanding the nature of social oppression that 'transformative cultural action' can occur (Lankshear and Knobel 2011, pp.5–6).

While the *Caighdeán* has been effective in developing a written standard of Irish (Ó Murchadha 2013), the conflict between it and the local vernacular has resulted in a tension between both producers and consumers of written versions of the language. This tension extends to the variety of Irish spoken

by learners which attracts derogatory labels such as *Gaeilge na Leabhar*, *Gaeilge Bhaile Átha Cliath*, *Gaeilge na Scoile*, *Gaelscoilis* and *Gaeilge Chaighdeánach* (Walsh 2007; Ó hIfearnáin and Ó Murchadha 2011; Ní Chonchúir 2012; Ó Murchadha 2013; Nic Fhlannchadha and Hickey 2016).

While the Gaeltacht dialects have long been seen as the prestige spoken targets for learners (Cotter 2001, p.303), the promotion of *An Caighdeán* as a prestige written form has contributed to the decline of the local vernacular (Ó hIfearnáin 2008, pp.124–125). This may also create confusion among learners:

In a minoritised language community, equivocal target norms may breed uncertainty in relation to the spoken and written targets that speakers ought to aspire to. (Ó Murchadha 2016, p.208)

Ó Murchadha suggests that there is evidence of a lack of clarity emerging regarding target varieties of spoken Irish. He also suggests that this, coupled with the Gaeltacht dialects' disconnect from *An Caighdeán*, can lead to native speaker insecurity relating to the prestige of their vernacular which is "... detrimental to the vitality of traditional Gaeltacht speech" and which could lead to language shift (Ó Murchadha 2016, p.208). His earlier research on a group of young people in the *Múscraí Gaeltacht* suggests that their vernacular is indeed moving towards a more standardized form and away from the local vernacular<sup>10</sup>, which ironically, they still view as the target variety (2013, p.188).

Hale claims that Gaeltacht-based initiatives such as *Raidió na Gaeltachta*, which emerged from the protests by local activists in the Gaeltacht, "promotes traditional Irish linguistic norms" in the three main dialects while at the same time "promoting cross-dialect comprehension and consequently a measure of linguistic unity, through the familiarity which daily broadcasts inevitably bring about." (Hale 2001, p.300). It has at the same time introduced modern terms into local dialects through news and current affairs programming (Cotter 2001). It has also achieved "inter-dialect unity" which results in a "sense of the importance of one's own dialect, and of the language overall" (Cotter 2001, p.305). This has the potential to act as a counterbalance to the effect of standardisation on the erosion of Gaeltacht dialects.

The role of *An Caighdeán Oifigiúil* in the further marginalisation of Gaeltacht speakers in the education system is yet another example of the State's role in the erosion of the Gaeltacht. Gaeltacht communities' response to this neglect has resulted in some bottom-up local initiatives to support schools. These are typically funded on an ad hoc basis by the State department partially (formerly fully) responsible for Gaeltacht affairs. These are described in the following section.

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<sup>10</sup> Ó Curnáin (2007, 2009) reported similar findings in Conamara

### 2.5.5. Language revitalisation from the bottom up

Ó Laoire (2000, p.65) suggests that the Irish State's indifference in relation to language planning may have been unintentional "occurring in the context of ignorance of what language planning involved" and that there may be opportunities for more language planning from the bottom up if the State has indeed decided to disengage from the process. Many language revitalisation efforts have been ineffective due to the complexities involved in trying to implement a centrally-formulated policy at the local level (Fishman 2001; Hermes and King 2013; Hermes *et al.* 2016).

Efforts closer to stage 6 are more nearly under Xish community control and, therefore, do not depend crucially on Yish support, funding, cooperation, or permission

(Fishman 2004, p.428)

A 21<sup>st</sup> century view of language policy development, or micro-level language planning (Baldauf Jr 2006) is needed, that involves a shift from reliance on central agencies to a local view of developing language policies which "draw their force and movement from the lives of real people" (Ó Laoire 2012, p. 141). If individuals, families and local organisations in minority communities faced with language shift take control of language planning, they can develop language policies that address their own unique requirements utilising local language resources (Baldauf Jr 2006; Hermes and King 2013), thus increasing the chances of successful interventions in language revitalisation research (Ó Laoire 2012).

This is currently happening across Gaeltacht regions in response to Acht na Gaeltachta (2012) which has specified that Gaeltacht areas must apply for their status to be retained through a language planning process. In relation to education, the Act states that language planning areas should have "the availability of education through Irish" (Rialtas na hÉireann 2012) but neither is this specified as being mandatory nor is the nature of the type of education specified.

Teachers are key agents in developing language policies at the micro level (Hornberger and King 1996). An example of this is the Waikato-Tainui Program in New Zealand which established a new school that implements a Maori-language immersion programme. In the early years, the programme delivered the State curriculum in the Maori language but educational reform in 2002 enabled the local community "to integrate Waikato-Tainui knowledge, histories, and ways of life" into a new curriculum (Harrison 2005, p.57). The programme encourages an active learning approach. Students, for example, conduct research into local history, geography and folklore and examine the differences between local tribes and the different dialects spoken by them (Harrison 2005).

Many language programmes for indigenous people involve children being taught their own language by native-speaking elders who may be fluent or semi-fluent in the language. Pre-school

examples of this include “language nests” run by people of Maori, Samoan, Hawaiian, Mohawk and Sami descent (Warschauer 1999; Chambers 2015). These are early years immersion programmes in indigenous languages and cultures which non-native speaking children of pre-school age attend to receive instruction and mentoring from indigenous elders.

Local organisations in the Gaeltacht along with Gaeltacht schools have long been attempting to formulate local solutions to support language enrichment and acquisition for children whose first language is Irish (Mac Donnacha *et al.* 2004; Ní Shéaghdha 2010). These include the work of organisations such as Muintearas who produce educational resources for schools in the Gaeltacht and administer Scéim na gCúntóirí Teanga in Galway and Donegal (Muintearas 2016) and Oidhreacht Chorca Dhuibhne who fulfil a similar role in the Kerry Gaeltacht (Oidhreacht Chorca Dhuibhne 2016). The problem with a bottom-up approach is that the funding for these (often originally voluntary) organisations or schemes is subject to approval on a regular (usually annual) basis and the threat of funding cuts or closure is a constant concern.

One of the most important schemes, Scéim na gCúntóirí teanga (see Section 2.5.6), is subject to annual review and funding is only approved at the start of each school year. News that it would be receiving a reduction in funding for 2016 was only announced in late September leaving schools and the cúntóirí themselves unable to start the scheme in time for the start of the school year (tuairisc.ie 2016).

Eagraíocht na Scoileanna Gaeltachta was a Gaeltacht-based organisation set up to support Gaeltacht schools "go mbeidh buanú na Gaeilge sa Ghaeltacht mar thoradh ar a gcuid gníomhaíochtaí oideachais" (Eagraíocht na Scoileanna Gaeltachta 2013, p.3). It played an important role in co-ordinating and campaigning for the rights of Gaeltacht children and in trying to get proper State support for a Gaeltacht education system. It developed a language policy template which has been adopted by many Gaeltacht schools (ESG 2013) but its annual funding was refused for 2014 which forced it to dissolve at the end of 2013 (Gaelscoileanna Teo. 2013b).

Funding for Irish language organisations both within and outside the Gaeltacht was severely cut in the wake of the economic downturn which hit in 2008. These cutbacks have seen the cancellation of Scéim Labhairt na Gaeilge (Ó Bróithe 2012), funding removed from bodies such as Comhdháil Náisiúnta na Gaeilge, Eagraíocht na Scoileanna Gaeltachta and even the threat to close COGG (Gaelscoileanna Teo. 2009). The Irish Language Commissioner, Seán Ó Curreáin, resigned in protest over the inaction of the State to protect the rights of Irish speakers (Ó Giollagáin 2014a). Organisations such as Guth na Gaeltachta, a pressure-group based in several regions of the Gaeltacht campaigning for civil rights and Tuismitheoirí na Gaeltachta, a support group for parents in the Gaeltacht who are bringing their children up through Irish, were set up in response to State inaction on Gaeltacht matters. One member of Guth

na Gaeltachta was threatened with dismissal from his job as a gardener in a National Park over his criticism of Acht na Gaeltachta's weak support for the language in the Gaeltacht (gaelport.com 2012). All of these issues led to public meetings and local protests culminating in over 10,000 language activists from Gaeltacht areas and elsewhere gathering in Dublin in 2014 (Figure 3) to demand rights for Irish speakers (Ó Caollaí 2014).



Figure 3 - Protests against severe cutbacks in the Gaeltacht and on Language Issues [reproduced from ansionnachfionn.com]<sup>11</sup>

Tuismitheoirí na Gaeltachta, whose motto is very simply "Is muid an chéad ghlúin eile / *We are the next generation*" (Tuismitheoirí na Gaeltachta 2015) were set up to try to influence the language practices of young people by organising events for them offering opportunities to socialise with other Irish speakers of their own age and through awareness campaigns for parents based on sound language planning principles (Tuismitheoirí na Gaeltachta 2015). They made a submission to the Joint Committee on Educational Matters in 2015, in which they outlined their demands as parents of Irish-speaking children in the Gaeltacht. The demands most relevant to this research are outlined here:

- Recognition from the Department of Education that native-speakers exist and that they have unique requirements
- That the Department of Education implement policies to support and protect Gaeltacht schools which includes a requirement to focus on language practices and language enrichment in all aspects of the school day (formal, informal and social)
- A curriculum that can serve the needs of the native speaker and focus on language development in the higher registers in an enjoyable manner
- The supply of suitable learning resources, including digital resources

<sup>11</sup> Permission to reproduce this image has been granted by the author



- The development of a system to support the teaching of correct pronunciation with associated learning resources
- That small Gaeltacht schools be protected

(Tuismitheoirí na Gaeltachta 2015)

Ní Shéaghdha's (2010) research on how schools in Category A areas of the Gaeltacht are trying to support language enrichment, socialisation and acquisition is one of the only pieces of research to discuss solutions to some of the challenges faced on a day to day basis by Gaeltacht schools. She defines the following factors as being critical language planning measures to support native-speaking children in Gaeltacht schools:

- saibhriú teanga: cur leis an nGaeilge atá ag leanaí arb í an Ghaeilge a gcéad teanga trí bheartais saibhrithe teanga a chur i gcrích;
- sealbhú teanga: an treisiú nó an fhorbairt nádúrtha teanga a thagann ar theanga an dalta trí leaganacha saibhre den teanga a chur os a gcomhair;
- sóisialú teanga: iompar teanga na scoile, go príomha iompar teanga na ndaltaí ina measc féin, a bhainistiú chun go mbeadh an Ghaeilge in uachtar mar theanga shóisialta chumarsáide na scoile.

(Ní Shéaghdha 2010, p.5)

She also identifies the following six strategies that have been devised by Gaeltacht teachers on an ad hoc basis and that are currently in use in some Category A Gaeltacht schools to deal with these issues:

1. Effective communication and collaboration with parents/the local community in relation to the school's language policy and its role in preserving the Gaeltacht
2. Ensure regular group work is conducted where native speakers are grouped together
3. Continual attention paid to accuracy / enrichment of the pupils language
4. Organise activities that place emphasis on the oral language – drama & storytelling, puppetry, and involve members of the local community with rich folklore backgrounds
5. The school's policy in relation to literacy should encourage equality between both languages
6. Run campaigns to promote use of Irish among the pupils<sup>12</sup>

(Ní Shéaghdha 2010, pp.43–49)

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<sup>12</sup> Researcher's translation

This research suggests that if the remaining speakers of Irish in Gaeltacht areas are to develop or enrich their language, they need access to suitable resources (in their vernacular at a level that enables language development).

#### **2.5.6. Learning Resources and Support for Native Speaking Children**

The first Coimisiún na Gaeltachta (1926) reported that the supply of textbooks and other resources were wholly unsatisfactory to native-speaking children (of whom there were many more in 1926):

Furthermore in the latter case the child is instructed by means of unsuitable books, and with school equipment which has not pertinence to his language, with the result that in the child's mind his own language is given the brand of inferiority.

(Coimisiún na Gaeltachta 1926, p.11)

Analysis of this and other many reports commissioned by the State and other bodies relating to education in the Gaeltacht shows that a lack of suitable resources for children in the Gaeltacht has never been properly addressed (Ó Flatharta 2007a). This was also the finding of Mac Donnacha et al.'s *Staidéar ar na Scoileanna Gaeltachta* (2005a) and the associated report on principals', teachers' and parents' views (2005b).

Gaeltacht schools do not have access to an adequate provision of Irish-medium teaching resources at either primary or second level

(Mac Donnacha *et al.* 2004, p.16)

Hindley cites teachers repeatedly mentioning the difficulties that standardized textbooks using new terminology create whereby native speaking children "feel their Irish is inferior and not even school books are written in it; and this, as they dislike 'Dublin-Irish' or 'New Irish', helps destroy their traditional attachment to the language and gives impetus to their preference for English." (Hindley 1990, p.205). This has forced each generation of Gaeltacht teachers to develop their own resources to support their unique classroom contexts (Nic Cionnaith 2012).

While the textbooks in subjects like science have been criticised as being too difficult, many of the resources being used to develop literacy in primary schools have been criticised as being too simple to develop the language of native speakers (Nic Cionnaith 2012). The recent case study report by the inspectorate on Gaeltacht schools also reported on resources not being sufficiently challenging for native speakers (ROS 2015b). The consensus among parents in Nic Cionnaith's study was that the resources supporting the Irish primary curriculum were aimed at L2 children and that there was nothing available at a level similar to the types of text being used in the English curriculum. This was summed

up by the observation of one parent - “Má leagann tú [an leabhar Gaeilge] agus [an leabhar Béarla] in aice le chéile, tá an cumas Béarla atá ag teastáil uait i bhfad níos casta ná na rudaí beaga simplí seo atá scríofa [sna leabhair Ghaeilge]” (Nic Cionnaith 2012, p.159).

Mac Donnacha et al. (2004) suggest that the provision of extra Irish-medium teaching resources alone will not solve many of the problems outlined above. They suggest that resources must be at a level that matches levels of competency in the various categories of schools. The tension between the vernacular and the standardised written language has also created difficulties for children as discussed previously.

A key bottom-up language planning effort in the Gaeltacht is Scéim na gCúntóirí Teanga (Oidhreacht Chorca Dhuibhne and Muintearas n.d.; Ó Flatharta 2007b). The scheme was originally set up in 1992 to support L2 children improve their Irish by working with local speakers in Gaeltacht schools (Oidhreacht Chorca Dhuibhne 2016). Feedback from parents, schools and the local community has been very positive to date (Ó Flatharta 2007a; ROS 2015b). Some schools in Category A areas have also started using the scheme in recent years to enrich the Irish of L1 speakers (Ní Shéaghdha 2010; Oidhreacht Chorca Dhuibhne 2016).

Deineadh forbairt ar an scéim le blianta beaga anuas mar go bhfacathas go raibh gá ag leanaí a bhí á dtógaint le Gaelainn le tacaíocht bhreise maidir le saibhriú teangan. (Oidhreacht Chorca Dhuibhne 2016)

Although the scheme is not clear on how the cúntóir should be employed (ROS 2015b), Oidhreacht Chorca Dhuibhne have produced “lámhleabhar an chúntóra” to try to clarify best practice for schools. The mission statement of the scheme is “An Ghaeilge a sheachadadh go dtí an chéad ghlúin eile – go cruinn, saibhir agus go mbeidh na canúintí áitiúla láidir ins gach Gaeltacht” and proclaims the following aims for the scheme:

- Saibhriú teanga a sholáthar don leanbh atá á thógaint le Gaeilge – tábhacht na canúna.
- An Ghaeilge a laidriú mar theanga labhartha i measc leanaí scoile na Gaeltachta
- Cabhrú le leanaí feidhmiú gan stró sa chóras oideachais Gaeltachta

(Oidhreacht Chorca Dhuibhne and Muintearas n.d., p.3).

The scheme ensures that cúntóirí are rich in the local vernacular and has published a handbook for cúntóirí that is consistent with the objectives of the communicative curriculum (Oidhreacht Chorca Dhuibhne and Muintearas n.d.). The handbook contains sample idioms, riddles, tongue twisters as well as suggestions worksheets for children to note examples of richness of language.

Séideán Sí is the collective name for a set of resources that were commissioned by COGG to support the new communicative primary curriculum for Irish. It comprises books, audio CDs, teacher

guides and other resources (games, posters, etc.) and was the first set of resources designed specifically for all-Irish and Gaeltacht schools. It offers resources in each of the three main dialects. Surveys conducted by COGG in 2005 and 2008 show that 90% of Gaeltacht schools and 95% of Gaelscoileanna were using the resources and that teachers surveyed were generally happy with them (COGG 2005; Ó Duibhir 2009). Ní Shéaghdha's research on Gaeltacht schools reported similar findings with many teachers praising it as an excellent resource for language enrichment, but that it was difficult to implement in the type of multi-class environment found in many Gaeltacht schools and also that it doesn't address the complexity of teaching Irish simultaneously as an L1 and an L2 in one classroom (Ní Shéaghdha 2010). The recent case study report by the inspectorate on Gaeltacht schools (ROS 2015b) also reported positive feedback in relation to the programme, however some schools stated that the resources were not sufficiently challenging to native speakers and that they had to source supplementary materials to satisfy their requirements. A web version of the project was published online in 2015<sup>13</sup>.

A recent initiative by COGG was the development of their iTunesU channel which also enabled them to make digital resources that they had commissioned available online (COGG 2014). Part of this initiative was a collaboration with Acadamh na hOllscolaíochta Gaeilge in the National University of Ireland Galway which involved the sourcing of over four hundred rich audio clips from the RTÉ Raidió na Gaeltachta Archive (AOG 2013). These clips were carefully chosen by a panel of Gaeltacht teachers, and are aimed at developing children's language in their own dialect. A set of pedagogical guidelines was developed to accompany the clips. These adhere to structures outlined in the 1999 curriculum for developing aural and oral language (Rialtas na hÉireann 1999). The researcher was intimately involved in the development of this project and the clips provided the basis for the initial set of resources used in this research project. Further details relating to this project are given in chapter five.

A common thread with each of these initiatives is that they were commissioned by bodies other than the Department of Education and the funding to support this work and these organisations appears to happen on an ad hoc basis and without a coherent or overarching strategy from the State.

## **2.6. Raidió na Gaeltachta, Digital Media and Language Revitalisation**

Having endured a prolonged period of domination for several hundred years that left minority cultures and their languages "ethnically crippled", many of the remaining members of these cultures gathered a second wind in the latter half of the twentieth century as human rights movements across the world set about agitating against dominant cultures (Dołowy-Rybińska 2013). It was in this context

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<sup>13</sup> [www.seideansi.ie](http://www.seideansi.ie)

that Gluaiseacht Chearta Sibhialta na Gaeltachta was established in the 1960s, agitating for improvements for the lives of the people of the Gaeltacht where poverty, unemployment and a broken education system were leading to mass emigration (Mac Con Iomaire 2006). Their two core campaign issues were employment rights and language rights with two of their main demands being the establishment of a Gaeltacht authority to support the creation of local employment and an Irish-language radio station for the people of the Gaeltacht (Ó Glaisne 1982). Among their actions, they entered a candidate in the 1969 General Election and set up a Gaeltacht pirate radio station (Saor Raidió Chonamara) in Ros Muc in Conamara (Mac Con Iomaire 2006).

Raidió na Gaeltachta (henceforth RnaG) was founded in 1972 following demands from Gluaiseacht Chearta Sibhialta na Gaeltachta (the Gaeltacht Civil Rights Movement) for a Gaeltacht-based radio station (Ó Glaisne 1982; Ó hIfeárnáin 2000; Watson 2003; Mac Con Iomaire 2006). The station is part of the national broadcaster RTÉ. Its headquarters is in Casla in the Conamara Gaeltacht. It also has studios in the Donegal and Kerry Gaeltachtaí as well as access to RTÉ's regional studios in other parts of the country. Having started on a part-time basis, its schedule increased over the years and it currently broadcasts on a 24-hour basis on FM, satellite and online (RnaG 2016). Unlike other stations in the RTÉ group, RnaG is non-commercial with no paid advertisements and like many minority language media outlets, is viewed as a community radio station with its listeners regarded as members of the Irish-speaking/Gaeltacht community (rather than consumers) (Browne 1992).

Being decentralised from Dublin, the station's early broadcasts were made by *clár reachtairí* a new type of employee required by necessity to act as journalist, broadcaster, presenters, producer and technician (Mac Con Iomaire 2006). For many years only native speakers were hired as *clár reachtairí* and "It is only in very recent times that people who are not native speakers with a command of rich idiomatic language are employed within the station as presenters and journalists." (Ní Neachtain 2000, p.155). Former head of RnaG, Tomás Mac Con Iomaire explains that it was during the early years of its existence that station's *clár reachtairí* collected the most valuable material from Gaeltacht communities – folklore, music and song, and knowledge that was being forgotten by younger generations - "ábhar atá anois chomh luachmhar sin mar nach bhfuil fáil ar a leithéid níos mó<sup>14</sup>" (Mac Con Iomaire 2006, p.5). Much of this material has been digitised and archived by a community scheme run by Acadamh na hOllscolaíochta Gaeilge, part of the National University of Ireland Galway and is the largest known archive of minority language material (Mac Con Iomaire 2006). Mac Con Iomaire states that these resources belong to the people and that it is RnaG's responsibility to ensure that people of future generations have access to it so that:

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<sup>14</sup> My translation: "material that is even more valuable today as the likes of it is no longer available"

le haithne a chur ar a muintir a tháinig rompu ... Mura ndéanfaidh Raidió na Gaeltachta tada i gcaitheamh na ceithre bliana déag is fiche seo atá caite ach an méid sin b'fhiú an tseirbhís a bhunú.<sup>15</sup>

(Mac Con Iomaire 2006, p.6)

The station has been credited with easing the difficulties that people with each dialect have had in understanding one another and in strengthening the ties between each community (Cotter 2001; Day 2001, p.78). It has also been credited with ushering the language into the modern era by the introduction of new terminology into its broadcasts showing the language's "viability in contemporary society" (Cotter 2001, p.310).

RnaG can be said to have laid down a gold standard of quality for spoken Irish, a standard to which it has adhered since its foundation

(Delap 2008, p.156).

As already discussed in the introduction to the chapter, Fishman (1991) was somewhat lukewarm on the benefits that mass media and technology can provide to an endangered language. Hindley also cites the influence of television "making conversation between infants and grandparents less common or constant and limits the transmission of idiomatic Irish to the young" (Hindley 1990, p.216). Kelly-Holmes (2001) admits that "medial language transmission" is likely to be inferior to transmission within the family but claims that the media still offer many opportunities for language learning.

Although Fishman's principal text (1991) predates the ICT revolution that was only beginning to take shape. Jones (2013) suggests that a footnote in his 2001 text criticising an unrealistic "fetish" that some minority language activists have about mass media, has caused many language planners not to consider the importance of the media in language planning. Fishman does however, note the opportunities offered by the recording technologies of the time for "... frequent exchange of taped letters, of taped stories, songs and games for children, (Fishman 1991, pp.93–94). He also warns that although, "more dramatic and modern arenas of modern sociocultural life" can contribute to efforts to reverse language shift, that these

... cannot substitute for, home-family-neighbourhood-community processes ... [The] home-family-neighbourhood-community complex is the normal 'whole' of childhood life and of

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<sup>15</sup> My translation: "they can come to know their ancestors ... If Raidió na Gaeltachta had done nothing else apart from this during the past thirty years, it would've been worth founding"

intergenerational mother tongue transmission. Accordingly, it must remain at the center of RLS-efforts, no matter what are the stages that necessarily come after.

(Fishman 1991, p.95).

Up until the invention of the phonograph toward the end of the 19<sup>th</sup> century, the only way of recording endangered languages was through records of phonetic writing, a method that was used up until the middle of the last century (Hinton 2001; Villa 2002), but as Villa argues, “writing down a story does not capture how talented storytellers pass on cultural history, or the language skills they use to do so” and it is thanks to the ever improving methods to capture audio that “even after an older generation disappeared, their voices could still be heard, as many times as one wanted, so that their lives and their memories did not disappear at their death” (Villa 2002, pp.92–93). The media can act as a surrogate for the oral story-telling tradition – ensuring that the stories (and the storytellers) do not die even if they're not passed on through familial inter-generational transmission (Kelly-Holmes 2001, p.; Villa 2002; Dicker *et al.* 2009). Many of these language documentation activities can seem somewhat fatalist – that the language may die as a living language but will survive in the archives for the benefit of linguistic scholars. Some linguistic scholars are beginning to collaborate with language activists to try to ensure that the products of language documentation can be used for language learning and revitalisation purposes (Dicker *et al.* 2009). Technology can support these endeavours:

Endangered language learners need to hear everyday discourse in order to relearn and use conversation. The opportunity to use technology to bridge this gap between speakers and learners can bring the few fluent speakers available into many different homes and provide a model of what spoken language could sound like.

(Hermes et al. 2012, p. 395).

The broadcast media likewise, can have a huge influence on language maintenance in native speaker households:

... they can bring new vocabulary, complex themes into the home, provoking discussions using terms that would never otherwise be used and thus extending the language in the home – their function being supplementary.

(Kelly-Holmes 2001, p.4)

Girard's edited volume (2003) documenting many cases of how radio can harness Internet and communications technologies to support rural and marginalised communities illustrates the potential of the convergence of traditional and new media which “gives average people the tools to archive, annotate, appropriate and recirculate content” (Jenkins 2001, p.93). The field of Minority Language

Media (MLM) studies can give useful insights into how the needs of minority language speakers are different to mainstream requirements and how this can help language maintenance:

how it might encourage people to speak a specific language when the dominant social, economic and political structures (not to speak of the media themselves) all work in favour of a different language.

(Cormack 2013, p.256)

The fact that digital media and technology are now all-pervasive in the modern world prompts Galla to warn that there are two stark choices facing minority languages in relation to embracing technology - “computer technology can be viewed either as a benefit, aid or supplement to language learning or may be viewed as a distraction and unnecessary tool” (Galla 2009, p.167). Mac Uidhilin (2013) suggests that advances in digital media create opportunities for endangered language communities to produce bottom-up educational resources that satisfy their socially situated requirements, particularly when these are not being satisfied by the State. Hermes et al. assert that endangered language communities who are facing the prospect of language loss are “compelled to adopt and use digital media technologies by virtue of simply inhabiting a rapidly growing technologized world” (Hermes et al. 2016, p.271). They suggest that the notion of a “digital divide” that separates dominant majority cultures and their discourses from those of many indigenous communities is an overgeneralization.

While it is true that socio-economic factors affect access to and familiarity with technology and that geographical remoteness affects the availability of high-speed broadband, these factors can be mitigated by recent low cost advances in digital recording technologies, free software and apps and mobile broadband (Villa 2002; Hermes *et al.* 2016). Villa focuses in particular on the reduction in costs of digital recording technologies enabling bottom-up initiatives where “individuals or organizations interested in preserving language and creating education materials can have functional systems at very little cost” (Villa 2002, p.95). These advances in technologies, he suggests, facilitate local communities in implementing their own revitalization initiatives and in bypassing, if necessary, governmental bodies or academic institutions who in the past wielded a lot of power in deciding which initiatives to approve.

Technological developments have moved along so fast that it is now possible for minority language speakers to record their language and history, and create materials for its teaching *as they deem appropriate*. [italics in original]

(Villa 2002, p.96)

That was in 2002 and fourteen years on, the advancements in digital media technologies have continued unabated. David Crystal in the same year citing a ‘visionary’ digital-storytelling project that



his daughter had worked on with native American communities in Arizona, correctly predicted that “in the not too distant future, we will all be telling our stories in a multimedia environment, through digital text, voice, music, video, animation, and digital imagery” (Crystal 2004, p.10)

Hermes *et al.* (2012, p.387) argue, like Fishman (1991), that it is through “bridging the discourse between school and home” (2012, p. 388), that intergenerational transmission of the language can be supported and that school-based discourses without such a bridge are no guarantee of affecting the language spoken at home:

revitalization programs conducted within the school context can only be expected to be a partial solution to language revitalization. Without socially situated contexts in which to speak the Indigenous language, schools can only attempt to create a one-way bridge to home.

(Hermes *et al.* 2012, p.387)

To solve this, Hermes *et al.* call for an “epistemological and design shift” (2012, p.389) whereby instead of the school being the source of language and cultural learning resources, that these should emanate from the home and other out-of-school contexts. They claim, like Mac Uidhlin (2013 and this thesis) that technology can support the bridging of the school-home divide. The two key steps that they identify in creating resources for revitalisation are

- language resources should be created in the community and preferably by the language learners making them an active part of the process
- capturing language in context rather than creating simulated discourse solely for the purpose of language teaching (2012, p.389)

In a later paper, Hermes *et al* also cite “a compelling need to counter dominant homogenizing cultural forces” as a reason to position indigenous communities as “active participants in the world’s media ecologies” (Hermes *et al.* 2016, p.273).

## **2.7. Finally, a response from the State – A new policy for the Gaeltacht**

In 2014, the Department of Education announced (as was promised in Straitéis 20 bliain don Ghaeilge (Rialtas na hÉireann 2010)) that they were undertaking a review of education in the Gaeltacht the objectives of which were:

... to identify policy options for the delivery of a quality education in primary and post-primary schools of various linguistic profiles in Gaeltacht areas and to clarify the policy of the Department with regard to teaching through Irish in such schools.

(ROS 2015a)

The review concluded with the publication of the document *Moltaí Polasaí don Soláthar Oideachais i Limistéir Ghaeltachta* (ROS 2015a) on the 6<sup>th</sup> of May, 2015, which was based on the following documents which were commissioned as part of the review process:

- Athbhreithniú ar an Oideachas sa Ghaeltacht: Athbhreithniú ar an Litríocht Náisiúnta (ROS 2015c)
- Soláthar Oideachais trí Mhionteangacha: Athbhreithniú ar Thaighde Idirnáisiúnta (Ó Duibhir *et al.* 2015)
- Soláthar scoile i limistéir pleanála teanga Ghaeltachta: soláthar reatha agus éileamh (ROS 2015d)
- Tuarascáil ar an soláthar oideachais trí mheán na Gaeilge i Scoileanna Gaeltachta: Cás-staidéir bunscoile agus iar-bhunscoile (ROS 2015b)

As is customary with policy proposals, a consultation process followed with focus groups held in Gaeltacht areas and invitations for submissions from interested parties and the public sought. This process concluded in October 2015 with 558 submissions having been received (ROS 2015e). An open policy debate among invited stakeholders was then held. The full policy was expected to be published in the spring of 2016. At the time of completion of this thesis (September, 2016), the full recommendations had yet to be published, although the Minister at the Department had stated that they would be published before the end of 2016 and would be implemented at the start of the 2017-2018 school year, with an annual budget of €7 million promised (Gaelscoileanna Teo. 2016).

The proposals indicate that the State acknowledges, for the first time, the challenges facing Gaeltacht schools and the native speaking children who attend them. There is a commitment to strengthen the education system in the Gaeltacht. It is proposed that schools in the Gaeltacht be identified on linguistic grounds. Schools that want to be defined as a “Scoil Ghaeltachta” would then have to satisfy certain linguistic criteria. Scoileanna Gaeltachta would be entitled to extra support and funding to deal with the complex linguistic challenges that they face. This would include extra language supports for native speakers, targeted professional development for teachers and principals and support in encouraging parental involvement in the school. The language acquisition model recommended for a “Scoil Ghaeltachta” is a total immersion model, where the school will be allowed “luath-thumoideachas iomlán trí Ghaeilge a chleachtadh ar feadh tréimhse suas le dhá bhliain sa tsraith naíonán” (ROS 2015a, p.16). This option has been included in the new primary school curriculum. The proposals also recommend that L1 speakers receive the following differentiated language supports:

- a strengthening of Scéim na gCúntóirí Teanga with the extra support focused on native speakers

- the creation of a new post “múinteoirí saibhrithe teanga” to support language enrichment
- differentiated language teaching in the classroom

A support structure would be put in place to assist schools who want to be identified as “Scoileanna Gaeltachta”, but who do not currently satisfy the linguistic criteria, achieve that status – this would likely be most needed by schools in Categories B and C. The proposals point out that a language policy that applies only to formal schooling is insufficient and that to support language revitalisation purposes, the education policy and its supports should “cur le bearta teanga i bpobail Ghaeltachta, tacú le comhoibriú idir scoileanna Gaeltachta agus a bpobail áitiúla, agus gníomh agus rannpháirtíocht a chothú ag an leibhéal áitiúil” (ROS 2015a, p.5). It is also proposed that English-medium education will be provided “comhthreomhar le teagasc trí mheán na Gaeilge nuair atá mais chriticiúil ann agus nuair atá éileamh a dhóthain ann dá leithéid de sholáthar comhthreomhar i limistéir Ghaeltachta aitheanta” (ROS 2015a, p.16).

The proposals admit that the current supply of learning resources may not be fully suitable for native speakers and that trying to satisfy their requirements and bring the general standard of Irish-language resources up to that of their English language equivalents will be extremely challenging. The principal suggestion made in this regard is the development of a resources website:

Rogha amháin chun sinéirgí nua a aimsiú agus chun gearáil a dhéanamh ar acmhainní is ea suíomh tacaíochta tiomnaithe a bhunú don oideachas Gaeltachta nó don soláthar trí mheán na Gaeilge i gcoitinne.

(ROS 2015a, p.13)

The proposals also admit that while the new system of standardized testing is a step forward in that it offers tailored tests for schools teaching through Irish, it still may not be ideal in assessing native speakers. The importance of the relationship between the school and the home and the surrounding language community is also highlighted and how the school can support activities that promote the use of the language outside the school.

Cuirfidh polasaí na Roinne ar an oideachas Gaeltachta agus na tacaí a ghabhann leis le bearta teanga i bpobail na Gaeltachta, tacóidh sé le comhoibriú idir scoileanna Gaeltachta agus a bpobail áitiúla, agus spreagfaidh sé gníomh agus rannpháirtíocht ag an leibhéal áitiúil.

(ROS 2015a, p.15)

The day following publication, RTÉ Raidió na Gaeltachta featured the announcement of the policy proposals in each of their main current affairs programmes (‘Adhmhaidin’ 2015, ‘Cormac ag a Cúig’ 2015, ‘Iris Aniar’ 2015) and sought the reaction from representatives of the various stakeholders

in the education system in the Gaeltacht, as well as from experts and activists who have been involved in campaigning Gaeltacht rights for many years.

Contributors throughout the day included Joe Mc Hugh, Minister with responsibility for the Gaeltacht, Pádraic Mac Fhlannachadha vice-chief inspector from the Department of Education and Skills, Conchúr Ó Brollacháin one of the authors of the review of the international literature, Máire Ní Neachtain, head of the Irish Department in Mary Immaculate College Limerick, Seosamh Mac Donnacha, author of *Staid Reatha na Scoileanna Gaeltachta* (2005), Mairéad Mac Con Iomaire manager of Comhar na Naíonraí Gaeltachta (the administrative organisation in charge of early childhood education in the Gaeltacht), representatives from Tuismitheoirí na Gaeltachta, former board members of Eagraíocht na Scoileanna Gaeltachta, as well as both primary and secondary school principals (current and retired).

Different contributors to the programmes repeatedly welcomed the proposals, heralding the announcement as “stairiúil” and “rud atáimid ag lorg le blianta fada”. Attention was drawn on many occasions to the constant reference made to “cainteoirí dúchais” throughout the proposals. The fact that the State has finally acknowledged “go bhfuilimid ann” was remarked upon.

After almost every contributor had praised the proposals, they added words of caution – that this is still only a set of recommendations and that Gaeltacht communities have seen many reports in the past not being fully or properly implemented. They were anxious to hear further details on implementation and funding which had not yet been announced. Mac Con Iomaire described her dealings with the Department of Arts, Culture and the Gaeltacht regarding early years education as being “céad faoin gcéad ceart” but that her experience in dealing with other State bodies is that “ní bhíonn aon tacaíocht *ar chor ar bith* don teanga ann.” She explained that none of the child care inspectors that visit Gaeltacht services have Irish, grants offered in Gaeltacht areas have no language conditions and all of their dealings with other State departments have to be conducted through English despite their efforts to resolve this with the Language Commissioner – “Faoi láthair is ag dul ar gcúl atáimid ag dul ó thaobh tacaíocht teanga taobh amuigh den Roinn Ealaíon, Oidhreacht is Gaeltachta agus Údarás na Gaeltachta.” (‘Iris Aniar’ 2015). Máire Ní Neachtain’s analysis of the proposals captures the overall sentiments expressed during the day:

Is rud stairiúil é go bhfuil áit chomh lárnach leagtha amach don chainteoir dúchais Gaeilge ag an Roinn Oideachais .... agus go n-aithníonn an Roinn Oideachais go bhfuil dúshlán ar leith, anois, ag an gcainteoir dúchais deis a bheith aige nó aici sealbhú iomlán a dhéanamh ar an nGaeilge, go bhfuil athrú tagtha ar an saol nach féidir an sealbhú a dhéanamh thrí na modhanna traidisiúnta agus go bhfuil suíomh scoile an-éagsúil anois i suíomhanna scoile Gaeltachta nach féidir labhairt ar Scoil Ghaeltachta mar rud go dtuigeann chuile dhuine céard atá i gceist leis ... go n-aithníonn an Roinn iad féin na

héagsúlachtaí atá ansin ... moltaí atá ... i bhfad níos láidre b'fhéidir ná mar a bheadh an pobal ag súil leo.

(‘Iris Aniar’ 2015)

Conchúr Ó Brollacháin, one of the authors of the international research added a dose of realism to the debate stating that this is the final chance for the Gaeltacht to retain Irish as its community language. Mac Donnacha warned that the proposals would fail without proper oversight from some form of educational board for the Gaeltacht (something that has been recommended by numerous reports in the past).

... ach cinnte thógfadh sé foireann de thriúr nó ceathrar i chuile mhórcheantar Gaeltachta ag obair i gcomhar leis na príomhoidí, leis na múinteoirí, leis na boird bhainistíochta ... ar a laghad ar feadh deich mbliana ... le tacaíocht a chur ar fáil dóibh ... lena chinntiú, uimhir a haon, gur féidir leo na moltaí seo a thuiscint agus, uimhir a dó, go bhfuil sé de chumas acu ... na moltaí seo a chur i bhfeidhm.

(‘Iris Aniar’ 2015)

Also worthy of note is the fact that a new primary language curriculum was published in 2015 for children in junior infants up to second class (ROS 2015f). Work on the curriculum for third to sixth class is ongoing (ROS 2015f). For the first time, the new language curriculum has the same structure for both Irish and English (ROS 2015g). There are still only two versions of the curriculum – one for English-medium schools and one for Irish-medium and Gaeltacht schools. The oral language strand was first implemented in schools in September 2016 with new reading and writing strands to be implemented in September 2017. The new syllabus is a more structured version of the 1999 communicative syllabus which was extremely progressive but which teachers appeared to have some difficulties implementing (ROE 2007).

## **2.8. Conclusion**

This chapter has illustrated the complicated power dynamics in Ireland in relation to the Irish language. While the State recognises it as the first national language and funds certain activities, it has at the same time been neglecting the needs of the most important people related to its survival as a community language. The uncertainty around the definition of a Gaeltacht school and how it is supposed to fulfil its statutory obligations relating to preserving the language in communities of varying linguistic contexts has meant that schools differ in how they operate in relation to supporting the needs of native speakers. The following observation from Glynn et al. illustrates the fragility of the power dynamics within the Gaeltacht and how this may affect how the cultural wealth of children’s backgrounds may be valued:

Students, particularly in Gaeltacht areas would probably also possess a certain repertoire of local knowledge that largely remains underutilised or ignored. However, students' success in the classroom may depend upon whether or not their language knowledge and lived experience could safely be brought into classroom, safely talked about, affirmed and legitimated through interactions with teachers and peers.

(Glynn *et al.* 2009, p.3)

It is hoped that the publication of the Policy on Gaeltacht education will remove this uncertainty and allow the cultural wealth that still exists in many Gaeltacht homes and communities to be welcomed into the classroom. This should be cherished and developed further following a curriculum that values the home backgrounds of all children equally while trying to ensure that an ethos that promotes the conservation, transmission and development of the community's linguistic and cultural wealth for the next generation is followed.

Ideally, as Kelly-Holmes (2001) suggests, intergenerational transmission of the language will occur in the family setting, and even there, it may be possible for the school to explicitly intervene by devising projects that promote cultural awareness in which native-speaking children are asked to record the nature of their interactions with older generations at home. The nature of these recordings should be in the mode (e.g., audio, video or writing) most comfortable to the child and the adult. Based on the earlier discussion on the effects of language standardization, audio may be the most appropriate and desirable format.

If this option is not available to a child, and in the context of a Gaeltacht undergoing accelerated language shift, this may well be the case, making use of resources such as the Raidió na Gaeltachta archive can fill a gap where Gaeltacht schoolchildren can be provided with comprehensible input in a desired target variety. Technology has the capability to provide such resources in the classroom and in the home.

## **Chapter 3 – Review of the Literature**

### **3.1. Introduction**

The following chapter outlines the pedagogical principles that underline the design of the intervention implemented in the research. The overarching perspective which informs this research is sociocultural theory and this is presented first, aided by a key example of classroom practice that illustrates the theory in action. Related developments of sociocultural theory are then reviewed including situated learning and computer-supported collaborative learning. Pedagogical models supporting language acquisition in minority communities are presented which draw on theories of second language acquisition. The field of New Literacies Studies is then presented which views texts as multimodal and created within social practices. The creative concept of synaesthesia is often associated with the creation of multimodal texts and this is discussed as the re-representation of meaning using different modes. This is followed by a discussion of theories that link school-based and out-of-school literacy practices. These include funds of knowledge, knowledge producing schools, artefactual literacies and identity texts. What these approaches have in common in relation to language and literacy learning is that they view texts in a broad sense that incorporates a digital, multimodal view of text consumption and production. They also view peoples' encounters with 'texts' as language or literacy events within a particular social context. A set of criteria for evaluating technology-supported instruction (Cummins *et al.* 2007) which this research drew upon to inform its design is then presented. The chapter concludes with the description of three sample projects which exemplify the theoretical principles employed in the design of this research.

### **3.2. Pedagogical Principles Underlying the Design: Sociocultural Theory**

Socio-cultural theory is based on the writings of Lev Vygotsky on human development (Vygotsky 1978; Vygotsky and Kozulin 1986; Daniels *et al.* 2007). He identified cultural artefacts, such as speech and language, as tools that are crucial in shaping thought and action. He suggested that as people's thinking is influenced by the tools of a culture, those tools are in turn shaped by the thinking of participants in that culture. Vygotsky's general genetic law of cultural development emphasises the importance of social interaction on a child's development:

any function in the child's cultural development appears on the stage twice, on two planes, first on the social plane and then, on the psychological plane, first among people as an intermental category and then within the child as an intramental category

(Vygotsky 1981, p.163)

Vygotsky identifies language as the principal tool which facilitates appropriation of inner speech by the child (language as psychological tool) from social speech (language as cultural tool) – a process which is a critical instantiation of learning (Mercer 2003; Daniels 2007; Hoadley and Van Haneghan 2012).

The following synopsis of a study by Moll and Whitmore (1993) exemplifies a socio-cultural approach towards literacy education and language development taken by a teacher in a third grade bilingual classroom (English and Spanish) in the U.S. This study illustrates how such an approach can transform a classroom and provides much of the inspiration for the design upon which the research outlined in this thesis is based. This example illustrates a number aspects of socio-cultural theory in practice that will be addressed in turn. Eschewing traditional models based on fixed texts transmitted in stages, the teacher organised literature groups according to the interests and choices of the children, and provided them with frequent opportunities to mediate each other's learning through shared literacy experiences. The teacher would help the children attempt more difficult materials with the aim of expanding their abilities. She would also ensure that the children developed strong literacy skills in their first language to serve as a basis for second language development. Part of the children's day was spent working on both individual and collaborative projects based on a theme chosen by the class. Based on these themes, the teacher would gather together a wide variety of literacy resources (books, posters, pieces of art and artefacts) in both languages to support research. She would also encourage the children to bring objects of interest and value to them from home. No limit was placed on what the children could learn about a theme; in fact they were encouraged to stretch their abilities. Both the process of learning and the completed project were equally valued. An essential factor that contributed to the success of the classroom was the control given to the children in relation to their learning experience. Each theme culminated with the production of an artefact or presentation and the children also completed a referenced report which was submitted to the school library (Moll and Whitmore 1993).

A key theory that Vygotsky developed in relation to the social plane is the Zone of Proximal Development (ZPD) which establishes the ways in which instruction can lead to development. This is represented by the enhanced capabilities of a learner working in the presence of a more skilled peer or teacher (1978, p.86). A theory related to the ZPD is that of scaffolding and parallels are frequently drawn between the two concepts (Stone 1993). The concept was first introduced, before the writings of Vygotsky were translated into English, as a metaphor when analysing social interactions between adults and children (Wood *et al.* 1976). Emphasis is placed on the role of the adult controlling those parts of a task that are initially beyond the capabilities of the child, "thus permitting him to concentrate upon and



complete only those elements that are within his range of competence” (1976, p.90). The adult eventually fades away once the child has achieved competence.

Many researchers from a socio-cultural perspective have treated the term with caution as it can be interpreted in a narrow, one-way fashion, where the teacher alone, creates the scaffold and presents it for use by the learner – in reality a form of didacticism (Hatano 1993). The concept of the ZPD has seen scaffolding redefined from a socio-cultural perspective whereby the *learner* is given agency in the control of their learning (Moll and Whitmore 1993; Daniels 2007). In this broader view of scaffolding, the nature of the communicative exchanges in building common ground between the learner and more able peer/adult are of critical importance to the potential learning that the child can achieve (Wegerif and Schrimshaw 1997; Mercer *et al.* 2003), as is the level of trust in the interpersonal relationship between them (Stone 1993). The shared activities in scaffolding should be meaningful and authentic for both learners *and* “scaffolders” with the potential for the scaffolder to learn from the experience (Mercer 2003; Glynn *et al.* 2009). Moll and Whitmore warn that ZPD has also been interpreted narrowly and

that it is incorrect to think of the zone as solely a characteristic of the child or of the teaching, but of the child engaged in collaborative activity within specific social (discourse) environments.

(Moll and Whitmore 1993, p.21)

Moll and Whitmore stressing the importance of language in Vygotsky’s theories argue that the ZPD should not be thought of as a characteristic of the child or of the teaching, but of the child engaged in collaborative activity within specific social environments as illustrated in the opening vignette (1993). They propose that the socio-cultural system within which children learn should be thought of as a “collective” zone of proximal development. They claim that the *interdependence* of adults and children, and how they use social and cultural artefacts (which embody the voices of the people who made them) is central to a Vygotskian analysis of instruction. This means that in a classroom context, “the role of the teacher is to mediate these social contexts, in a Vygotskian sense, so that through their own efforts children assume full control of diverse purposes and uses of oral and written language” (Moll and Whitmore 1993, p.21).

Moll and Whitmore’s study is also illustrative of a learner-centred classroom where the teacher is aware of and curious about the prior knowledge and cultural practices that each learner brings with them to school and encourages them to draw on those resources when collaboratively building new knowledge in the collective ZPD.

Hatano in a commentary article on several socio-cultural classroom interventions (including Moll and Whitmore’s) suggests that the following sociocultural constraints apply in relation to children’s

learning in classrooms: (1) knowledge is often constructed through social interaction with a teacher or more capable peer, (2) a collective “something” is co-constructed through this interaction (3) the learner internalises this “something” which may cause a revision of his or her knowledge (4) classroom interaction is part of a larger system such as a school or community and this in turn influences the interactions within the classroom through mediating individuals and artefacts (Hatano 1993, p.165).

It should be noted that there is unlikely to be any immediate noticeable change in children’s learning on adoption of this type of pedagogy with Vygotsky stressing that children’s developmental processes occur over a long period of time and that they lag behind learning processes “... at the moment a child assimilates the meaning of a word, ... her developmental processes ... have only just begun” (Vygotsky 1978, p.90). Planning for the implementation of these types of pedagogical approaches must, therefore, be over the long term.

### **3.2.1. Situated and Collaborative Learning**

Building on socio-cultural theory, a number of studies have been conducted in recent years by anthropologists, sociologists and psychologists into how groups of people function in everyday settings (Lave 1988; Lave and Wenger 1991). The situations in which they functioned – the physical and social environments – were found to be an integral part of the cognitive activities of the groups. Lave and Wenger (1991) used the term *situated learning* to describe how knowledge, tasks, and responsibilities are distributed among practitioners within diverse *communities of practice* situated in particular social contexts. They use the term *legitimate peripheral participation* to describe how newcomers (or apprentices) to these communities of practice gradually learn the knowledge and skills required to fully participate in the community. In theories of situated learning, learning is viewed as a process of entry into a community of practice:

To learn to use tools as practitioners use them, a student, like an apprentice, must enter that community and its culture. Thus in a significant way, learning is, we believe, a process of enculturation.

(Brown et al. 1989, p.33)

Researchers in the learning sciences have often seen technology as a good fit for socio-cultural theory and situated learning as well as for the constructivist and progressivist pedagogies of Piaget and Dewey (Koschmann 2002; Hoadley and Van Haneghan 2012). The field of Computer Supported Collaborative Learning (CSCL) is one such area of research that grew from efforts to design educational interventions that are often grounded in socio-cultural and socio-constructivist perspectives of how people learn as opposed to the drill-and-practice applications that accounted for the majority of instructional software at the time (Koschmann 1996) – “CSCL arose in the 1990s in reaction to software

that forced students to learn as isolated individuals” (Stahl *et al.* 2006, p.410). A commonly quoted definition of CSCL is:

... a field of study centrally concerned with meaning and the practices of meaning-making in the context of joint activity and the ways in which these practices are mediated through designed artifacts.

(Koschmann 2002, p.20)

Following an applied research approach, interventions are usually designed, implemented and studied in real classrooms (Hoadley 2002; Stahl *et al.* 2006; Dillenbourg 2013). Novel methods have been identified to collect data and analyse how groups collaborate and think together (Suthers 2006). This often involves video recording the learners collaborating in classrooms and analysing their interactions (Barron 2007; Derry *et al.* 2010). Interventions in CSCL research are often designed using digital technology to implement collaborative learning practices which encourage learners to co-construct artefacts that embody the core insights into how people learn (Stahl *et al.* 2006, 2014).

During the 1990s typical interventions in CSCL would be large budget projects with teams of designers, computer programmers and researchers developing customised hardware or software to support learning. These were often in the sciences or related disciplines. Examples of these include:

- CSILE/Knowledge Forum (Scardamalia and Bereiter 1993, 2006) – Useful to any age group who have basic literacy skills, *Computer Supported Intentional Learning Environment (CSILE)*, later renamed as *Knowledge Forum*, is a software application that was designed before the world wide web came to prominence to enable collaborative knowledge building using computer networks. It enables learners to simultaneously create text or graphical notes, comment on each other’s notes, search the note database and organise notes in frameworks of various configurations. These collective knowledge building activities have been used in various contexts to help learners progressively make meaning in a highly visible and tangible way.
- Quest Atlantis (Barab *et al.* 2005) – Aimed at 9-12 year olds, Quest Atlantis is a three-dimensional virtual world on the theme of environmental science which focuses on blended learning between the virtual world and the classroom.
- GenScope (Hickey *et al.* 2003) – Aimed at secondary school science learners, GenScope is an application that teaches students about genetics by setting problems about the genetic makeup of various dragons and then enabling them to manipulate the dragons’ DNA and other genetic characteristics.

CSILE/Knowledge Forum followed an iterative design approach (a common approach in engineering and software development) where early versions would be deployed in participating schools' classrooms, evaluated and then improved upon based on evaluation (Scardamalia and Bereiter 1993, 2006). Quest Atlantis and Genscope both used a similar iterative approach - design-based research - the methodology used in this thesis (discussed further in Chapter 4).

### **3.3. Web 2.0: Transforming Meaning Making through Social Software**

The emergence of CSCL and the increasing opportunities to deploy its theories into practice was greatly helped by a phenomenal growth in computer ownership, driven by a desire to connect to a rapidly expanding Internet. When the field first emerged, most Internet communication was done via text-based tools such as e-mail and bulletin boards (asynchronous) and chat rooms (synchronous) (Warschauer 1999). The World Wide Web was a one-way delivery system of information that was still in its infancy and did not generally support interpersonal communication. This has changed a great deal in the interim. The Web today is a platform that supports a participatory culture using tools such as blogs, wikis, social networks and virtual worlds which has been collectively termed *Web 2.0* (Warschauer and Grimes 2007). These off-the-shelf tools can, when used appropriately, enable any school or classroom create similar types of collaborative learning experiences that the early specialist projects described above could, but at a fraction of the cost (Mac Uidhlin 2013; Slotta and Najafi 2013).

Many researchers in CSCL now look to how these tools can be used by schools to support collaborative knowledge construction. Wikis which, bear many similarities to CSILE/Knowledge Forum, have been a particularly rich vein of research in CSCL (e.g., Augar *et al.* 2004; Forte and Bruckman 2006; Peters and Slotta 2010; Slotta and Najafi 2013). Many of these authors argue that regular classrooms can use wikis for "productive knowledge building" as long as the pedagogy is appropriate. A wiki is an interactive website that enables a group of people to engage in some form collaborative knowledge building project (Lankshear and Knobel 2011). Any authorised user (sometimes anonymous) can contribute to the wiki by creating or editing pages, uploading digital media resources (e.g. audio, image or video files) or contributing to community debate through a wiki's talk pages. In the early days of Web 2.0, creating a new wiki was not technically trivial. In more recent years, there are a number of companies (e.g. Wikispaces, pbWiki) that offer free wiki hosting packages to educational institutions. The types of service typically available in these packages includes the management of pages and media files, user-account services, privacy tools, tools for monitoring usage, etc.

The *raison d'être* of Wikis, is collaborative work. Each edit on a wiki is a contribution to a collective knowledge base. Wikipedia is by far the largest and most well-known wiki in over 250

languages including many minority languages<sup>16</sup> (wikipedia.org 2016). What makes Wikipedia particularly interesting is how the Wikipedia community has evolved since its creation. In an empirical analysis of community activity in Wikipedia, Viégas *et al.* (2007, p.1) found that despite rapid growth, “the Wikipedia community places a strong emphasis on group coordination, policy, and process”.

Brown and Adler (2008) cite the development of Wikipedia as an example of an online community of practice. Novices become trusted members of the community through a process of legitimate peripheral participation. Newcomers begin by applying some minor edits to pages and by observing the social norms of the community. As they begin to show proficiency, other users begin to trust and rely on them until they eventually may achieve administrator status which has increased responsibilities and access to privileged editing tools. As well as socio-cultural aspects, they also focus on structural features of wikis whereby the history of a page and the discussions around its content can be easily reviewed, which they suggest, enables “... a new kind of critical reading—almost a new form of literacy—that invites the reader to join in the consideration of what information is reliable and/or important” (Brown and Adler 2008, p.20).

Larsson and Alterman (2009) suggest that a wiki has several properties that makes it an ideal candidate to support collaborative learning both within and outside the classroom. A wiki is both social and collaborative and is a type of tool familiar to many learners and teachers. Wikis can be used to scaffold learning using pre-formatted content but it is also easy for any user to adapt the non-hierarchical environment which gives learners a strong sense of ownership of the content.

Slotta (2013, p.3) proposes a pedagogical model that he calls “Knowledge Community and Inquiry” based on situated learning as being suited to web 2.0 technologies such as wikis (he cites the Community of Learners (Brown *et al.* 1996) and knowledge building models (Scardamalia and Bereiter 1993, 2006) as the basis for this). Slotta’s model proposes the idea of students working collaboratively in a knowledge community to build a knowledge base (such as a wiki) around a specific topic. The wiki improves over time to the benefit of both current and future users. He suggests that the teacher “must have a consequential or deterministic role” in the process and not just simply a “guide on the side” and that they should be aware that managing a knowledge base such as a wiki requires a lot of work (2013, p.5).

New technologies such as blogs, social networking tools, and wikis in particular have lowered the barriers to producing and publishing many forms of content and have enabled many-to-many communication and collaboration. They therefore deserve attention in any minority language learning

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<sup>16</sup> A full set of statistics on all language versions of Wikipedia are available at <http://stats.wikimedia.org/>

intervention. Their potential for connectivity prompts us to think carefully about how we design and make tacit the dynamics of learners' interactions.

### **3.4. Pedagogical Models Supporting Language Acquisition in Minority Communities**

The communicative approach to language teaching is the current pedagogical model implemented in the Irish language curriculum in primary schools (Rialtas na hÉireann 1999). This approach highlights the importance of developing all four language skills – listening and speaking as well as reading and writing (Ó Laoire 2004). The theories of Hymes (1972) and Krashen (1981, 1982) heavily influenced the development of the communicative approach to language learning (Ó Laoire 2004). Hymes emphasised the importance of appropriate language use – knowing when to say something as well as knowing how to say it (1972). Dorian, when looking at a severe case of language shift in a Scottish Gaelic community, suggests that “it seems that knowing how to say relatively *few* things appropriately is more important than knowing how to say very many things without sure knowledge of their appropriateness” (Dorian 1982, p.31).

Krashen stressed the importance of focusing on acquisition in language teaching. While Krashen's theories (and most research on communicative competence) are focused on second language learning, he points out that the process of second language acquisition is “similar, if not identical, to the way children develop ability in their first language” (Krashen 1982, p.13). He suggests that conditions in which learners are exposed to “comprehensible input” that is slightly above their current level of ability are well suited to promoting language acquisition and that acquisition also requires the “meaningful interaction” of learners where they focus on meaning in language resources rather than on form. He suggests that learners will acquire the language sub-consciously from exposure to sustained comprehensible input and that speech will develop naturally: “The best way, and perhaps the only way, to teach speaking, according to this view, is simply to provide comprehensible input” (Krashen 1982, p.23).

In his book on teaching and researching listening in the language classroom, Rost recommends that “teachers should aim to provide rich listening input that contains useful models of culture, interaction styles, and colloquial pronunciation and vocabulary, so that students' emerging speaking can be modelled on this input” (Rost 2013, p.160). Opportunities should also be made available for *extensive* listening which encompasses “all types of listening activities that allow learners to receive a lot of comprehensible and enjoyable listening input” (Renandya and Farrell 2011, p.56).

A related concept, the importance of which is underlined in descriptions of the communicative curriculum, is that of providing extensive authentic language resources as input (Little *et al.* 1994; Ó Laoire 2004). Little defines an authentic text as “... a text that was created to fulfil some social purpose in the language community in which it was produced” (Little *et al.* 1994, p.45). The Irish syllabus suggests the use of authentic texts that are both traditional and non-traditional including websites, and clips from radio and television programmes (Rialtas na hÉireann 1999). With a specific focus on teaching endangered languages, Villa defines authentic materials as:

... original texts, films, and recordings of language usage, among other media, that accurately reflect how a language community employs its heritage tongue, materials that have not been specifically created for instructional purposes. Thus, a dialogue in a language textbook contrived solely to illustrate a certain usage of a verb or exemplify some grammatical structure is an example of non-authentic materials. A recorded oral history carried out by a member of a minority language group with another member of that language group, used to illustrate language use, falls into the "authentic materials" category.

(Villa 2002, p.93)

Many endangered language communities struggle to find authentic language resources suitable for educational purposes (Villa 2002). As discussed in chapter two, digital recording technologies have been key to making authentic language resources available to endangered language communities (Villa 2002; Hermes *et al.* 2016). Researchers from outside of the community must be cognisant of the rights of the indigenous communities and ideally, efforts to create authentic materials should be led or co-led by members of the local community (Villa 2002) and although digital technologies can have a central supporting role in language revitalization “a device does not replace the unique, meaningful, and spontaneous thrill of being understood and understanding a human being” (Hermes *et al.* 2016, p.279). A sample project that employed digital audio in language revitalisation efforts is discussed in section 3.8.

Rost cautions that authenticity is relative to the learner’s social context and that authenticity increases the closer the learner is to the ‘control centre’ of the interaction. As a corollary to this, he goes on to argue that “those inputs and encounters that involve the students’ own purposes for listening can best be considered authentic” (2013, p.165). Based on his collaborations with practitioners, he suggests that student engagement with authentic listening texts can be increased if teachers can find ways of allowing students to:

- choose what they listen to;
- make their own listening texts;
- control the equipment (being in charge of replaying difficult parts of the listening text, for example);
- give the instructions;
- design their own listening tasks;
- reflect on their problems in listening.

(Rost 2013, p.167)

As well as the importance of authentic resources in language acquisition, researchers in the learning sciences suggest that there are pedagogical benefits if the nature of the task that the students are working on is perceived to be authentic. “Students who work on problems that (a) mean something to them personally and (b) are rich and complex enough to invoke real expertise, are far more likely to learn” (Hoadley and Van Haneghan 2012).

Swain (1985), in critiquing Krashen’s input hypothesis, proposed an output hypothesis which emphasises the need to focus on students’ output, as input on its own, she argues, is often insufficient to sustain acquisition. She later incorporated socio-cultural theory into her research suggesting that a focus on input or output alone was insufficient – that language learning is a situated activity in a particular social context and that the learners’ dispositions in relation to the learning environment, its culture and the language are key in facilitating acquisition (Swain 2000).

Applying socio-cultural theory and situated learning to language learning, Hanks (1991) suggests that the way to maximize acquisition is through performance in the target language and that as fluency in a language is one of the most basic skills required to participate in society, discourse production should be viewed as a way of engaging a learner/apprentice in social and cultural practice rather than simply as a structure in which engagement takes place. “The degree to which a learner is motivated to acculturate with the target language group will determine the success which he or she acquires the second language” (Rost 2013, p.158).

Canagarajah (2002) cites the empowering nature of technology and calls for space to be made “for local knowledge in terms of disempowered communities” and for the construction of transformative pedagogies to “help construct more egalitarian relationships in education and society.” (Canagarajah 2002, p.248). Glynn et al. (2012, p.3) also claim that a “transformative pedagogy” is needed for children in minority language communities who, under traditional language teaching models, “may come to perceive themselves as being “no good” at languages, to believe that their home language is of little value in the real world”. Affective factors that concentrate on building trust and respect between teachers, children, parents and the local community are key to the success of a



transformative pedagogy within minority communities (Gee 2008; Cummins and Early 2011; Glynn *et al.* 2012).

Cummins in his work with children from marginalised communities has devised a number of pedagogical frameworks over the years that promote the co-construction of knowledge in a similar manner to this. He has suggested that as well as the co-construction of *knowledge* being a critical success factor for learning in a collective ZPD, the negotiation of *identities* between learners and teachers is just as significant. “Essentially, this conception extends the ZPD beyond the cognitive sphere into the realms of affective development and power relationships” (Cummins *et al.* 2007, p.59).

Cummins’ writings repeatedly link human relationships based on affirmation and respect with successful language and literacy development in the classroom (Cummins 1996, 2000; Cummins *et al.* 2007; Cummins and Early 2011). He cites the following core components that instructional strategies should incorporate to “affirm bilingual students sense of self” and “give students access to the power of language and accelerate their academic growth”:

- active communication of meaning;
- cognitive challenge;
- contextual support;
- building student self-esteem.

(Cummins 1996, p.75)

Cummins and Early (2011) in outlining the various pedagogical models that have been employed in education over many years highlight the tendency of scholars to promote one model while casting another in a negative light. They propose a pedagogical model that consists of three nested pedagogical orientations – transmission, social-constructivist and transformative (Figure 4) – to illustrate that each type of pedagogy can be utilised by the teacher or the learner depending on the context of the learning.

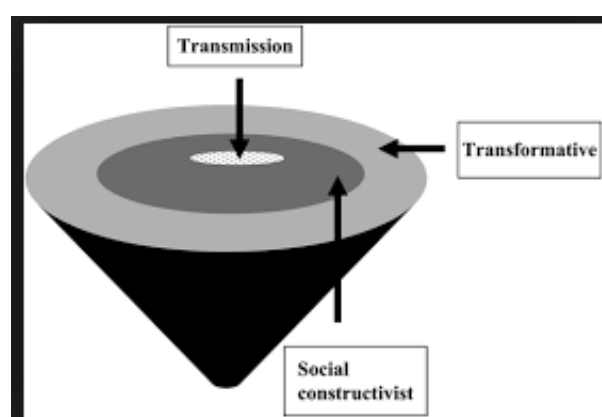


Figure 4 - A Transformative Pedagogy (reprinted from Cummins and Early 2011) <sup>17</sup>

<sup>17</sup> Permission to reproduce this image has been granted by the author

In the diagram, the transmission-oriented pedagogy is nested within the other two orientations. Cummins and Early (2011) suggest that in this orientation, students' prior knowledge is only likely to be activated in the context of going back over content or skills covered in a previous lesson. The social-constructivist orientation, situated between the transmission and transformative orientations, is grounded in the work of Vygotsky and situated learning. They suggest that there would be an emphasis here on active learning through collaborative enquiry and knowledge building, building on students' prior knowledge. The transformative orientation expands the focus again by encouraging the students to reflect on how the knowledge they are constructing intersects with power encouraging critical literacy skills.

... the defining criterion of transformative pedagogy is that teacher-student classroom interactions challenge the operation of coercive relations of power. Interactions that meet this criterion include:

- an explicit instructional focus on social justice and equity by means of critical analysis of social issues and texts (broadly defined) and
- classroom project work (such as identity text creation), associated with the students' cultural and linguistic capital, which promotes identities of competence among students from marginalised community groups, thereby challenging the devaluation of these students' cultures and languages in the wider society

(Cummins and Early 2011, p.31)

The artefacts that Gaeltacht children created during the course of this research was based on this construct of identity texts (Cummins *et al.* 2007; Cummins and Early 2011) which is elaborated upon further in Section 3.6.3.

This section has examined a number of theories that may support native Irish speakers in the development of their language and their identities in the classroom. These include the input hypothesis (Krashen 1982), the output hypothesis (Swain 1985), socio-cultural approaches to language learning (Hanks 1991; Swain 2000) and transformative approaches which include the concept of identity texts (Cummins 1996, 2000; Cummins *et al.* 2007; Cummins and Early 2011).

### **3.5. Multiliteracies and New Literacy Studies**

Further support for the design of pedagogic interventions in language learning arises from advances in how literacy is construed. A group of specialists from education, critical literacy and discourse analysis came together in the mid-90s to discuss the future of literacy pedagogy in the face of the new demands being placed on people trying to make meaning in a changing world (New London Group 1996; Warschauer 1999; Cope *et al.* 2000; Kalantzis *et al.* 2010). As a contrasting view to the

traditional view of literacy pedagogy – “teaching and learning to read and write in page-bound, official, standard forms of the national language”, they defined the term *multiliteracies* to emphasise both cultural and linguistic diversity in the context of how new modes of communication are changing the landscape in terms of what it means to be literate in the modern world (New London Group 1996, p.60).

The logic of multiliteracies recognizes that meaning making is an active, transformative process, and a pedagogy based on that recognition is more likely to open up paths to a world of change and diversity.

(Kalantzis *et al.* 2010, p.72)

Many of the scholars who were involved in the multiliteracies project had already been developing new perspectives on literacy as a set of social practices (e.g., Scribner and Cole 1981; Street 1984). This was due to factors such as the prominence of Freire’s work within critical pedagogy (Freire 1970), the alleged literacy crisis of the 1970s in the US and the increasing influence of sociocultural theory on pedagogical practice (Lankshear and Knobel 2011).

Traditionally, literacy has been viewed from a cognitivist perspective related to attaining competence in reading and writing. The word ‘new’ has been recently placed before both ‘literacy’ and ‘literacies’ to indicate opposition to this traditional view of literacy. Lankshear and Knobel (2011) identify both a *paradigmatic* and an *ontological* interpretation of the use of ‘new’ in relation to literacy.

The *paradigmatic* refers to ‘New Literacy Studies’ which views literacy from a sociocultural perspective – as a set of social practices that are situated within a physical and social environment (Gee 2004, 2008; Street 2008; Lankshear and Knobel 2011). Within different environments, the practices change with emphases on different aspects of literacy and language – oral, written, multimodal (any combination of words, images, sounds or motion), formal, informal, etc. For example, the literacy practices involved in classroom discourse (typically, oral and written discourse using more formal academic language) would tend to differ from those in an online social network (typically, written and multimodal discourse using more informal language).

The *ontological* refers to the nature of how literacy has changed in recent years. Lankshear and Knobel (2011) suggest that there are two aspects to this. The first has to do with the emergence of technologies that have enabled the production and consumption of multimodal forms of literacy that are significantly different from conventional literacies. The second aspect refers to there being a different ethos involved with new literacies. The following sections (*redefining texts as multimodal* and *a new ethos*) discuss these two ontological changes.

### 3.5.1. New Literacies: Redefining texts as multimodal

As texts have become more visual and aural, scholars in the NLS have seen the need to redefine what a “text” is in a much broader semiotic sense than more traditional literacy scholars:

We need a quite new way of thinking about resources, their use and the users; we need a new theory of meaning and meaning-making, a new theory of semiosis.

(Kress 2003, p.24)

Texts are often viewed as multimodal (Kress 1997, 2003; Jewitt 2005; Rowsell and Pahl 2007; Pahl and Rowsell 2012). Kress defines a text as: “any instance of communication in any mode or in any combination of modes whether recorded or not” (1997, p.48). Kress defines a mode as “... a culturally and socially fashioned resource for representation and communication” (Kress 2003, p.36). Multimodality refers to the combination of modes and from a sociocultural perspective “takes account of how individuals make meaning with different kinds of modes” (Pahl and Rowsell 2012, p.28). Kress and Van Leeuwen define multimodality as

the use of several semiotic modes in the design of a semiotic product or event, together with the particular way in which these modes are combined - they may for instance reinforce each other, ... fulfil complementary roles, ... or be hierarchically ordered.

(Kress and Van Leeuwen 2001)

Different modes have different affordances which offer different potentials with which to make meaning, for instance, “the kinds of meaning possible through the logic of time differ profoundly from those offered by the logic of space (Kress and Selander 2012, p.267). Kalantzis et al. use the term *design* to refer to the compositions of students (*designers*) who draw upon “existing design elements that can be linguistic (written or oral), video, audio, tactile, gestural, spatial, or multimodal” (2010, p. 71).

The rapid evolution of digital technologies is playing “an increasing role in changing media into modes, and hence in controlling how meaning can be made” (Kress and Van Leeuwen 2001, p.79). New technologies have changed the form and functions of texts (Pahl and Rowsell 2012) and also enlarged the possible meanings that can be made from them (Lankshear and Knobel 2008). Pahl and Rowsell (2012, p.43) suggest that “writing often implies skills beyond word-smithing and crafting a sentence” but that it is still helpful “to view **texts as artefacts** which are comprised of modes”. They propose that *composition* or *remixing* are perhaps more fitting terms than *writing* to describe the process of producing an artefact that can comprise of image, hypertext, sound and moving images” (Pahl and Rowsell 2012, p.43). Knobel and Lankshear (2008, p.22) define remixing as follows: “.. to take cultural artifacts and combine and manipulate them into new kinds of creative blends”.

While remixing is defined as the actual action of mixing modes, Potter (2012, p.5) suggests the term *curatorship* to refer to the management of digital resources for meaning making (or remixing) purposes. Digital curating is firstly collecting resources for self-representation, then cataloguing them so that they can then be re-arranged or remixed into a coherent artefact that has meaning for a specific audience (Potter and Gilje 2015, p.2). They then suggest that curatorship thus defined “... is an essential life skill; the management of resources and assets made for, by and about us in a range of media” (2015, p.2). These types of skills are particularly important to threatened language communities where the digitisation, archiving and management of cultural artefacts is becoming increasingly common (Hinton 2001; Brown and Nicholas 2012; Cushman 2013).

A key concept in terms of the learning that can be achieved through this new view of literacy as the co-construction of multimodal artefacts is that of *synaesthesia* (Kress 2003; Kalantzis *et al.* 2010). There is a clinical understanding of synaesthesia as a condition where a person experiences a sensation in an unconventional manner e.g. hearing a colour, feeling a smell (Nelson 2006) but this has been adapted in by some authors in semiotics and new literacies studies and is defined as: “the process of shifting between modes and re-representing the same thing from one mode to another” (Kalantzis *et al.* 2010, p.67). Kress (2003) suggests that the essence of synaesthesia is creativity and builds on this by suggesting that:

increased semiotic richness and hybridity, both linguistic and extralinguistic, could only serve to increase the possibility of emergent knowledge, which may in turn positively affect intellectual and affective development.

(Kress 2003, p. 71)

Kalantzis *et al* (2010) argue that children are naturally synaesthetic but that these abilities are stifled by the tendency in traditional schooled literacy to separate subjects into discrete units in the timetable. The education system also favours certain types of learner over others by privileging certain modes (written language in particular) over others (Gee 2004; Jewitt 2005; Pahl and Rowsell 2012). Meaning is never exactly the same across modes (Kress 2003) but the parallelism of multimodality allows the same thing to be represented by different modes increasing the opportunities for producers and consumers of multimodal artefacts to experience synaesthesia and make meaning for themselves and for others (i.e. learn). (ibid). Nelson, who has worked on supporting second language learners using digital storytelling argues that the true value of synaesthesia lies “not so much in multimodal texts themselves as in the act of authoring them” (Nelson 2006, p.59).

There are many software applications that enable the (re)mixing of modes. These can either be stand-alone (e.g., word processors, presentation software, digital story software, media editors, etc.),

locally network-based (e.g. early versions of CSILE), or cloud-based which means that the content is stored online and accessed usually via a web browser (e.g. wikis, content management systems, etc.) (Peters and Slotta 2010; Lankshear and Knobel 2011). Each of these options will have different capabilities and allow (or be more focused towards) the mixing of particular modes. To enable remixing for a particular purpose, a set of resources must be available and ideally these should be stored in some form of knowledge base (Slotta 2013). These resources could be in existence already (e.g. a school's collection of digital resources) or created by the children in advance of a project. Villa (2002, p. 95) highlights the fact that for "individuals or organizations interested in preserving language and creating education materials", high quality digital video and audio equipment as well as digital storage capabilities are now available at affordable prices with prices having come down on a massive scale in the previous twenty years.

Secondary resources from other resource bases can also be used for digital remixing (Knobel and Lankshear 2008). The most commonly used websites in the context of supporting language revitalization include Facebook, Twitter, YouTube, SoundCloud, Google+ and the Endangered Language Project – ([www.endangeredlanguages.com](http://www.endangeredlanguages.com)) – "these and many others like them are key entry points to integrating a range of communication channels, establishing public pedagogies and personal identities, and sharing photos, video, and audio" (Hermes *et al.* 2016, p. 272).

In classroom settings, resources (and children's work) may be scattered across various devices (e.g. stored on local hard drives). If the purpose of a project is collaborative knowledge building (the approach recommended in this research), the resources need to be gathered together centrally using network-based storage such as the school's local area network or in the cloud (Peters and Slotta 2010). Tools such as wikis and other web-based technologies are able to centrally store digital resources and are being used in many classroom contexts (Forte and Bruckman 2006; Hughes and Narayan 2009) and also to bridge the gap between home and school (Goldman-Segall 1997). Wikis in particular have a human-computer interface enabling a knowledge base to be stored as a back-end service, knowledge building capabilities through a web browser at the front end and also a discursive element through the wiki's talk pages (Lankshear and Knobel 2011; Slotta and Najafi 2013).

This interpretation of new literacies will help to inform this research. It also enables us to identify the work of children remixing digital media, as a legitimate language learning practice, that is just as important as traditional practices around oral and written language. Through the process of mixing images and other modes with oral language, the children are engaging in a synaesthetic re-representation of language enabled by multimodal software. The products of this work can be seen as **multimodal artefacts**. This work lies within the realm of new literacies studies, as understood by Kalantzis *et al.* (2010) as well as others in this tradition.

### **3.5.2. New Literacies: A New Ethos**

Under the influence of socio-cultural theory, new literacies tend to be more participatory, collaborative and distributed, but less published, individuated and author-centric than conventional literacies (Warschauer and Grimes 2007). Literacy practices are viewed as intersecting with our personal histories and cultures – our identities (Gee 2008). Street defined this as an ‘ideological’ model of literacy which he contrasted with what he termed an ‘autonomous’ model that suggests literacy functions independently of its social context – the prevailing model at the time (Street 1984).

The degree to which we invest our identities in literacy practices varies according to how meaningful they are to our personal interests and goals (Peirce 1995; Cummins 1996). Successful school learners tend to invest much of their identities in school-based literacy practices and are often well versed in these even before they start schooling – e.g. being read to on a regular basis by their parents (Gee 2008). The reason some learners fail to engage with traditional literacy skills is often not because of poor cognitive ability, but that their home practices are at variance with the school’s (e.g. children from minority backgrounds) and the literacy instruction they experience in school has failed to ignite any significant degree of identity investment in that literacy practice (Cummins 1996; Gee 2004). The same students will often significantly invest their identities with highly developed literacy practices outside of school, often using technology, because they engage with their personal interests (Pahl & Roswell, 2005). Harnessing this interest, and mapping home literacy practices to the school environment is a considerable challenge for Gaeltacht-based schools.

### **3.5.3. An Opportunity for Threatened Languages**

The broader definition of text as multimodal artefact in a new literacies perspective presents an opportunity to threatened languages such as Irish to enable children to choose modes that they’re more comfortable with for language development. The tension created by the standardised texts and other resources can be bypassed by children through using rich audio resources such as the RnaG archive as well as artefacts that they choose to bring in from home. Web 2.0 applications have the added advantage of opening them up to home and community usage – a critical factor in language revitalisation.

## **3.6. Bridging the gap between the home and the classroom**

Many researchers in the NLS and related fields identify the linking of home and school literacies as a key theme (González *et al.* 2005; Cummins and Early 2011; Pahl and Rowsell 2012). This fits well with the views of many in the language maintenance literature as discussed in chapter 2:

Students' attention and interest will ebb and flow in and out of their experience of teaching. By bridging a gap between home and school, it is possible to allow them in far more.

(Pahl and Rowsell 2012, p.58)

Bouvier, working with indigenous communities on a community schools programme in Saskatchewan, Canada, echoes these sentiments and attributes the success of the programme to being able to bridge “the gap between the culture of the school and the culture of the home” (Bouvier 2010, p.170). She also suggests, citing Romero and Freire, that “we will need to situate our curriculum within the lived experiences of our students because it is affirming and validating” and that “we need to develop the gifts that each individual brings: linguistic abilities, cultural knowledge, affective development and creative action” (Bouvier 2010, p.178).

### **3.6.1. Artefactual Literacies**

Pahl and Rowsell (2012) showcase a number of literacy projects aimed at supporting marginalised children that illustrate how the sharing of artefacts and experiences from home and in the classroom can open up new spaces for different types of conversation and for the production of richer narratives. These include *The Shoebox Project* – where children were asked to bring artefacts of personal value into school in a shoe box and create narratives about them (Hughes and Greenhough 2006), *Every Object Tells a Story* - a home-based project where the research team worked with families of Pakistani heritage looking at objects and narratives around the theme of migration (Pahl and Rowsell 2010), *My Family My Story* – a digital storytelling project that introduces families to museum collections and the way that objects can be used to create stories (Pahl and Rowsell 2010) and *Language as Talisman* – a language project based in schools and youth centres in deprived urban areas of Yorkshire where young people were encouraged to co-construct artefacts on themes of language, dialect and power (Pahl et al. 2013).

Pahl and Rowsell use the term “artefactual literacies” to describe how focusing on physical artefacts can bridge gaps between home and school literacies (Pahl and Rowsell 2010, 2011). Drawing on situated studies of language and literacy, they suggest that “language events” can occur both at home and in the classroom around physical artefacts that have personal and emotional significance to the learners – “Artifacts hold diverse memories and heritage. They can create opportunities for a richer type of storytelling” (Rowsell and Pahl 2010, p.41). Teachers can draw on this concept to:



- listen to children and families in new ways;
- create learning opportunities that respect cultural diversity;
- bring in personal experience to the classroom;
- co-construct narratives about artifacts with children;
- help children create new stories and narratives;
- connect these artifact stories to other stories;
- link these stories to more general experiences in the classroom.

(Rowse and Pahl 2010, p.41)

They propose the concept of sedimented identities in texts – suggesting that children's identities can be instantiated within multimodal texts (Rowse and Pahl 2007). Basing these texts on objects from home related to the children's cultural heritage

... acknowledges how every home brings with it identities, dispositions, stories, objects, artifacts, memories, languages and resources. This implies a **wealth model** of literacy by which families' **cultural capital** can be drawn upon when planning schooled literacy activities.

(Pahl and Rowse 2012, pp.70–71) [emphasis in original]

### 3.6.2. Funds of Knowledge

Pahl and Rowse link this wealth model of literacy with the funds of knowledge approach. The 'funds of knowledge' approach was a bottom-up approach to education developed for marginalised communities of Mexican origin in the U.S. (Moll et al. 1992; González et al. 2005). Drawing on socio-cultural theory, its main premise was that local communities contain vast funds of knowledge that members of that community draw upon and that there are positive pedagogical benefits to be gained from engaging school children with their families and communities to explicitly draw upon these funds of knowledge and bring them inside the classroom for meaning making and knowledge construction purposes.

Classroom teaching and learning that developed from the Funds of Knowledge project has included the knowledge and practices to be found in working class, minoritized, and immigrant communities. .... This process – of developing curricula based on local knowledge – is the reverse of the typical Anglocentric curriculum developed by education specialists usually located at a great distance, spatially and conceptually, from the classroom.

(Amanti 2005, p.132)

Amanti identifies the common themes shared within groups because of shared histories as those offering the richest themes to teachers. Her research also illustrates how students from minority backgrounds became more confident and engaged learners when their learning incorporated topics

central to their own lives. To go beyond a superficial and stereotypical acquaintance with their students, she urges teachers to get to know the child as a whole person as opposed to the more typical child-teacher relationship (2005, p.138).

Through this process ... ideas and themes will emerge for integrating students' cultural experiences into different areas of the curriculum, which go far beyond the current standardized routines ... More importantly this process gives students and their families a sense that their experiences are academically valid.

(Amanti 2005, p.138)

### **3.6.3. Identity Texts**

A key pedagogical framework upon which the research outlined in this thesis relies is that of identity texts (Cummins *et al.* 2007; Cummins and Early 2011). It is based on the premise that re-focusing pedagogy towards transformative approaches that address issues of power and identity can help culturally diverse students "... become generators of knowledge rather than just receivers of information" (2007, p.205). Identity texts are defined as describing

... the products of students' creative work or performance carried out within the pedagogical space orchestrated by the classroom teacher. Students invest their identity in the creation of these texts – which can be written, spoken, signed, visual, musical, dramatic, or combinations in multimodal form. ... When students share identity texts with multiple audiences ... they are likely to receive positive feedback and affirmation of self in interaction with these audiences. Although not always an essential component, technology acts as an amplifier to enhance the process of identity text production and dissemination.

(Cummins & Early 2011, p.3)

Several books have been written by Cummins and colleagues describing the transformative theoretical framework, on which the approach is based (outlined in section 3.4 above). These portray a number of case studies of educators and students who have successfully implemented the process in their institutions (Cummins *et al.* 2007; Cummins and Early 2011) – see also section 3.8.3 which outlines a pertinent sample project from Cummins *et al.* (2007). Each of the projects resulted in students experiencing strong positive affect as they engaged extensively in literacy practices grounded in transformative pedagogical approaches and many illustrate the important role that technology can play in the process.

The increasing accessibility of powerful technologies provides teachers and students with new ways of creating and showcasing students' multimodal identity texts.

(Cummins and Early 2011, p.39)

#### **3.6.4. Schools out of sync with out-of-school practices**

The boundary between home and school has become more of a “semi-permeable membrane” thanks to advances in technology and children are more eager than ever to bring the technological skills that they regularly use at home into the classroom (Potter 2011). The multimodal character of these new technologies produces a tension, however, for traditional conceptions of literacy that maintain written language at their centre (Jewitt 2005, p.330) and unfortunately, to date, in spite of the rhetoric, there still appears to be a disconnect between children's rich, multimodal out-of-school literacy practices and the traditional writing-focused school-based practices (Lemke 2002; Gee 2004; Lankshear and Knobel 2011). Children are regularly engaged in complex out-of-school literacy practices using multiple technological devices but schools often choose not to welcome these practices into the classroom:

A judgement has to be made (by teachers or principals or policy makers) about whether or not a new technology can be successfully domesticated or schooled, that is to say: able to be engineered into the existing routines and structures of a school. If it can't then the usual practice is to ban it.

(Bigum 2012, p.11)

Bigum (2012) in tracing the history of computer use in schools over the previous thirty years, warns of a recurring pattern of the use of technology in schools with schools being reactive to what providers promote as the next big thing and that irrespective of the technology, schools will try to “domesticate” it to fit in with the existing educational system:

... despite the oft-cited schools + computers = improvement claim, what computers are used for in schools is always constrained by dominant beliefs about how schools should work.

(Bigum 2012, p.6)

Although huge investment has been made in installing technological infrastructure in schools in the past twenty years there is little evidence of that investment resulting in learning gains for students (Cuban 2001; Cummins *et al.* 2007). Even the OECD has recently recognised the fact that big investment in ICT in schools has shown little or no gains in learning (OECD 2015). So, despite the world at large embracing the so-called “knowledge society”, education is one of the few sectors where this has not occurred (Cuban 2001; Gee 2004; Peters and Slotta 2010; Bigum 2012).

Given the knowledge-oriented, technology-infused workplaces in which students will participate, it is important that schools integrate technology meaningfully into the curriculum, and develop new methods of instruction that emphasize collaborative knowledge construction.

(Peters and Slotta 2010, p.205)

As part of Ireland's National Digital Strategy (DCENR 2013), a Digital Strategy for Schools (DES 2015) was commissioned. The Strategy for Schools was based on findings of a comprehensive survey of teachers and principals – The ICT Census in Schools Report (Cosgrove *et al.* 2014). The Census Report found the average ratio of student-specific computing devices to learners in primary schools in Ireland is 11.1:1 at primary level (2014, p.12). This compares unfavourably with other so-called 'first-world' countries and has led, they claim, to a greater focus on the use of ICTs to support didactic rather than constructivist teaching and learning activities (2014, p.38). It also found that although desktops are the most common device in all three types of school (Figure 5), schools purchasing habits in recent years have been showing a preference towards laptops and tablets.

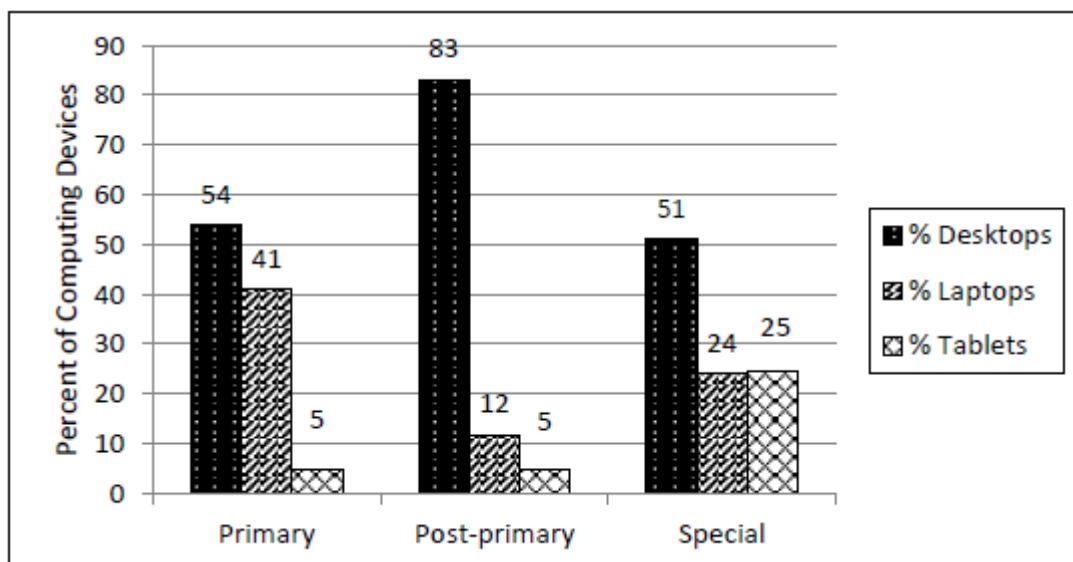


Figure 5 - Types of device being used in Irish schools (Cosgrove *et al.* 2014, p.13) <sup>18</sup>

Further pertinent data from this study shows that 25% of computing devices in primary schools were greater than 4 years old and a further 25% greater than 6 years old. This creates challenges for schools in terms of computers being able to run newer versions of software applications, teachers having sufficient skills to navigate various operating systems on various types of device and increases the likelihood of technical support being required. The resulting Digital Strategy for Schools (DES 2015) acknowledges that the issues raised in the Census Report around computer:student ratios, teacher skills and technical support are not trivial and offer no straightforward solutions to them. The Strategy also

<sup>18</sup> Permission to reproduce this image has been granted by the author

suggests that there has been too much focus on technology and not enough on pedagogy. These issues are not new echoing the findings of previous reports which highlight that while the Government has spent huge amounts of money in the past twenty years on equipment, infrastructure, training and support there is little evidence of learning gains (DES 1997, 2008b; Ahlstrom 2010).

These findings tally with my own experiences of visiting Gaeltacht schools where the hardware is often old, housed in a separate computer room where children occasionally 'do' computing for a period with a teacher who is out of his/her comfort zone, before going back to the classroom to learn through more traditional pedagogical practices.

### **3.6.5. Solutions in the cloud and poor rural broadband**

The census report suggests that advances in cloud computing may offer solutions to simplifying issues around the storage of pedagogical resources and administrative services offering potential savings on procurement and support (2014, p.38). The Digital Strategy acknowledges this finding and suggests that cloud computing has created "new opportunities for teachers, learners, parents/guardians and other organisations to interact with one another to ultimately support learning" (DES 2015, p.43). The strategy also acknowledges that opportunities to enhance the link between the school and the home can only be harnessed if they are "underpinned by fast reliable broadband" (2015, p.43).

The availability of fast reliable broadband has been a major issue for schools, homes and business in many parts of rural of Ireland. Following a flurry of reports in the media about Ireland's broadband speeds comparing poorly with other OECD countries (Ring 2010), The National Broadband Scheme was set up in 2008 and ran until 2014 with telecommunications company Three winning the contract to make basic broadband (a guaranteed minimum speed of 1.2 Mbps) available to rural locations where no such service existed (Three Ireland Inc. 2008). Although it delivered an improvement on dial-up speeds (typically 20 Kbps – 50 Kbps), these speeds were still multiple times slower than those available in urban areas and were incapable of handling the type of content that was being routinely delivered to homes, schools and businesses by the time the scheme finished in 2014 (Kennedy 2016). This has maintained the feeling in many parts of rural Ireland of being left behind (Collins 2009; Finan 2016) with parts of the west where most Gaeltacht communities live having been disproportionately affected (Frost *et al.* 2012; McGreevy 2015).

The Government's National Broadband Plan was published in 2012 to try and address some of these issues (DCENR 2012). It promised to deliver high speed broadband to all households in the State. It was slow to start (Kennedy 2016) and an updated plan was published in 2015 specifying that all addresses in the State would receive minimum speeds of 30Mbps by 2020 (DCCA 2015). At an event

in 2016, the Minister for Communications, Climate Change and Natural Resources likened the rollout of high speed broadband to the electrification of the country (DCCAE 2016a). He cited the deployment of 100 Mbps broadband to all second-level schools and most cities and larger towns as evidence of the Government's commitment to the implementation of National Broadband Plan. He admitted, however, that over 750,000 premises, among which are 1,500 primary schools, still cannot access high speed broadband. The 2020 deadline has since been pushed out to 2022 due to the complexity of the process much to the anger of rural communities (DCCAE 2016a, 2016b; Weckler 2016).

The urban/rural divide has also proven to be divisive in the UK. Plans to deliver 24 Mbps broadband to the "final 5%" of households living in more remote parts of Britain were shelved due to cost concerns leading a campaigner for better rural broadband to accuse the UK government of implementing "digital apartheid" in Britain (Hope 2016).

This also tallies with my experience of visiting both rural and urban schools. There are noticeable differences in the quality of broadband between the two. I have not seen it adversely impact on the delivery of any programme that I wanted to deliver in a school, urban or rural, but the technology that I use is not usually demanding on resources as I am usually trying to ensure that it is transferable to rural Gaeltacht schools.

### **3.7. Criteria for evaluating technology-supported instruction**

Cummins *et al.* outline six design criteria "that derive directly from the scientific research on learning and literacy development" (2007, p.206). These draw on much of the same research that has been discussed in this chapter and have been very useful in underpinning the design of the intervention to support deep engagement with rich language resources. They pose these criteria in the form of six questions:

Does the technology-supported instruction:

- provide cognitive challenge and opportunities for deep processing of meaning?
- relate instruction to prior knowledge and experiences derived from students' homes and communities?
- promote active self-regulated collaborative inquiry?
- promote extensive engaged reading and writing across the curriculum?
- help students develop strategies for effective reading, writing and learning?
- promote affective involvement and identity investment on the part of students?

(adapted from Cummins *et al.* 2007, p.41)

I have adapted them slightly for evaluating technology-supported instruction that focuses on developing listening and speaking skills for endangered language learners. These adaptations are presented in the introduction to Chapter 5 which outlines the initial design of the pedagogical intervention that was deployed in both schools.

### **3.8. Sample Projects**

The following sample projects illustrate how many of the pedagogical principles that add promise to supporting language revitalisation and described in this chapter have been implemented in practice. These projects from minority community contexts serve as exemplars of good practice, and have the potential to be applied to Gaeltacht communities experiencing rapid language shift.

#### **3.8.1. A Labrador Inuttit Story Database**

The following synopsis is based on several research papers (Andersen and Johns 2005; Dicker *et al.* 2009; Johns and Sherkina-Lieber 2012). Labrador Inuttit is the language spoken by the Inuit of Nunatsiavut, an autonomous area (since 2005) of northern Labrador and Newfoundland, Canada. The language is in grave danger of dying as the majority of fluent speakers are over thirty five years old and very few children speak it as a first language.

... the next 10 years will determine whether or not Labrador will be a region where Inuttit continues to live or is instead an area where the language is a cultural memory to be found only in books, video, audiotape, etc.

(Andersen and Johns 2005, p.189)

A recent language and attitudes survey of the region (Andersen and Johns 2005) similar to that conducted by Ó Giollagáin *et al.*, shows that the language has seen greater shift than Irish has in the Gaeltacht and that young people are sharply aware of the imminent possibility of language death in their community. Just like in the CLS, young people have very a positive attitude towards the language, but of the 15% of the population who are fluent Inuttit speakers, none are under ten years old and very few are under twenty. There is a strong desire among Labrador Inuit to revive their language, even among the young. Andersen and Johns contend that to succeed, language maintenance strategies must “rise from the bottom up” based on the renowned self-reliance of the local communities.

I am a youth here attending this conference and I need help sometimes when I speak in Inuktitut. Sometimes I understand what is being said in Inuktitut and sometimes I don't. I try really hard

to speak the language and I would like some help. I think it is very important to learn the language, especially for the youth. We all need to work together to help our fellow Inuit.

Comment recorded by Andersen and Johns at Torngâsok Cultural Centre 2001 (2005, p.197)

A number of initiatives have begun including a language nest, youth camps run by Inuit elders, a dedicated classroom for teaching the language (which is available for immersion from kindergarten to grade 3) in one of the regions secondary schools, oral competitions and a language learning software package aimed at beginners that was developed in collaboration with a commercial company.

The most challenging aspect of language revitalisation in Inuit schools has been the development of suitable resources for intermediate or advanced language learning (Dicker *et al.* 2009). A common complaint of teachers in local schools relates to a lack of suitable learning materials while some members of the local community feel that the schools could be doing more to support the language. Like many indigenous languages Inuttitut is a strongly oral language and while it can be heard on the radio and on television, “this type of media is not currently available to the public and schools for repeated listening” (Dicker *et al.* 2009, p.157). Much of the written resources that are available are unappealing to most readers as they are direct translations from English where the translator “will often translate every single concept in the order they are presented in English, even if those concepts and that order would not normally be found in Inuttitut” (Johns and Sherkina-Lieber 2012, p.70).

Johns’ past fieldwork as a linguist with the Labrador Inuit included the recording of fluent speakers of Inuttitut some of whom are now deceased. The recordings included interviews with elders about language use as well as stories about their youth. Her awareness of the problems in sourcing authentic language for language revitalization prompted her to reflect on both an opportunity “why not use the fieldwork materials for language learning?” and a challenge “how to make the best use of the stories for the community, without needing to spend a large amount of time or money?” (Dicker *et al.* 2009, p.157). Her solution to this challenge was to connect the work in preparing the material for use as learning resources for the local community with work that her institution would view as valuable in order to secure the funding to allow the project to proceed – “a story database with English translations and a morpheme gloss can benefit both the needs of the linguist and the community” (Dicker *et al.* 2009, p.158).

Her priority was the needs of the community and she stressed the importance of an early evaluation of a prototype database by members of the local community to ensure “that the story materials will actually be useful within the classroom” (ibid, p. 158). Some of the development work required data to be shared between database developers in Toronto and the locally-based researchers in Nunatsiavut, but fortunately there was Internet access of sufficient quality to enable this



collaboration to proceed. With time and budget cited as important factors in the project, it was of great benefit that the costs related to the electronic publication and distribution of language resources were much lower than that of traditional print-based materials and also far more efficient as further revisions are always possible after publication. Accessibility is also increased as the story database is available to all community members with Internet access (ibid, p.160).

Although the stories were transcribed into Inuttitut and English, there are characteristics of authentic digital audio resources that are particularly valuable to language acquisition – the richness and situatedness of listening to fluent speakers speaking in an unscripted manner are difficult to replicate in writing and digital audio clips are easy to play repeatedly – an important activity in a language classroom – although Dicker et al report that “many speakers Inuttitut find it unnatural to use language this way” (ibid, p. 159). In school, the children’s familiarity with technology scaffolds their use of using the story database. Feedback has been very positive to date. A distinctive characteristic of these resources that added to the authenticity and consequently the engagement for many of the learners was “that they are told and written by people who the students know or even are related to” (ibid, p. 165). This is unsurprising as the recordings were made In the same community as where the school is located.

In relation to the choice and design of software, one of the goals of the project was to “make a system that is as easy to use as possible, with little or no need for technical assistance after the initial set-up.” (Dicker *et al.* 2009, p.163). This was due to the awareness that the technical assistance in setting up the project would only be available for a limited amount of time and it was important that the community would be able to maintain the software themselves. A related goal was to keep the interface for entering data simple and efficient so that basic technical skills would enable a user to input and access data. Finally the two software applications that were chosen (MySQL and Ruby on Rails) are both free meaning that the system is more easily transferrable to other contexts, something that the project team were aware of – “We would like to provide a system that can be installed and easily adapted to a community’s needs by someone with a basic knowledge of web design” (ibid, p.163).

The main challenges faced by the Story Database Project were the limited technical facilities in the local school. The school has a lab of sixteen older networked computers. The database is accessed across the network and only five or six students could access the database before the system crashed causing much frustration.

In assessing the project, Hermes *et al.* (2016, p. 278) compare the approach taken in developing the Story Database project of repurposing existing materials for teaching purposes to other “more costly and unsustainable high-level technology-dependent” approaches. They conclude that local initiatives

that appropriate “free or commonly available software: PowerPoint, Prezi, shadow puppets, flashcards, and animated books with options to enter voice, to name but a few” (p. 278) are far more cost effective.

### **3.8.2. Knowledge Producing Schools**

The following synopsis is based on the work of Chris Bigum and other researchers who have worked with him in developing this approach in disadvantaged schools in Australia (Bigum 2002, 2003; Rowan and Bigum 2010). Bigum has been a longstanding critic of the continual failure of education systems across the world to transform their pedagogical approaches in response to an entirely different social order in the information age (Bigum 2012). He claims that education systems tend to allow technologies into schools if they can be ‘domesticated’ – tamed into delivering traditional transmission-based pedagogies. The technologies that can’t be tamed (e.g. mobile phone) tend to be banned.

The Knowledge Producing Schools (KPS) model that he proposes employs an emancipatory pedagogical model based on students choosing to work on projects that are of intrinsic value to their local communities. It has similarities with the Funds of Knowledge approach (Gonzalez et al., 2005) described earlier in the chapter in that students are encouraged to draw on the expertise in their families and elsewhere in the community to support KPS projects, but its starting point is the interest of the students in making a difference to their community rather than the funds of knowledge in the home. Emphasis is also placed on acquiring “21<sup>st</sup> century learning skills” with the model suggesting paying constant attention to five key questions:

- Are students positioned as the producers or the consumers of knowledge?
- Are students positioned as active or passive?
- Are students provided with a real world audience?
- Do all students and all forms of knowledge have a chance to be valued?
- Does this audience facilitate their connection to a broader community?

(Rowan and Bigum 2010, p.195)

The KPS approach encourages students to participate in real-world tasks of knowledge production. These types of project involve students working “on authentic tasks which have relevance and appeal to a wider community” (Rowan and Bigum 2010, p.193) implying an understanding of authenticity as a relative quality, the strength of which is determined by the level of the learners’ connections with the resources or task (Shaffer and Resnick 1999; Hoadley and Van Haneghan 2012; Rost 2013). Thus in the KPS model “students are routinely positioned as the source of new knowledge: knowledge that has relevance to the students themselves” (Rowan and Bigum 2010, p.193).

Connecting students’ project work with the requirements of their local community also provides them with an authentic audience with a genuine interest in the project and its outcomes meaning that

feedback is provided “by people with a genuine stake in the knowledge that is produced” (ibid, p.193). This type of model requires teachers to manage a partnership with the local community, something that is a statutory requirement (Rialtas na hÉireann 1998) and is already in place in most Gaeltacht schools.

Examples of KPS projects include a school in a gold-mining town in Australia with a high population of socio-economically disadvantaged students. Working with a partner school well-versed in the KPS approach, the students scripted, shot and edited and produced a film of “interviews with local ‘characters’ of the town who knew a good deal about local history and events”. This was used as content for touch screen tourist-information kiosks which had been bought by the local town council. The town council commissioned a private company to produce alternative resources for the kiosks as they were sceptical of the ability of the school to produce resources of sufficient quality. Despite this, the student work proved to be superior and was what was used in the kiosks.

The logic underpinning this example is that students in poor, isolated or disadvantaged areas do not need to be conceptualised in terms of what they don’t have. The students in this school did have plenty of skills: they had a connection to their town, and they produced an innovative product for a highly appreciative audience. Their skills were valued, they gained confidence as learners, and saw themselves no longer as the passive consumers of a curriculum written by ‘experts’ or people who knew better.

(Rowan and Bigum 2010).

In another project students created a History Tour of their school which was researched, written and produced by students for delivery on iPods. The students contacted a number of elderly former pupils of the school who agreed to be interviewed for the tour. They prepared questions, conducted the interviews and recorded them on video. Their research and extracts from the interviews were used to produce a guide book and for the audio script on the iPods. Other projects that different schools have completed include a set of anti-bullying resources which were created in response to a class incident and a documentary about the history of a local cattle market which was subsequently used by the local council to promote the region at an international beef expo.

Rowan and Bigum distinguish KPS projects which tend to have a much wider appeal from the standard “fridge door assignments” which might have an audience of two or three dedicated parents. They also suggest that student engagement and student achievement are improved because:

... regardless of whether there is technology to be used, or an individual’s passion to be responded to, all participants have sustained opportunities to develop and demonstrate expertise to real audiences.

(Rowan and Bigum 2010, p.200)

Finally they outline how the main elements of the pedagogical perspective outlined in this literature review is instantiated in the KPS approach:

The strength of the KPS mindset is that it allows educators to recognise and respond to the specific circumstances – the specific communities, experts, needs and desires – of their local environment. What binds the diverse activities that result together, however, is the unrelenting commitment to finding spaces to transform the relationships between children and teachers; children and knowledge; children and their community. And most important of all, between children and success. Within a knowledge-producing schools project children – all children – are not taught how to be good at ‘doing school’. Rather, and most importantly of all, they learn and are supported, by the community they are so very much a part of, to be good at doing life.

(Rowan and Bigum 2010, p.200)

### **3.8.3. The Oral History Project – Identity Texts**

This is a synopsis of an identity text project as described in Cummins et al (2007 pp.148-166). It bears many similarities to the design goals of the current research. The oral history project was a class project in a school in California where a socially-conscious history teacher, Mr. Green, was concerned about the children in his class’s lack of interest in their futures. The majority of the twelve year olds in his class were of Latino origin with the remainder of various ethnic origins. He set up the oral history project “to design their instruction in identity-affirming ways” (p. 150). The project involved the children interviewing family members about past events in their lives using a range of technologies. These included audio recorders (which they could bring home), a video camera (for use in the classroom) and regular use of the computer lab to view similar reports online and to write up their own reports.

The teacher wanted to increase learner agency and disciplinary skills by enabling them to ‘do’ history rather than just read about it. The children documented stories covering themes that are often excluded from mainstream resources placing “themselves and their families at the centre of the curriculum” (p. 151). The teacher assisted them in preparing to interview family members by helping them draft interview questions and ensuring that they knew how to use the audio recorders properly. There was a mixed reaction from the students to the use of the recorders with some students energised by the repeated listening to their recordings as they transcribed them. Some students found the transcription boring with others reporting the fact that some family members spoke more freely when not being recorded. The teacher had to devise solutions to these issues as they arose but did this through a process of collaboration with the students.

The students discovered things about their families that triggered discussions around topics that would not be part of a mainstream curriculum – about human relationships and about power dynamics

in society – “the challenges often faced by immigrant, indigenous, or other minority groups” (p. 159). The teacher helped the students to become aware of critical discourses and gain an awareness of why some stories in history are privileged over others. Feedback from some of his students, who were a little uncomfortable researching about their family history, prompted the teacher to make the oral history project part of the school’s official curriculum. Once it became an official assignment, they felt empowered to participate fully.

The project culminated in a class presentation which the teacher recorded. He created a class video that showed the children working in their groups on their projects and then the presentation. The children added native-language voice-overs for the benefit of their parents. Their parents were then invited into the school to view the movie. The parents were amazed at what they saw and showed immense pride in what their children had achieved.

After the completion of the project, the teacher reported an improvement in the children’s academic skills, their self-confidence and their overall engagement in school. He also reported a transformation in class discussions with the children being far more active, showing increased curiosity and asking probing questions. He noticed that they found it easier to relate accounts from history with their own personal stories and compare and contrast different historical periods (key skills required when taking advanced history exams). The project had provided them “with a mental framework for approaching the study of unfamiliar historical periods” (p. 164).

Cummins et al. (2007) suggest that the project illustrates “a more active approach to teaching history in which students are enabled to engage in active inquiry and build on the funds of knowledge in their families and communities” (p.157).

#### **3.8.4. Synthesizing The Examples**

All three examples illustrate that many initiatives to support marginalised communities are bottom-up initiatives that are inspired by activism and organised by committed individuals or groups. Each initiative harnesses a transformative and emancipatory pedagogical framework where the instigators wanted the outcomes of their initiatives to be of intrinsic value to their local communities and even beyond. Both the Knowledge Producing Schools approach and Identity Texts are templates for projects (often school-based) that encourage active learning, affective development and knowledge building. KPSes create products of value for local communities creating positive affective feedback for the participants from the community, while Identity Texts start with affirmation of self through the creation of Identity Texts which creates positive affective feedback from loved ones.

The Inuttitut language revitalisation project identifies a lack of suitable language learning resources as a major stumbling block to achieving effective revitalisation and stresses the importance

of using authentic resources for this purpose, criticising the formulaic and often rehearsed resources that are often produced in many second language learning contexts. It emphasises the importance of community involvement in the design of the project but still took a relatively top-down approach to community collaboration – had community feedback on an early prototype of the database been negative “the entire project would have to be modified or perhaps even abandoned” (Dicker *et al.* 2009, p.158). The identity texts and KPS approaches tend to be more bottom-up, with the resources being generated by the learners themselves. This would be challenging in the case of Inuttitut due to the dearth of speakers available to contribute to a bottom-up approach. It would be still possible, though, to use a more active pedagogy for the listening tasks than the passive use of the software reported (Dicker *et al.* 2009).

The Inuttitut project shows the positive impact that archival collections can have on individuals and on local communities. It is noteworthy in the context of this thesis that many of the learners enjoyed listening so much to the recordings because they identified a personal connection with them. This emphasizes the importance of relevant input in language learning and that the authenticity of a learning resource increases the more that a learner can identify with it (Rost 2013). The fact that it is an audio archive is also of great benefit for language learning. Many digital archives of indigenous languages with few or no remaining speakers are only available in written form which makes learning or re-learning the language (and therefore revitalization) all the more challenging (Hinton 2001).

There are many similarities between the Story Database and the Raidió na Gaeltachta archive – both are audio archives of languages whose futures as community languages are in grave danger. The audio in both collections are authentic and particularly so for the language learners in Nunatsiavut as the archive was recorded in their local area and they felt a particular resonance when hearing the voices of people they knew or were related to. The iTunesU collection which is being used as the collection of rich audio resources for language development in this thesis is also authentic but would not have the immediacy of there being a personal connection between speaker and listener as the collection covers a number of geographical areas and the three main dialects.

One challenge for the Story Database Project was the reluctance of some of the learners to repeatedly listen to the same audio clip. This is something that has been addressed in the design of the intervention in the thesis which requires learners to remix authentic audio clips with images. The need to ensure that the transition between images is synchronised with the audio narrative requires the learner to listen and re-listen to the audio in a synchronisation cycle (Chapter 5, Figure 22).

Another challenge to the project related to the limited technological infrastructure in the local school. This is a familiar phenomenon to me based on my work in Gaeltacht schools. A simple piece of

technology like an audio splitter (Chapter 5, Section 5.4.2.1) would allow collaborative listening to occur in the Inuit school enabling much greater numbers of students to access the material simultaneously using a more effective pedagogical model.

In relation to striking a balance between community needs (producing resources quickly for language learning) and an academic/linguistic requirement (producing corpora for language documentation), the Story Database team maintained that in order for the project to receive the backing from its supporting institution, the database needed to be both useful to linguistic scholars and to language learners in the local community.

Issues such as keeping costs to a minimum become very important in these cases. Alana Johns (the linguist from the university) realised that her linguistic data could be re-purposed for language learning and was able to persuade her institution to support this initiative by developing a knowledge base that was useful to both academics and to the community in Nunatsiavut. The costs were also kept low by the vast savings that can be made through online publishing. The added features of increased accessibility and updatability are also of huge benefit to both the local and the academic communities.

Many universities explicitly state their responsibilities to serving their local communities, so partnerships such as this could and should be replicated in other contexts. Many universities curate and maintain important cultural archives on behalf of the state. The information society and its technologies have revolutionised how the contents of archives can be curated and made available online. In Ireland, this is gradually being done with important State collections e.g. the Census of Ireland 1901/1911<sup>19</sup>, the Irish Military Archive<sup>20</sup>, etc.

### **3.9. Summary**

This chapter has outlined a perspective on learning that views it as situated, active, collaborative and transformative. It has shown how this perspective has influenced language and literacy research and how rapid developments in technology have seen texts re-interpreted as multimodal artefacts. Efforts to incorporate these developments in schools is starting to be recognised in official policy documents but school-based practices are still often out of sync with children's out-of-school multimodal and multitasking lives. Web 2.0 and cloud-based technologies can bridge the key home-school-community divide to support activities that promote language revitalisation activities across these domains involving children's families in the process. Digital language archives can play an important role in providing authentic learning resources to such an approach. Bottom-up community-

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<sup>19</sup> <http://www.census.nationalarchives.ie/>

<sup>20</sup> <http://www.militaryarchives.ie>

centred approaches to education can enable such developments to become a reality. These have the greatest chance of success if they follow the types of active approaches to learning outlined in this chapter.



## **Chapter 4 – Methodology**

### **4.1. Introduction**

This chapter outlines the nature of design-based research and how it was implemented in the research. The various forms of data collection are then discussed. Video recording of classroom interaction was the primary method of collection. Three cycles of analysis were performed on multimodal transcriptions of the video using a variant of grounded theory. Initial codes in the first cycle helped identify more general categories in the second. A comprehensive diagram was then developed using a visual concept mapping tool to help identify the main categories and the relationships between them. The narratives charting the three phases of the intervention in both schools (chapters 6, 7 and 8) were generated from this diagram. The final section discusses the ethical considerations taken.

#### **4.1.1. Research Schedule**

Table 6 illustrates the research schedule showing the dates, venues and details relating to the research activities and data collection over the course of the field work.

Phase	Title	Dates	Venue(s)	Details
0a	Scoping the Field: iTunesU Project	Feb. 2011 – Jun. 2013	Various schools in three Gaeltacht areas	This researcher worked on a COGG iTunesU project to make audio recordings from the Raidió na Gaeltachta archive available to schools. This involved collaborating with teachers in their selection and in developing teaching guidelines for their use. Focus groups (audio recorded) and a series of workshops across Gaeltacht areas were carried out. Field notes were kept over this period. This work informed the design requirements (following McKenney and Reeves 2013) of this research, (outlined in Section 5.3)
0b	Literature Review	Nov. 2009 – Nov. 2013		<ul style="list-style-type: none"> <li>Analysis of the problem affecting children's language development in Gaeltacht schools, identified in the literature (Outlined in Chapter 2)</li> <li>Analysis of theory for a solution to support children's language development in Gaeltacht schools (Outlined in Chapter 3)</li> <li>This work helped to inform the Conjecture Map (following Sandoval 2014) specifying the overall design of the research (outlined in Section 5.4)</li> </ul>
1a	Preliminary Prototype of the Design	Dec 2013	Scoil Chluain Locha	<ul style="list-style-type: none"> <li>3 x Preliminary 2 hour sessions video recorded</li> <li>debriefing session with teacher after each session video recorded</li> <li>personal reflection after each session audio recorded</li> <li>interview at end of phase video recorded</li> </ul>
1b	Exploratory Process	Jan. – Feb. 2014	Scoil Chluain Locha	<ul style="list-style-type: none"> <li>7 x Exploratory 2 hour sessions video recorded</li> <li>debriefing session with teacher after each session video recorded</li> <li>personal reflection after each session audio recorded</li> <li>interview with teacher at end of phase video recorded</li> <li>focus group with children at end of phase video recorded</li> </ul>
2	Refined Process	Feb. – Mar. 2014	Scoil Chluain Locha	<ul style="list-style-type: none"> <li>6 x refined process 2 hour sessions video recorded</li> <li>debriefing session with teacher after each session</li> <li>personal reflection after each session audio recorded</li> <li>interview with teacher at end of phase video recorded</li> <li>focus group with children at end of phase video recorded</li> <li>celebration of children's work in local community centre video recorded</li> </ul>
3	Further Refinements in a New Context	Apr. – Jun. 2014	Scoil Bharr na Leice	<ul style="list-style-type: none"> <li>7 x further refined process 2 hour sessions video recorded</li> <li>debriefing session with teacher after each session video recorded</li> <li>personal reflection after each session audio recorded</li> <li>interview with teacher at end of phase video recorded</li> <li>focus group with children at end of phase video recorded</li> <li>celebration of children's work in school video recorded</li> </ul>

**Table 6 - Research Schedule**

## **4.2. Design Based Research**

Design-based research (DBR) has its origins in two research papers – one by Allan Collins (1992) where the term 'design experiments' originated and the other by Ann Brown which made the concept famous. One of the most oft-cited quotes from this paper is her high-level goal for design experiments:

to transform grade-school classrooms from work sites where students perform assigned tasks under the management of teachers into communities of learning and interpretation, where students are given significant opportunity to take charge of their own learning.

(Brown 1992, p.141)

The term design-based research (Hoadley 2002; Design-Based Research Collective 2003; Barab and Squire 2004) is not the only term used to describe this methodology. Other terms include design studies (Shavelson *et al.* 2003) and (educational) design research (Van den Akker *et al.* 2006a; McKenney and Reeves 2013; Sandoval 2014). Many researchers in the learning sciences and computer-supported collaborative learning (CSCL) in particular have turned to this methodology as they became disenchanted with research methods that they viewed as being too distant from the complex naturalistic settings usually encountered in educational practice (Hoadley 2002; Design-Based Research Collective 2003) – “the experimental methodology that we inherited from psychology made it very difficult to study what’s happening in classrooms where the situation is fairly complicated” (Collins 2006). The burgeoning interest in DBR led to three noted journals publishing special editions in the early part of the last decade. These were *The Educational Researcher* (vol. 32, no. 1), *The Educational Psychologist* (vol. 39, no. 4) and *The Journal of the Learning Sciences* (vol. 13, no. 1). Many books have been published and conferences and graduate courses taken place on the subject since.

The following are a number of key definitions of DBR in the literature:

Design-based research is a research methodology aimed to improve educational practices through systematic, flexible, and iterative review, analysis, design, development, and implementation, based upon collaboration among researchers and practitioners in real-world settings, and leading to design principles or theories.

(Wang and Hannafin 2005, p.2)

Design-based researchers’ innovations embody specific theoretical claims about teaching and learning, and help us understand the relationships among educational theory, designed artifact, and practice.

(Design-Based Research Collective 2003, p.5)

Such research, based strongly on prior research and theory and carried out in educational settings, seeks to trace the evolution of learning in complex messy classrooms and schools, test and build theories of teaching and learning, and produce instructional tools that survive the challenges of everyday practice.

(Shavelson *et al.* 2003, p.25)

These definitions comprehensively cover the field's understanding of what DBR is. It has twin goals – improving educational practice and advancing pedagogical theory. It attempts to achieve both goals simultaneously by designing innovations that are grounded in theory and in prior research. These are usually implemented in natural educational environments, or as Shavelson *et al.* characterise them above, “complex messy classrooms”. DBR is an iterative methodology with each iteration consisting of the design of a pedagogical intervention that is grounded in theory to solve a complex educational problem with its implementation and evaluation being in some naturalistic context such as a classroom (Figure 6). The key focus during the implementation of DBR is “progressive refinement” of both the design and the theory (Collins *et al.* 2004; Engle *et al.* 2007)

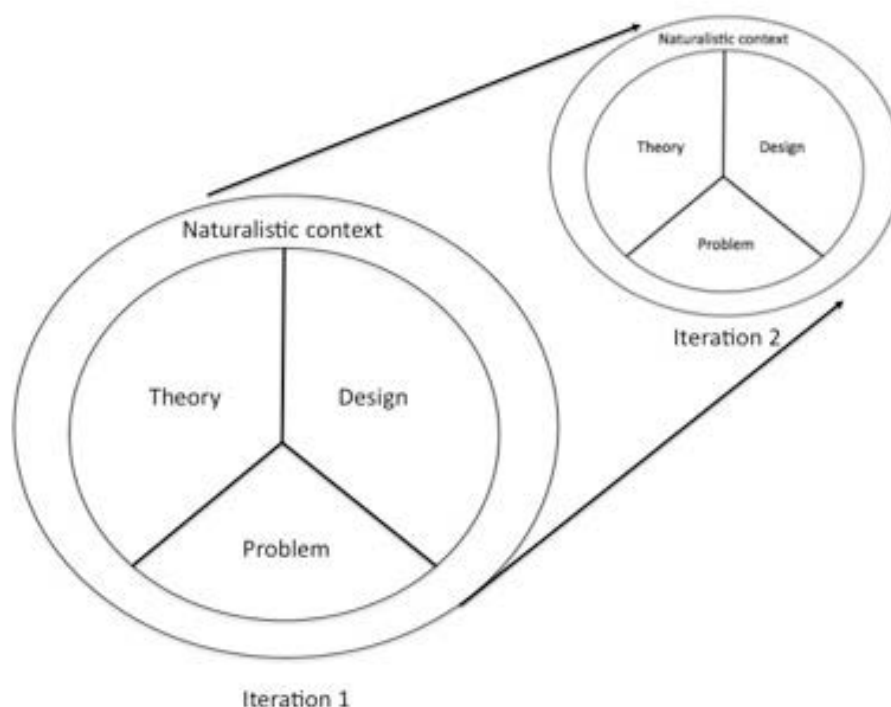


Figure 6 - DBR Iterations (reprinted from (Barab 2006) ) <sup>21</sup>

#### 4.2.1. The Twin Goals of DBR

The first of DBR's twin goals – the applied goal of improving educational practice – is usually in the form of an intervention designed to solve a complex educational problem. Some authors suggest that DBR studies should produce one or more artefacts that can be reused and adapted by others (Edelson 2002; Design-Based Research Collective 2003; Kelly 2004) – “otherwise, the fact that the study used an iterative process simply characterizes the procedures that were followed” (Kelly 2004, p.116).

<sup>21</sup> Permission to reproduce this image has been granted by the author

The second goal of DBR - the goal of advancing pedagogical theory – is to identify an initial set of design conjectures (Sandoval 2004; Gravemeijer and Cobb 2006; Sandoval 2014), design propositions (McKenney and Reeves 2013) or design principles (Hoadley 2002; Wang and Hannafin 2005; McKenney *et al.* 2006; Reeves 2006) and embody them in an intervention which is then developed over time through its iterative (re)deployment and (re)design. It is not simply to report on the successful deployment of an intervention in a particular classroom, but rather to test an intervention which has been designed based on sound theoretical principles in a naturalistic context (Barab and Squire 2004). Design conjectures are often confined to the local context and their value is assessed on how they can inform and improve local practice (Hoadley 2002). Gravemeijer and Cobb term the theoretical outcome of DBR as a *local instruction theory* which they define as “the overall process of learning and the instructional activities that are designed to foster the mental activities that constitute the long-term process” (Gravemeijer and Cobb 2006, p.58).

Barab (2014) warns that theory developed around a single case may be insufficient highlighting the difference between outputs and outcomes – outputs being the immediate, tangible results of implementing an intervention in a particular context but outcomes being the longer term impact of an intervention. He suggests that although the reporting of outputs is a valuable part of DBR, the true value of DBR lies in identifying the theoretical conjectures that led to that output. It is here “where one transforms the local story into an argument that has generalizable value to others who care about the underlying lessons even if not the particular case” (Barab 2014, p.162).

#### **4.2.2. Nature of DBR problems**

It is important to stress that DBR is not suitable for all types of educational research. DBR is particularly suited to open-ended, complex problems (Brown 1992; Collins 1992; Edelson 2002) or ‘wicked’ (Reeves and McKenney 2013) problems that “describe problems that share the features of open problems, but that also engage elements that make their solution frustrating or potentially unattainable” (Kelly 2013a, p.138). Kelly suggests that DBR is recommended when one or more of the following conditions apply in educational settings:

- When the content knowledge to be learned is new or being discovered even by the experts.
- When how to teach the content is unclear: pedagogical content knowledge is poor.
- When the instructional materials are poor or not available.
- When the teachers' knowledge and skills are unsatisfactory.
- When the educational researchers' knowledge of the content and instructional strategies or instructional materials are poor.
- When complex societal, policy or political factors may negatively affect progress.

(Kelly 2013, p.138)

Examples of when these conditions apply include supporting second language learning and computer-assisted language learning (CALL) in particular (Reeves and McKenney 2013), teaching science using virtual worlds (Barab *et al.* 2005), early literacy programmes (McKenney *et al.* 2012), using novel methods to teach statistics and supporting language revitalization using technology (Hermes and King (2013).

Hermes and King claim, as I do, that "DBR, critically reconfigured, may serve as a productive methodology to support ongoing efforts for language revitalization" (2013, p. 384). They claim that their questions of "What kinds of design decisions are essential to revitalization efforts that would bring language back into the home? And what kind of process is most beneficial in creating these materials?" integrate well with the iterative approach of "design, implementation, analysis, redesign, and reimplementation" (2013, p. 384).

There is also a strong correlation between each of Kelly's criteria for DBR and the types of issues faced by Gaeltacht teachers on a daily basis (as discussed in Chapter 2). Parallels can be drawn between the first three criteria and the lack of development to date of suitable policies, curricula and resources for an education system that is fit for purpose in the Gaeltacht. The lack of suitable training courses for new teachers and continuing professional development opportunities for existing teachers highlights the relevance of the fourth and fifth criteria. Finally, the overall approach of the State towards the maintenance of the Gaeltacht as an Irish-speaking community highlights the relevance of the final criterion to the problem that this research is attempting to tackle. DBR, therefore, was a suitable methodological choice for this research.

#### **4.2.3. Steps in Design-Based Research**

McKenney and Reeves (2013, p.77) developed a "generic model for design research in education" based on their analysis of previous work in developing DBR as a research methodology. The model portrays a process which supports the well-recognised characteristics of being "theoretically oriented, interventionist, collaborative, responsively grounded, and iterative" (2013, p.76).

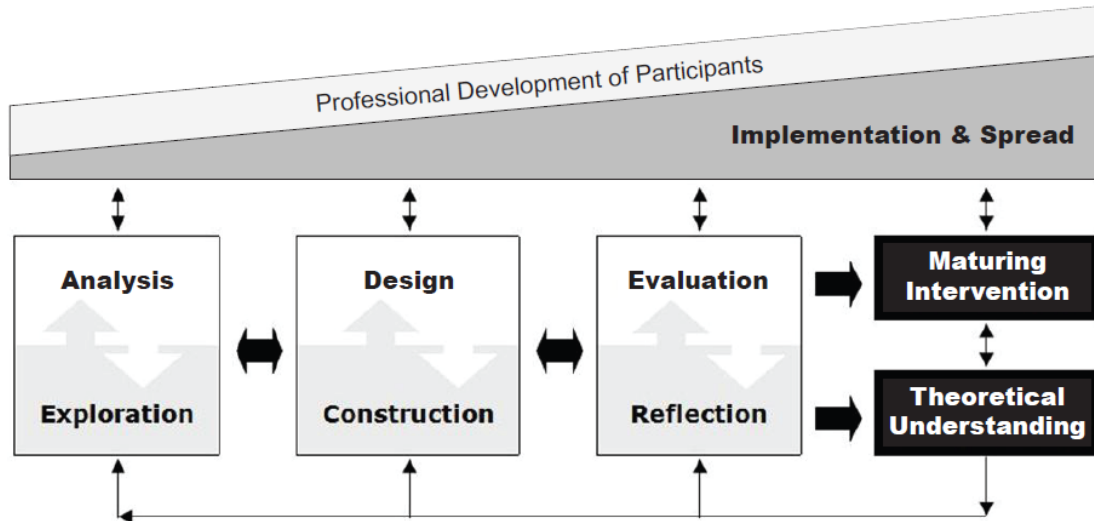


Figure 7 - Generic Model for Design Research (Reeves and McKenney 2013, p.76) <sup>22</sup>

They identified three core phases within a flexible, iterative structure. These phases, represented by the squares in the diagram, are *Analysis/Exploration*, *Design/Construction* and *Evaluation/Reflection*. Each of these phases is seen as being flexible and capable of contributing to one another (represented by the arrows between them). Each iteration of these phases leads to the twin goals of a gradually maturing intervention and to a growing theoretical understanding. These goals can then feed back into the design of further iterations of the intervention.

The upper part of the diagram indicates that all elements of DBR are integrated with real-world contexts from the outset and that participation in the intervention should lead to the professional development of all of the participants (something that Reeves and McKenney suggest is a third outcome of DBR). It also illustrates that *Implementation & Spread* are key components of DBR, something that researchers and practitioners should be thinking about from the outset of the research and that these typically increase over the course of an intervention. The model is broadly similar to others showing that DBR is a cyclical process (Shavelson *et al.* 2003; Gravemeijer and Cobb 2006).

Gravemeijer and Cobb (2006) suggest that the preliminary phase of DBR should establish a “local instructional theory” that can be developed over the course of the intervention. A researcher (or team) should start, they suggest, with establishing the learning goals of the intervention and then extrapolate back from these a conjectured local instruction theory which consists of a series of conjectures relating to how learning might happen and how to support that process. They also describe the process of conducting DBR as a cyclic process “of (re)designing, and testing instructional activities

<sup>22</sup> Permission to reproduce this image has been granted by the authors

and other aspects of the design" (2006, p.24). Figure 8 illustrates a series of designed daily activities (mini-cycles) which are part of a larger phase of the design (macro-cycles).

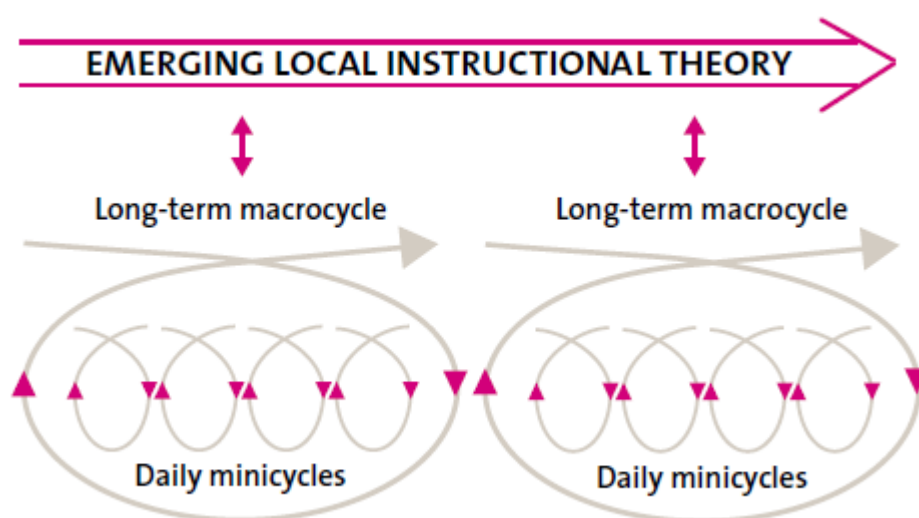


Figure 8 – Micro- and macro- design cycles in the development of a Local Instruction Theory (reprinted from Gravemeijer and Cobb, 2006, p.29) <sup>23</sup>

They describe how the initial conjectures of the local instructional theory try to envision the type of discourse and learning that might occur in the classroom as a result of the designed learning activities. The researcher/team then analyses what actually happens in the classroom and as a result may, in collaboration with the teacher, tweak the design for future sessions as well as noting the validity of the conjectures underlying the design. There is a reflexive relation between the development of the local instruction theory and the practical work of implementing the intervention in the classroom (Gravemeijer and Cobb 2006). The initial design phase can also include the deployment of a prototype of the design – “since it is virtually impossible to specify every single detail ahead of time, a substantial number of design decisions will be made during actual construction” (McKenney and Reeves 2013, p.125).

Sandoval (2014), in his appraisal of theoretical models describing the process of DBR (Bannan-Ritland 2003; Collins *et al.* 2004; Barab 2006; Gravemeijer and Cobb 2006; McKenney and Reeves 2013), argues that while these models are quite helpful “in articulating the role that theory has to play in instructional design and describing how classroom experimentation (in the broad sense of that word) can lead to theoretical refinement”, at the same time “the components of a design are not enumerated in their representations of research cycles, nor are the specific conjectures or their relations to designed

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elements” (2014, p.21). He claims that his proposed model of Conjecture Mapping (Sandoval 2004, 2014) helps to clarify the connection between theoretical conjectures and design-decisions.

#### **4.2.4. Conjecture Maps**

The term conjecture is in common use in the DBR literature (Shavelson *et al.* 2003; Gravemeijer and Cobb 2006; McKenney and Reeves 2013) to denote proposals on how theory might be manifested in concrete practices with the intention of achieving specific outcomes. Barab (2014, p.162) suggests that while DBR “is a powerful methodological framework for producing usable theory that can be implemented to generate enhanced outputs and outcomes”, these outcomes will be of limited value “unless the demonstrated value can be explained through some theoretical conjecture about what caused this change.”

Sandoval uses the term conjecture “to connote the usually highly provisional nature of the ideas we have about how to design a learning environment at the start of a design research project” (Sandoval 2014, p.22). He proposes translating conjectures to a graphical form in the form of a Conjecture Map (CM will be used from this point forth) which captures “the hypothesized learning trajectory” (p.24) and which he defines as “a means of specifying theoretically salient features of a learning environment design and mapping out how they are predicted to work together to produce desired outcomes” (p.19).

CMs are usually prepared in advance of design, but following Wozniak (Wozniak 2015) I have applied the CM approach retrospectively. Although an earlier paper of Sandoval’s (2004) gave some specifics of CMs, it is really his 2014 paper that fully fleshes out the approach. Retrospective analysis is a fundamental aspect of DBR (Cobb and Gravemeijer 2006) and I have found CMs to be an extremely useful tool with which to illustrate how my conjectures about language development and learning were embodied in the resources and activities of the intervention. The core of Chapter 5 is structured around a CM which graphically illustrates the overall design of the intervention and Chapter 9 illustrates an amended CM showing the refinements that were made to the design over the course of its three phases (iterations). The use of CMs for illustrative purposes facilitates a comparative discussion across all three phases of the implementation.

Figure 9 illustrates a slightly adapted version of Sandoval’s model incorporating two modifications which are discussed at the end of this section. There are six key features to a CM:

- The high-level conjecture(s) usually equate to the overall aims of the research.
- These conjectures become embodied within the various elements of a specific design.
- This embodiment is expected to manifest itself in mediating processes.

- The mediating processes are expected to produce the desired outcomes.
- The design conjectures specify how the embodied elements of the design are expected to generate the mediating processes
- The theoretical conjectures specify how the mediating processes are expected to generate the desired outcomes

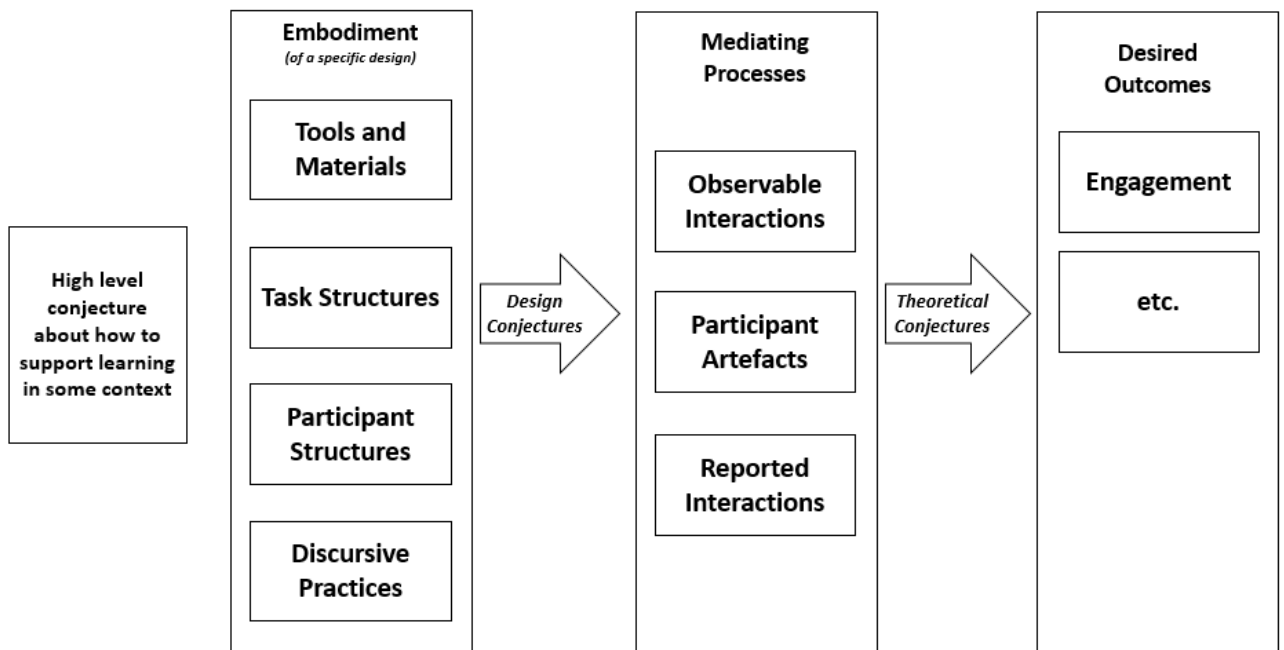


Figure 9 - Conjecture Map outline (adapted from Sandoval, 2014, p.21)

Sandoval (2014) defines a high level conjecture as “sort of theoretically principled idea of how to support some desired form of learning, articulated in general terms and at too high a level to determine design” (p. 22). The *embodiment* section of a CM is an instantiation of the high-level conjecture in four types of element in the learning environment:

- **Tools and Materials:** the learning and teaching resources in the environment (digital, paper-based, physical artefacts, etc.)
- **Task Structures:** specify the structure, goals and learning criteria of the activities that the learners are asked to participate in
- **Participant Structures:** specify how the participants (usually teachers and learners) are expected to participate in tasks – what roles and responsibilities do they have and how is control of the task managed?
- **Discursive Practices:** specify the desired nature of communication between participants in the learning environment

Although all four elements may not be present in every design, those that are expected to “embody conjectures about learning in multiple, interacting ways” and “are all intended to work together to achieve a design” (p.22). Conjecture maps are influenced by sociocultural theories of learning and in this context, Sandoval suggests that the “use of particular tools for specific tasks enacted in specific ways is intended to produce certain kinds of activity and interaction that are hypothesized to produce intended outcomes” (p. 23). So, rather than directly producing outcomes, the use of tools produces mediating processes and if they are produced as was predicted, then it is expected that the desired outcomes will be evident in them. Sandoval advises that CMs should articulate “what desired outcomes will look like and how they might be observed” (p.23). Sandoval calls the conjectures that predict the nature of the mediating process to be produced from the embodied design, *design conjectures* and the conjectures that predict the nature of the desired outcomes to be produced from the mediating processes, *theoretical conjectures*. He distinguishes between two types of conjecture in this context:

Design conjectures take the general form “if learners engage in this activity (task + participant) structure with these tools, through this discursive practice, then this mediating process will emerge.” ...  
... theoretical conjectures in a conjecture map take the general form “if this mediating process occurs it will lead to this outcome.”

(Sandoval 2014, p.24)

The two types of mediating process that Sandoval identifies are observable interactions and participant artefacts. Analysis of the observable actions of participants “can directly show how embodied elements of a design mediate participants’ interaction, and thus learning” (p. 23). The easiest way to be able to analyse those interactions in detail is to video-record the sessions, which was done in the case of this research (see Section 4.3). The second method of analysing the mediating processes is through the analysis of the artefacts that are produced as part of the intervention – “Such artifacts are proxies for learning processes; they indicate the extent to which learners are engaged in the sort of activity and thinking hypothesized to matter”. The artefacts were analysed for the existence of particular phenomena that would show evidence of the desired outcomes (described in Section 5.4.3.2).

This research has found Sandoval’s model of conjecture mapping to be extremely useful in clarifying the link between theory, design and practice. Sandoval (2014) encourages researchers to employ his model in a flexible manner. In this regard, two adaptations have been made to suit the particular needs of the research. The first is the proposition of a third mediating process termed “reported interactions”. This distinction is worthy of attention and analysis in its own right, as the research is interested in whether activities in the classroom are promoting learning activities outside

the classroom, as reported by the children or teacher. It would be expected that out-of-school tools and/or practices would be embodied in one or more elements of the design (e.g. tools/materials that enable out-of-school activities and/or task/participant structures and/or discursive practices that encourage such activities). The researcher(s) and teacher(s) would then be expected to investigate the nature of any out-of-school practices predicated by the intervention in the classroom. This could be done simply by asking the children about this on a regular basis. Generic questions such as: “Have they been engaged in any out-of-school practices related to the designed intervention in school? What is the nature of those practices? Has anyone else been involved? Who?” as well as research-specific questions can generate reported interactions worthy of analysis in this type of research. The teacher should also be alert for opportunities to talk to parents or other family members about their children’s out-of-school practices related to the intervention. This will increase parental awareness and may also encourage parental involvement in the intervention. It could be argued that this would simply be evident in observable interactions, but I would argue that by explicitly categorising “reported interactions”, it draws attention to their importance in this type of research. It should be noted that reported interactions may not be as reliable as directly observable data and that efforts should be made to triangulate them with observable interactions and/or through the analysis of their resultant artefacts.

The second adaptation is not to indicate very specific design conjectures (as Sandoval 2014 does). I have used a single block arrow to indicate that it is through the complex combination of the embodied elements of the design that the mediating processes emerge. This avoids explicitly drawing individual arrows between specific elements of embodiment and specific mediating processes. The reason for this is that I am employing conjecture maps retrospectively. Making conjectures about direct cause and effect between phenomena would only make sense in advance of the design being implemented. Having said that, I feel that Sandoval’s assumption that individual design elements can be linked with specific mediating processes and subsequently these with desired outcomes, is possibly too deterministic, so I would make the argument for the use of block arrows irrespective of the mapping being retrospective or not.

#### **4.2.5. Design Requirements**

The Conjecture Map that has been generated to illuminate the initial design of the intervention (in chapter 5, section 5.4) draws primarily on the literature relating to the problem (chapter 2) and the potential solution (chapter 3). There are, however, other more context-specific factors that also much be taken into account in the design of a pedagogical intervention (Hoadley 2002; Gravemeijer and Cobb 2006). This is particularly true if the intervention is aimed at specific educational contexts (such as primary schools in the Gaeltacht). Hoadley (2002, p.3) in discussing a DBR project he worked on

emphasizes the importance of “designing activity structures that made sense in the local context” and that without analysing local contextual factors, the design team “might never have realized what conditions of use needed to be met” nor could they “proliferate those conditions as a theme and variations in a wide variety of contexts”. McKenney and Reeves' (2013) call these factors “design requirements”. In the case of my own research, these also contributed to the overall design of the intervention (and are specified in section 5.3).

McKenney and Reeves' (2013) suggest that design requirements are important context-based criteria, “often constraints, which frame design choices” (p. 104), that are closely tied to the long-range goal of the research. They also state that design requirements, unlike design propositions/conjectures, tend not to change much over the course of an intervention. Field-based activities during the initial *Analysis/Exploration* such as site visits, professional meetings and networking often contribute to the identification of design requirements. Theory, they suggest, plays a secondary role when determining design requirements. Design requirements “specify criteria the intervention should meet, and/or conditions under which it must function” (2013, p.112). They distinguish these from design propositions (essentially equivalent to Sandoval’s design conjectures) which are primarily theory-based criteria informed by literature review and craft wisdom. According to McKenney and Reeves (2013, p. 120), “the design requirements give more guidance on what is to be accomplished in a specific setting, whereas the design propositions inform how that can be done and why.” Therefore, design requirements are also explicitly noted in the initial design phase of the research intervention.

#### **4.2.6. Collaborative Nature of DBR**

DBR views practitioners (and often learners) as collaborators (Barab and Squire 2004; Penuel *et al.* 2016) and co-designers (Kelly 2006; McKenney *et al.* 2012) in the design of an intervention. Their participation is valued at all stages of the research process: in initial analysis and exploration to help gain greater insight into the nature of the problem, during the design and construction of a potential solution and in the associated evaluation that takes place often in parallel to the implementation of prototype solutions (McKenney and Reeves 2013). Their pro-active participation can increase a sense of ownership and consequently increase the chance of the pedagogical or technological innovation being adopted after the research completes (McKenney *et al.* 2012). As part of this collaborative process, it is also important that the researcher is present while the intervention is in progress (Gravemeijer and Cobb 2006).

it is critical in our experience that the researchers are present in the classroom when the design experiment is in progress, and conduct short debriefing sessions with the collaborating teacher immediately after each classroom session in order to develop shared interpretations of what might be

going on in the classroom. We also find it vital to have longer periodic meetings. The focus of these meetings is primarily on the conjectured local instruction theory as a whole.

(Gravemeijer and Cobb, 2006, p.28)

This is the approach that I took with the teachers in both schools. The debriefing meetings after each classroom session lasted for anything between ten minutes and an hour (depending on the time pressures that the teacher was under on a particular day). These usually involved us discussing how we felt that day's session had gone and whether the plans for the following session needed to be tweaked. As Phase 1a and 1b were of an exploratory nature, the tweaks in the design between sessions tended to be much greater than the tweaks during Phase 2, when each session had a more fixed focus. The sessions scheduled for Phase 3 in Barr na Leice had further settled into a set pattern and tweaks to the design between sessions were relatively minor.

I conducted longer interviews/design collaborations with each teacher at the end of each phase as well as focus groups with the children. It is at the end of a phase (or long term-macrocycle – see Figure 8), that a greater level of analysis and reflection can be done to assess the value of the emerging local instruction theory (Gravemeijer and Cobb 2006). The teacher and I would review the entire design phase and examine what had worked well and what had not. It also enabled us to design the following phase with the teacher drawing on her teaching experience to make suggestions such as themes to engage the children more, how we might improve time management during the sessions, how we might increase engagement at home and how new links could be made with the curriculum. My contribution to these collaborations was to try to ensure that changes in the design remained consistent with the pedagogical perspective, that technical breakdowns during phases were addressed in subsequent designs and that design changes were technically feasible based on the ICT resources in each school. Gravemeijer and Cobb (2006) suggest that the results of this analysis serve to inform the design of subsequent iterations of the intervention. They also suggest that implementing the design in a new classroom with different learners can lead to a more robust local instructional theory.

### **4.3. Data Collection**

Table 6 at the start of the chapter outlines the research schedule and the different types of qualitative data collected during each phase of the design. The research aims and methodology usually guide the choice of data collection methods. As this research is investigating the nature of how technology can support the language development of native speaking children, it is important that the data captured illustrates this. Design-based research was chosen as a methodology as it is a good fit with these aims. As DBR combines the “study of both the process of learning and the means that support that process” (Van den Akker *et al.* 2006b, p.4), making video recordings of the implementation of a

designed intervention is the most common method of data collection and this was the primary method employed in this research. By providing a temporal record of an unfolding event, video

serves as the basis for a retrospective analysis of what happened in the design study. The central challenge for the retrospective analysis is to systematically work through this extensive longitudinal data to arrive at and communicate rigorous, empirically grounded claims and assertions and to enhance the likelihood of replicability.

(Shavelson *et al.* 2003, pp.26–27)

Derry *et al.* (2007) outline four factors that researchers collecting video data must be cognisant of:

4. Selection: How can researchers be systematic in deciding which elements of a complex environment or extensive video corpus to select for study?
5. Analysis: What analytical frameworks and practices are appropriate for given research problems?
6. Technology: What technologies are available and what new tools must be developed to support collecting, archiving, analyzing, reporting, and collaboratively sharing video? and
7. Ethics: How can research protocols encourage broad video sharing and reuse while adequately protecting the rights of research participants who are recorded?

(Derry *et al* 2007, p.4)

One of the first methodological decisions to be made is what to focus on with the camera, if it should be fixed or hand held and when to start and stop recording (Barron 2007). Erickson has a preference for “raw” video footage shot from a wide angle with minimal interference with the recording as “it provides a continuous and relatively comprehensive record of social interaction” (2006 p.179). Goldman-Segall in her work as a video ethnographer has a preference for hand held documentary style use of the camera (1997). Decisions relating to what the researcher should capture are driven first and foremost by the research questions (Derry *et al* 2010; Barron *et al* 2012). As I was interested in capturing both group- and whole-group interactions in the collective zone of proximal development in the classroom, I used a fixed high-quality camera with as wide an angle as possible. The camera was mounted on a tripod in the corner of each room to try to capture as much of the whole-class interaction as possible. As it happens, I had little choice but to fix the camera as I was participating in the delivery of the sessions.

High quality equipment and software are widely available to capture video and to review it for the purpose of retrospective analysis. The video camera that I used was a Canon Legria HF 106 which is a high-definition (HD) camera with a good quality microphone. The quality of HD is such that even a

wide range shot can be zoomed in during playback to allow attention to greater detail. The software that I used to analyse the video data was VLC, an open-source application which allows fine-grained analysis of video footage (frame-by-frame playback and zoom features).

Another factor to be aware of is the possibility that the presence of the camera might affect the participants. My analysis of the video that I recorded shows that the children were sometimes conscious of the camera. The children might wave or make a funny face - usually when I would start recording or when occasionally I had to move it. Most of the time, they seemed to carry on with classroom life without paying any attention to the camera recording them in the corner of the room.

In relation to audio, Barron (2007) advises to check the sound quality of the data “early and often” (p.172). I made a separate audio recording during the preliminary sessions in addition to the camera’s high quality audio. When I reviewed the video, the audio was of sufficiently high quality that the separate audio recording was superfluous and I desisted from this practice for all future sessions.

Other data needed to be collected as supporting evidence for claims made. These included the recording of the debriefing sessions with the teacher after each session, interviews with the teacher and focus groups with the children after each phase and researcher reflections after each session (see Table 6 - Research Schedule, p.84). Barron (2007) notes the importance of this documentation:

Field notes, photographs of the surrounding field of action, interviews, copies of posted documents, might also be relevant and useful for enriching the video data that will be analyzed at some later point in time and for offering opportunities for triangulation across sources of evidence.

(Barron 2007, p.178)

Data triangulation increases the validity of the analysis. Banister et al (1998) describe triangulation as allowing “... illumination from multiple standpoints, reflecting a commitment to thoroughness, flexibility and differences of experience” and that triangulation involves “exploration from a variety of sources using an appropriate combination of methods increasing confidence that it is not some peculiarity of source or method that has produced the findings” (1995, p.146). This research sought to triangulate between observable interactions, interview and focus group data, analysis of participant artefacts and researcher reflections. The salient features of these data that were the subject of analysis are specified in the mediating processes section of the conjecture map in chapter 5.

#### **4.4. Data Analysis**

As the research was conducted in a real-world context, aggregating large amounts of video, audio and textual data, the approach to analysis aimed to be as comprehensive and rigorous as possible,



without losing a perspective on the whole. Erickson suggests that analysis of fieldwork in naturalistic settings seeks to answer the following questions:

1. What is happening, specifically, in social action that takes place in this particular setting?
2. What do these actions mean to the actors involved in them, at the moment the actions took place?
3. How are the happenings organized in patterns of social organization and learned cultural principles for the conduct of everyday life- how, in other words, are people in the immediate setting consistently present to each other as environments for one another's meaningful actions?
4. How is what is happening in this setting as a whole (i.e., the classroom) related to happenings at other system levels outside and inside the setting (e.g., the school building, a child's family, the school system, federal government mandates regarding mainstreaming)?
5. How do the ways everyday life in this setting is organized compare with other ways of organizing social life in a wide range of settings in other places and at other times?

(Erickson 1986, p.121)

Video has transformed the way that human interaction can be studied allowing the careful, repeated study of interaction (Derry *et al.* 2010; Barron *et al.* 2012). Analysis of video data takes an interpretive approach where “what we call our data are really our own constructions of other people's constructions of what they and their compatriots are up to” (Geertz 1973, p.9). As video provides huge amounts of information that could be potentially analysed, it is crucial that the researcher has a clear and valid strategy for selecting clips worthy of more detailed analysis (Erickson 2006). Brown (1992), cited the danger of ‘the Bartlett affect’ – the bias introduced when a researcher faced with a large corpus of data, selects only those data that best suit his/her argument.

It is therefore necessary to develop systematic ways of reviewing those records so that some phenomena are not missed or over-emphasized by chance, or worse, by deliberate choices which lead the analyst to ignore certain kinds of disconfirming evidence while attending to others.

(Erickson 2006, p. 179).

To make the results of DBR useful, Cobb and Gravemeijer (2006) suggest that the researcher should be striving to achieve “the generalizability and the trustworthiness of the constructs developed” (p. 79). They suggest that generalisability can be achieved through the selection of exemplars in the data for analysis and dissemination. The selection of exemplars should be driven by the research questions while the researcher remains watchful for other phenomena of interest and for instances of disconfirming evidence which should also be documented (Ash 2007; Engle *et al.* 2007).

Barab and Squire (2004) cite Dewey (1938) when they argue that “such a system of inquiry might draw less from traditional positivist science or ethnographic traditions of inquiry, and more from pragmatic lines of inquiry where theories are judged not by their claims to truth, but by their ability to do work in the world”. The researcher was therefore cognisant of the importance of generalisability, trustworthiness, and pragmatism throughout the analysis of the data.

#### **4.5. Narrative Output of Design-Based Research**

Many DBR researchers produce their results in a narrative form (Hoadley 2002; Shavelson *et al.* 2003; Mor 2011). Narratives in DBR are often in the form of “process oriented explanations” which “explain how learning unfolds over time” (Reimann 2011). They often cite Geertz’s recommendation of producing ‘thick descriptions’ (Geertz 1973).

One element that can be helpful in this respect, is offering, what is called a “thick description” of what happened in the design experiment. By describing details of the participating students, of the teaching-learning process, and so forth, together with an analysis of how these elements may have influenced the whole process, outsiders will have a basis for deliberating adjustments to other situations.

(Gravemeijer and Cobb, p.77)

Hoadley (2002, p.2) similarly defines a ‘design narrative’ as describing “the history and evolution of a design over time.” He suggests that design narratives “can help make explicit some of the implicit knowledge the designer or designer-researcher used to understand and implement the intervention” (ibid) and that a well-documented narrative account of a particular project or intervention can provide considerable information and insight that is relevant for both policy and pedagogy. He does warn, though, of likely criticism around replicability.

Mor (2013) offers a similar definition to Hoadley and also suggests that design narratives should focus on describing critical events in the design “from a personal, phenomenological perspective” (p.2). These should include “the complete path leading to an educational innovation, not just its final form – including failed attempts and the modifications they espoused” (2013, p.2).

In developing narrative descriptions that are representative of the data, Gravemeijer and Cobb (2006) use a variant of the constant comparative method from grounded theory (Strauss and Corbin, 1998). They work through each episode performing initial coding which results in a series of conjectures and refutations connected to specific incidents which then become the data for the second phase of analysis. It is this meta-analysis which helps identify pivotal incidents.

Barron (2007), similarly recommends combining data coding techniques with a narrative approach. She uses three forms of representation “to convey the complexity of the interaction” (p.175). These are:

- transcripts to illustrate key aspects of dialogue
- behavioural descriptions that conveyed aspects of the interaction
- still frames to further illustrate the body positioning of the interacting students at key points

(Barron 2007, p.175)

The narratives in this thesis are therefore, ‘thick’ descriptions that have been generated from the data and that include samples from the data in the form of transcripts and still frames. They emphasise key events, both breakthroughs and breakdowns, to paint an honest picture of the overall design trajectory.

#### 4.5.1. Three cycles of analysis

Having used grounded theory in my MSc, my analysis followed a similar trajectory to Gravemeijer and Cobb’s using a variant of grounded-theory employing two cycles of analysis followed by a generation of narratives from the emergent theory (Saldaña 2009). To ensure that I was generating codes and categories that were representative of what was happening in the classroom, I transcribed a number of the sessions to a level of detail that all discourse and major observable interactions were recorded using a tabular multimodal transcription method (Cowan 2013) which uses multiple columns (in Microsoft Excel) to represent different modes in the intervention. (Table 7). With so many possible choices available regarding what to transcribe, it is the focus of the research that determines which features to include (Mavers 2012; Cowan 2013). In addition to standard columns for timecode, speaker, addressed, discourse two extra columns were included:

- Observation – to offer visual cues as to actions of the participants.
- Wider context – occasionally a wider interpretation of the context of an interaction is required. For instance, in Table 7, Tadhg has found the English version of the lyrics the song “Na Ceannabháin Bhána”.

Time	Speaker	Addr	Code	Category	Discourse	Observation	Wider Context
53:34	Tadhg				... A Mháistreas ...	asking for help	
53:47	Síle					comes over	
53:48	Tadhg	Síle	<b>need to understand</b>	engagement with audio	... céard is sámh ann?	is reading "Sadhbh" from the screen	reading lyrics that he has found online

53:51	Tadhg	Síle	written lyrics causing issues	writing vs vernacular	... sámh Seán? ...	Síle sits down	
53:53	Síle	Tadhg	written lyrics causing issues	writing vs vernacular		both looking at screen	
53:54	Síle	Tadhg	teacher clarifies pronunciation	scaffolding language	... Sadhbh Sheán ...		
53:55	Tadhg	Síle			... Sadhbh Sheán ...	mispronounces	
53:56	Síle	Tadhg	teacher clarifies pronunciation	scaffolding language	... Sadhbh Sheán ...	repeats	
54:03	Tadhg	Síle	resolving language	scaffolding language	... Sadhbh Sheán ...	pronounces Sadhbh correctly	

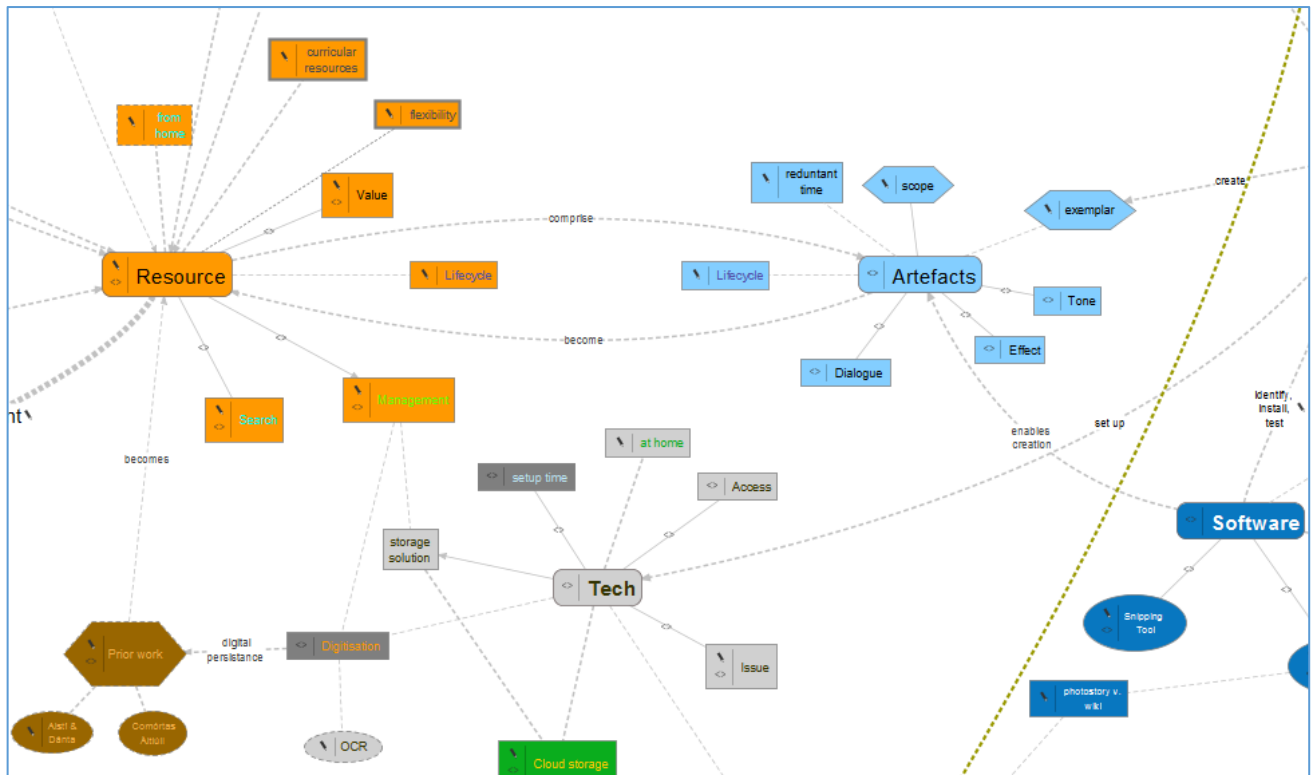
**Table 7 - Sample of the Multimodal Transcription Method Used**

During the first cycle of analysis, which is similar to open coding (Strauss and Corbin 1998), I found it difficult initially to phrase candidate codes as the transcripts were in Irish but the codes were in English. Many of the initial codes (column 4) resembled simplified translations rather than analytic codes. After several passes through the data, some similarities began to emerge by trying to generalise the codes. This led to the various categories being identified which were added to a separate column (column 5).

This refined record of categories was used as the basis of generating the local instructional theory during the second phase of analysis which is similar to axial coding (Strauss and Corbin 1998). Several techniques were then employed to aid this process. I wrote memos to describe the categories that were emerging from the data and to attach key quotes and flowcharts were created using a free concept mapping tool called Visual Understanding Environment<sup>24</sup> to try to visualise how the various categories related to one another.

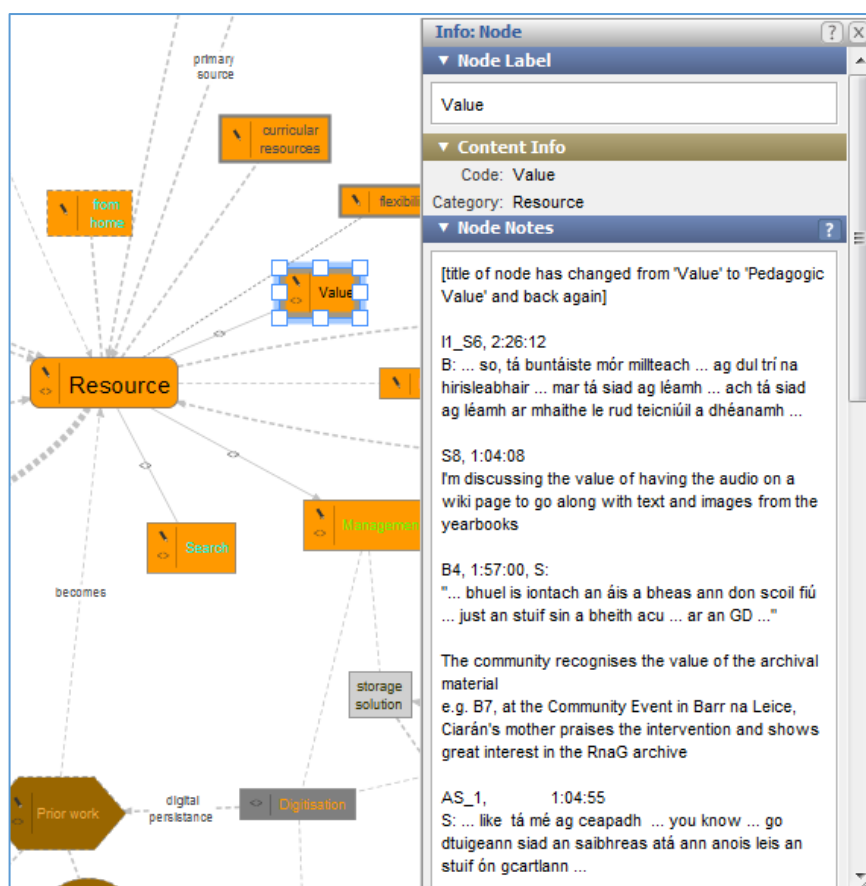
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<sup>24</sup> <https://vue.tufts.edu/>



**Figure 10 - Category Map showing how main categories were identified and represented. These are surrounded by subcategories of a similar colour. Arcs (labelled and unlabelled) were used to denote relationships between categories. Text colour was used to mark similarities between subcategories with different parent nodes**

Categories were represented as the nodes in the flowchart and the relationships between them as labelled, directed arcs. This further helped to identify the main categories and their subcategories. The software enabled the use of colour to highlight similar categories. The software enables notes (which can be hidden) to be added to nodes which enabled the attachment of memos and quotes from the data to be added directly to the map. This helped to further refine categories by isolating those that were superfluous, were poorly named, needed to be integrated or needed to be split.



**Figure 11 – Illustrating the use of the Note feature in VUE to add text to a category such as research metadata, description of the node or key quotes from the data**

Categories and subcategories were grouped together in later drafts of the flowcharts to provide a more structured visualisation of the emerging theory. The colour coding was applied back to the source data in Excel to enable further visual analysis of the original data. Some later sessions were not coded in their entirety – rather I created a content log for each of these sessions consisting of a description of what was happening in the classroom at regular intervals (Derry *et al.* 2010). I was able to focus then on the selection of pivotal episodes for more detailed analysis (Gravemeijer and Cobb 2006).

The final cycle of analysis was in the generation of the narratives themselves. These were built around the main categories and their associated subcategories and attempted to chart the relationships between them drawing on the memos and key quotes from the data (covering the sessions, post-session debriefings, interviews, focus groups and researcher reflections) that were illustrative of the categories. The narratives also attempted to provide the learners with a voice by including participant narratives (Mor 2011) which chart the learning trajectories of individual learners. These include the analysis of their artefacts for evidence of the desired outcomes having been reached (see Section 5.4.3.2).

## 4.6. Challenges of DBR

It is worth noting that implicit in most DBR projects is the understanding that they are large projects conducted by a team of researchers and designers e.g. (Cobb *et al.* 2003; Design-Based Research Collective 2003; Barab and Squire 2004; Sandoval 2004, 2014) and guidelines have been developed to help ensure proper communication occurs between members of the research team (McKenney and Reeves 2013). This presented me with many challenges throughout the intervention but my multidisciplinary background helped me to overcome most of these. Gravemeijer and Cobb (2006) suggest that in trying to design solutions to complex educational problems, researchers in DBR studies will often find only limited guidance in the research literature and may have to resort to adopting and adapting resources from other sources. They suggest the adoption of the term 'bricoleur' to describe the role of a researcher conducting DBR where:

A bricoleur is an experienced tinker/handy person, who uses as much as possible those materials that happen to be available. To do so, many materials will have to be adapted; the bricoleur may even have to invent new applications, which differ from what the materials were designed for.

(Gravemeijer and Cobb 2006, p.51)

The notion of bricolage has also been associated with qualitative research in general particularly when working on projects of an interdisciplinary nature (Kincheloe 2001; Denzin and Lincoln 2005)

The interpretive bricoleur produces a bricolage-that is, a pieced-together set of representations that is fitted to the specifics of a complex situation. The solution to this complex problem – *the bricolage* – is an emergent phenomenon “that changes and takes new forms as the bricoleur adds different tools, methods, and techniques of representation and interpretation to the puzzle”.

(Denzin and Lincoln 2005, p.4)

The criticism of bricolage is its very nature – its interdisciplinarity. The criticism is that it must be in some way superficial:

Superficiality results when scholars, researchers, and students fail to devote sufficient time to understanding the disciplinary fields and knowledge bases from which particular modes of research emanate.

(Kincheloe 2001, p.681)

Following a similar tone, McKenney and Reeves (2013) suggest that a DBR researcher take on the roles of both detective and inventor where “the detective is highly rational, seeking knowledge that

is grounded in evidence from the field and supported by scientific understanding” while the inventor “is original, striving to innovate and embracing opportunity” (McKenney and Reeves 2013, p.82).

These analogies are indicative of the flexibility that would be required of me when trying to design a solution within the complexity of a Gaeltacht classroom.

#### **4.7. Ethical Considerations<sup>25</sup>**

The researcher undertook the research following best ethical practice (BERA 2004; Ireland and Department of Children and Youth Affairs 2012). The DCYA guidelines summarize the core ethical concepts and principles in child-related research succinctly:

There are basic ethical principles that apply to all research. These include:

- a commitment to the well-being, protection and safety of participants;
- a duty to respect the rights and wishes of those involved;
- an obligation to address the issue of who ought to receive the benefits of research and bear its burdens;
- a responsibility to conduct high-quality scientific research
- a commitment to communicate the results of research to relevant stakeholders and policy-makers.

Based on these principles, a number of core ethical concepts arise in research. These are:

1. minimising risk of harm
2. informed consent and assent
3. confidentiality and anonymity

In relation to children’s research, a number of additional issues need to be addressed, namely:

4. child protection principles
5. legal obligations and policy commitments in relation to children
6. a child-centred, inclusive approach to research

(DCYA 2012, p.1)

In addition to the researcher’s own safeguards, the proposed research had to be submitted to the university’s Research Ethics Committee (REC) before field work could commence. This is an extremely rigorous process which involves filling out a form (OÉG 2005) that requires detailed information in relation to:

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<sup>25</sup> **Please note:** All documentation relating to ethical consent referred to in this section that do not compromise anonymity (information sheets, consent form, etc.) are contained in Appendix A



- Details of the study
- Recruitment of participants
- Consent
- Data collection methods
- Potential Risks to Participants
- Indemnity
- Confidentiality

The first classroom was in Cluain Locha National School (all names are aliases) with 9 children from 3rd to 6th classes (typically aged 8-12 years) and their teacher(s). The second classroom was in, Barr na Leice National School and had 18 children from 3rd to 6th classes (typically aged 8-12 years) and their teacher(s).

As I was going to be working with children, I was required by the university to sign a statutory declaration form that I was of good character and not a risk to children and also to submit a Garda vetting form which checks for any previous criminal record. The schools also required statutory declaration forms relating to child protection and forms of undertaking to be co-signed by the researcher, the principal and witnessed by a solicitor.

Two types of information sheet and consent form (one type for teachers, the other for parents and children) were prepared, describing the full project and fulfilling the ethical requirements (described above). These were distributed to the principal of each school, participating teachers and to parents (Appendix A – ). English language versions of each document were also made available in cases when required. Their design followed the protocols of the university (OÉG 2005). As the children were considered collaborators in the project, they were also asked to sign the consent forms. The teacher's information sheet also specified that the teacher was required to be present while the researcher was in the classroom.

On the suggestion of the principal in Cluain Locha, an information evening was organised in the school in advance of the project for parents to meet the researcher and raise any concerns they may have or clarify any other matters before they decided to grant their consent. This was well attended and the parents were both positive and interested in the project and didn't raise any concerns. All participating children and their parents as well as the teachers involved in both schools signed the consent forms.

All research data was stored securely according to the university's data retention policy (OÉG 2006). The children, their teacher or their families were free at any stage to withdraw from or request

that any part of the research pertaining to them be destroyed permanently without suffering penalty or disadvantage.

The researcher was aware of the vast amount of data generated by video and was cognisant of the greater ethical dilemmas associated with the use of video, particularly with children (Kuipers 2004; Yakura 2004) . Anonymity can still be maintained by careful storage of the video files and by destroying them 5 years after the study has been completed. All notes/transcripts from recordings, focus group data, reflections and observations used an alias to identify participants as did any other data that may lead to them being identified. The assignments of names to aliases (paper-based) along with single copies of untranscribed video and audio files are stored under lock and key in the researcher's office following the university's data retention policy (OÉG 2006).

#### **4.8. Summary**

This chapter has outlined how design-based research was a suitable approach to choose in trying to design an intervention that could be employed within the complexity of a Category A Gaeltacht classroom. Data collection methods were primarily in the form of video records. Analysis was primarily in the form of a variant of grounded theory which consisted of cycles of initial coding, categorising and diagramming. The final detailed diagram was used to generate the narratives that present the results of the thesis. Research ethical approval was sought and granted and professional guidelines were strictly followed.

## Chapter 5 – The Initial Design of the Intervention – Design Requirements and Design Conjectures

### 5.1. Introduction

This chapter presents the initial design of the intervention. This was informed by:

- Design requirements which are context-specific (McKenney and Reeves 2013). These are presented in section 5.3
- Design conjectures which are theory-based and presented in the form of a conjecture map and accompanying narrative (Sandoval 2014). This is the core of the chapter and presented in section 5.4

The chapter begins with an account of how the design requirements were discerned over the course of Phase 0 of the project – my work with Gaeltacht teachers in identifying rich audio clips from the Raidió na Gaeltachta archive for a new iTunes U Channel that *An Chomhairle um Oideachas Gaeltachta agus Gaelscolaíochta* (COGG) were developing in conjunction with the National University of Ireland, Galway. My field work during this project while working with teachers and visiting schools had a huge bearing on the context-specific requirements of the initial design<sup>26</sup>, thus necessitating its description prior to the presentation of the overall design that covers the remainder of the chapter<sup>27</sup>.

The overall design is presented in the form of a conjecture map (Figure 16, following Sandoval (2014) and as discussed in Chapter 4, Section 4.2.4). A detailed narrative account of each element of the conjecture map is then presented. The conjecture map is based on input from the design requirements and the literature related to both the problem<sup>28</sup> and potential solution<sup>29</sup>. The narratives refer back to appropriate literature when justifying the design.

Chapter 3 described Cummins *et al.*'s design criteria for evaluating technology-supported instruction that draw on the research literature for learning and literacy development. These have been extremely useful in informing the initial design outlined in this chapter. I have adapted them slightly for evaluating technology-supported instruction that focuses on developing the listening and speaking skills for endangered language learners. I have extended the fourth and fifth points to address this change in focus and added a seventh to highlight the particular challenges relating to Gaeltacht classrooms as set out in chapter 2. These amendments are highlighted in italics:

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<sup>26</sup> See section 5.3

<sup>27</sup> See section 5.4

<sup>28</sup> See Chapter 2

<sup>29</sup> See Chapter 3

Does the technology-supported instruction:

- provide cognitive challenge and opportunities for deep processing of meaning?
- relate instruction to prior knowledge and experiences derived from students' homes and communities?
- promote active self-regulated collaborative inquiry?
- *promote extensive engaged listening and speaking using rich language resources?*
- *help students develop strategies for effective listening, speaking and learning?*
- promote affective involvement and identity investment on the part of students?
- *provide an inclusive approach to differentiated language provision based on multi-grade contexts that include both L1 and L2 speakers?*

(adapted from Cummins et al 2007 pp.109-110, emphasis added)

These criteria are extremely comprehensive and would be useful to both teachers and policy-makers in evaluating any form of technology-enhanced instruction claiming to support listening and speaking skills in an endangered language context.

## **5.2. Phase 0: Origins of the Research: The iTunesU Project**

My decision to start formal research in this area began after I was asked to work as an education liaison officer on a project whose aim was to make digital resources for language development available on a new iTunesU channel for COGG. I was asked to draw on links forged through my teaching on an M.A. course for Irish language and Irish-medium teachers to identify and recruit educators to collaborate with in developing digital resources. The main source of resources had been identified as the Raidió na Gaeltachta archive. My institution had permission to use it and had been responsible for digitising most of it from reel-to-reel tapes as part of a community development project in the 1990s (Mac Con Iomaire 2006).

I contacted several local teachers and resource creators and asked them to collaborate in identifying clips from the archive to support children's language development. Initially the group met on a face-to-face basis to discuss the types of material that should be included in the collection. Emerging from these discussions were the following criteria when assessing clips for use in the classroom:

- The language should be of native or near-native quality – all teachers agreed that the vernacular should be the target for spoken varieties.
- The language should be rich in expression and idioms – the teachers' experiences in the classroom mirror the findings of linguistic research in the Gaeltacht that the standard of native-speaking children's Irish is in decline.

- The three main dialects should be covered – although the participating teachers were based in Conamara, they were conscious of other Gaeltacht schools needing target spoken varieties as well as the opportunities for working on language awareness that clips from other dialects would create.
- A wide variety of genres should be included such as song, poetry, stories, factual pieces, folklore, riddles and local histories – the teachers drew up a list of genres that they wanted to include to cover the various aspects of the rich oral tradition still being practised in many strong Gaeltacht areas.
- A significant proportion of the clips should include children’s voices – it was felt that recordings of children would be of greater relevance and appeal to other children.
- Clips should be kept short (ideally under three minutes) unless they’re of particular value and can’t be split – it was pointed out that it would be easier for teachers to prepare lessons around shorter clips and that it would also be easier to keep children’s attention focused on a shorter clip.

For reasons of geography and personal commitments, the face-to-face meetings proved difficult to organise, so I set up a private wiki (using Wikispaces educational license) to facilitate a smoother workflow for collaboration on the choice of clips and the development of pedagogical guidelines for teachers on how to make use of the clips. The wiki workflow included me using the Radio Archive Database (Figure 12) to help identify candidate programmes.

The radio database is an MS Access file with the metadata relating to the programmes stored in one very large table with a number of various fields (programme title, presenter, date of broadcast, guests, etc.). It is essentially a flat file and does not follow good practice in terms of database design as many of the fields contain repeating values. It is still extremely valuable and can be searched using the Find function. I listened carefully to the programmes that I identified as “promising” noting timecodes for candidate clips. For example, one genre of programme that I listened to a great deal was “Clár do Pháistí” and featured native speaking children singing, reciting, chatting, etc.

UimhCD	Uir	Chlár	Léiritheoir	Láithreoir	Rann	DátaCrao	Aionna	Ábhar	Fó-ábhar	Fac
CD 0680	27	Imeasc na bPáistí	Máirtín Davy Ó Coisdealbha	Máirtín Davy Ó Coisdealbha	Clár Páistí	02/03/1980	Coisdealbha, Máirtín Davy Ó	Scoil Náisiúnta An Tuairín, An Cheathrú Rua.	.....	31
								Ag caint		
CD 0680	28	Imeasc na bPáistí	Máirtín Davy Ó Coisdealbha	Máirtín Davy Ó Coisdealbha	Clár Páistí	03/07/1982	Coisdealbha, Máirtín Davy Ó	Gasúir Scoil Náisiúnta Na bhForbacha.	.....	29
								Óró mo Bháidín & An Maidrín		
CD 0680	26	Imeasc na bPáistí	Máirtín Davy Ó Coisdealbha	Máirtín Davy Ó Coisdealbha	Clár Páistí	25/10/1982	Coisdealbha, Máirtín Davy Ó	Scoil Náisiúnta An Baile Nua, Maigh Cuilinn.	.....	28
								Amhrán - Téigh Abhaile.		
CD 0707	5	Imeasc na bPáistí	Máirtín Davy Ó Coisdealbha	Máirtín Davy Ó Coisdealbha	Clár Páistí	05/05/1979	Broinn, Ferdia Ó Gearailt, Máire Nic Bhreanáin, Nicola Ní Shuilleabháin, Áine Ní	Clár ceoil agus comhra as Coláiste Gaeilge i gCorr na Móna	Bionn tomhais agus duaiseanna ar an gclár freisin	30
CD 0707	6	Imeasc na bPáistí	Máirtín Davy Ó Coisdealbha	Máirtín Davy Ó Coisdealbha	Clár Páistí	01/07/1979	Murchú, Ian Mac Cábhánaigh, Ciarán Ó Néill, Brian Ó Bhall, Diarmuid de	Clár ceoil agus comhra as Scoil Náisiúnta na Rinne Móire, Gaillimhe	Bionn tomhais agus duaiseanna ar an gclár freisin	31

Figure 12 - Screenshot of the Raidió na Gaeltachta Archive Database

When I identified a candidate clip (e.g. the recitation of a song, a poem, story, lúibín, agallamh beirte, etc.), I extracted it and cleaned it up using a sound editor. I then uploaded it to the wiki, making it available for assessment by the committee on a wiki page that listed each clip according to genre. The committee were able to use the wiki talk pages to discuss the clips (Figure 13).

Múinteoir Bernie:	A Mhuireann, Chuir mé Laethanta & Féilte mar theideal, mar bhí mé cuimhniú go bhféadfaí eolas seachas nósanna faoi laethanta agus féilte faoi leith a chuir isteach, m.sh Lá Fhéile Bríde, Lá Pádraig, Oíche Sin Seáin, La Nolaig srl. Ach is féidir iad a chuir faoi theideal eile má cheapann sibh go mbeadh sé níos fearr. Bernie
Niall	Tá sé éasca na teidil a athrú thart de réir mar a theastaíonn ... nó fiú go mbeidh an mhír chéanna le feiceáil faoi níos mó ná teideal amháin. Is féidir liom an ceann seo a fhágáil mar atá sé nó é a chur mar fhotheideal faoi cheann eile. Pé scéal é, níl na míreanna eagraithe de réir ábhar ar an gcuraclam fós - rud a bheas le déanamh. Niall
Múinteoir Muireann	Seans go bhfuil sé ceart go leor faoi láthair. B'fhéidir go rithfidh rudaí eile linn nuair a bheas muid ag plé le hábhair an chuarclaim
Múinteoir Bríd	Mar a luaidh mé cheanna, tá "ócaidí speisialta" mar théama i gcuraclaim na bunscoile. Céard a cheapann sibh?
Múinteoir Muireann	Ceapaim go mbeadh 'ócaidí Speisialta' go maith. An bhféadfaí nasc a chuir uaidh chomh maith go dtí scéalta, dánta etc a bhí in áit eile ach bhain ar bhealach éigin le hócaidí speisialta?
Niall	Nuair a bheidh na míreanna ar iTunes, d'fhéadfadh an mhír chéanna a bheidh liostáilte faoi roinnt teidil eile. M.sh. "Scéalta", "Stair áitiúil" agus "Ócaidí speisialta". Táimid in ann é sin a shocrú suas ar an wiki seo freisin. Is furasta nasc a chur i scéalta agus i stair áitiúil go dtí an mhír chéanna.

Figure 13 - An exchange between teachers and the researcher on a Wiki Talk page (contributor names anonymised)

Once a clip was approved, an individual page was created for the clip where metadata was added by members of the committee. The committee members had varying degrees of technical ability but none of them had any difficulty navigating the wiki nor editing pages. The decision to include detailed metadata (Figure 14) with each clip was agreed by the committee after discussing whether clips should be transcribed or not. It was eventually agreed that written transcripts of the files should not be

made available as they could change the likely use of the clips from listening comprehension and a focus on dialect and pronunciation to reading comprehension and a focus on the written word. Transcribing would also raise issues around the tension between the vernacular and An Caighdeán Oifigiúil (see section 2.5.4) – for instance, should transcripts match the speech or adhere to the standard? The committee were anxious to ensure that the vernacular was the target variety. Over 400 clips were made available on COGG's iTunesU channel as a result of this collaboration.

Teideal	Scéal an táilliúra	
Meán	Fuaim	
Comhad	tailliur.mp3	
Clár	Mol an Óige	
Uimhir CD	CD 0739	
Uimhir Rian	24	
Cur síos	Seolann máthair a mhac amach ar thóir oibre. Téann sé ag obair do fathach. Tá sé i bhfad níos cliste ná an fathach agus déanann sé gaiscí a chuireann iontas fiú ar an bhfathach.	
Seánra	Scéal	
Canúint	Conamara	
Cainteoir(i)	Buachaill óg ag insint scéal i gcanúint Chonamara	
Luas	Mall	
Minicíocht na nathanna	Ard	
Ábha(i)r	Gaeilge; Stair - scéalta béaloidis	
Fad	08:28	
Samplaí den saibhreas	ag déanamh gaisce	00:14
	chonaic sé ualach aoileach ar leataobh an bhóthair	00:37
	lig an fathach scairt mhór gáire as	01:39
	Tá sé cinnte orm le blianta é a cheansú	03:43
	Dia dá réiteach	04:35
	thit sé min marbh ar an talamh	05:01
	go dtárthaí Mac Dlíis Dé sinn	05:26
	ag alpadh an tairbh agus á shlogadh	06:41

**Figure 14 - Sample Wiki page which teachers participating in the project contributed to by adding metadata relating to each one of the clips to be used as part of the iTunesU channel**

A second element of the project was to collaborate with teachers in developing pedagogical guidelines to accompany the clips. The primary school curriculum for Irish is a communicative syllabus (Rialtas na hÉireann 1999) and encourages the development of speaking and listening skills. It emphasises the importance of the various genres of oral tradition in Gaeltacht areas:

Is féidir an obair seo a dhéanamh ar bhonn níos leithne sa Ghaeltacht. Tá tábhacht ag baint leis an traidisiún béil, agus ba chóir do pháistí scoileanna Gaeltachta agus lán-Ghaeilge eolas éigin a chur ar nósanna agus ar phiseoga, ar sheanamhráin agus amhráin nuachumtha, ar lúibíní, ar rainn thraidisiúnta, ar dhánta, agallaimh bheirte agus scéalta dúchasacha. (Rialtas na hÉireann 1999, p.13)

In my collaboration with the writers, it was agreed that a set of guidelines be written for each genre of clip following the communicative approach (Figure 15). These included pre-listening activities, activities during listening and post-listening activities. It was also agreed that the activities would follow a sociocultural perspective on pedagogy and the suggested activities encouraged creativity, communication and collaboration around the clips.

<b>RÉAMHTHASCANNA .....</b>	
AG COTHÚ SPÉISE ROIMH RÉ .....	
AN SCRÍBHNEOIREACHT MAR RÉAMHTHASC .....	
AG ULLMHÚ DON CHANÚINT .....	
<b>TASCANNA LE LINN ÉISTEACHTA.....</b>	
‘AIMSIGH AN FOCAL / AN FRÁSA’ .....	
FOCAIL AGUS LEAGANACHA NUA .....	
CÉN BHLIAIN/TRÉIMHSE? .....	
COMHÉISTEACHT .....	
‘ABAIR ARÍS É!’ .....	
‘CÉN FREAGRA A TUGADH?’ .....	
<b>TASCANNA IAR-ÉISTEACHTA .....</b>	
TRÁTH NA GCEIST RANGA (CEISTEANNA CUMTHA AG AN MÚINTEOIR).....	
TRÁTH NA GCEIST GRÚPAÍ (CEISTEANNA CUMTHA AG NA GRÚPAÍ FÉIN) .....	
‘FÍOR NÓ BRÉAGACH’? .....	
FOCAIL AGUS LEAGANACHA NUA .....	
ATHINSINT NA MÍRE .....	
AOI-CHainteoir .....	
NA MÍREANNA A CHEANGAL ISTEACH LE HÁBHAIR EILE AN CHURACLAIM .....	
RUDAÍ ÓN SEANSAOL / MÚSAEM RANGA .....	

**Figure 15 – Sample tasks from the guidelines for teachers for using the iTunesU Collectionn (Folklore Genre)**

The third element of the project involved promoting the channel. After the channel and guidelines were launched, I visited a number of schools in various Gaeltacht areas and provided workshops to children and professional development sessions to teachers. These visits also offered a great opportunity to gain further insights into the requirements of teachers and children as well as the constraints relating to Gaeltacht educational contexts helping me to "gain a sense of the day-to-day realities in which the practitioner problems are situated" (McKenney and Reeves 2013, p.93) and what type of intervention was likely to work in such contexts. They also helped in identifying schools that would be open to collaborate with me during the research.

I noted how much the children enjoyed working with technology for the short duration of each workshop but there was little or no time to evaluate how engaged they were with the resources. The feedback from the teachers in relation to the channel, the clips and the pedagogical guidelines was also extremely positive. Many of the teachers in each Gaeltacht region bemoaned the lack of suitable resources to support L1 children (echoing the research outlined in chapter 2, Section 2.5.6) and were therefore particularly pleased that the clips were authentic and that many were rich in idiom and that all three major dialects were represented. They also noted how the technology (MP3 players, audio splitters and headphones) enabled groups of children to listen simultaneously to different pieces of audio – creating opportunities for teachers to tailor listening content according to the linguistic abilities of children. This could help with one of the greatest challenges facing Gaeltacht teachers by supporting L1 and L2 children in multi-class classrooms (Ní Shéaghdha 2010).

Over the course of these visits, I noticed that the technology in many Gaeltacht schools was quite dated – old computers running old and even out of date operating systems (similar to what Dicker



et al. (2009) found in Inuit community areas in Canada<sup>30</sup>). Many of the teachers also intimated that they felt inadequate in relation to their digital literacy skills and that they often relied on the children when working with technology in the classroom.

During this time, I continued to deliver a digital literacy module on an MA for Irish Language Teaching. I regularly sought the opinions of my students who were experienced teachers on my design ideas for this research. They were generally favourable towards the use of technology to support language development in the classroom and were also generally disposed to a sociocultural perspective for pedagogy – the paradigm underlying the approach of the programme. They were almost united, however, in their aversion to the use of video or images of the children in the classroom citing dangers of bullying and difficulties in attaining parental consent as some of the reasons for this.

### 5.3. Design Requirements

Design requirements are context-specific factors that should be taken into account as part of the design process of a pedagogical intervention (see section 4.2.5). These are often identified as part of the field-based activities that take place during the initial *Analysis/Exploration* phase of DBR (McKenney and Reeves 2013). These activities were embodied in my work on the iTunesU project - with the committee of educators, the in-school workshops that I gave in various Gaeltacht schools and various networking opportunities that arose through working on the project. A further factor in developing the requirements was to plan for the potential for the implementation and spread to other similar contexts (McKenney and Reeves 2013).

The design requirements are as follows

- ***Transformative requirement:* Pedagogical innovations should transform praxis to support the language development of all learners. Gaeltacht schools need to be aware of the precarious state of the language**
  - Many native-speaking children are not fully acquiring their first language leaving the future of the language as an intergenerationally transmitted language in doubt. After the home, the school has an important role to play in supporting this process but the system has failed native speakers to date. Any pedagogical intervention must ensure that schools are aware of the nature of this problem and that praxis in schools must be transformed to support the language development and socialisation of all learners
- ***Skills requirement:* Hardware and software should be chosen that is intuitive to use**

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<sup>30</sup> See section 3.8.1

- A typical small Gaeltacht school is under-resourced in terms of digital literacy skills. Technology that is in any way challenging to use is unlikely to be adopted by many Gaeltacht schools.
- ***Compatibility requirement:* Software should be chosen that is compatible across as wide a variety of platforms as possible, noting that many schools are using older hardware**
  - A typical small Gaeltacht school is under-resourced in terms of technology (older hardware and software). Sophisticated, resource-demanding software is unlikely to be transferrable to many other Gaeltacht schools. Also, software should be chosen that works across a variety of platforms (e.g. browser-based resources) to increase the likelihood of it being compatible with devices being used at home.
- ***Cost requirement:* Cheap or free technology has the best chance of achieving the greatest spread.**
  - All schools are under pressure in terms of budgets. Keeping costs down for schools will encourage spread. Free software will reduce barriers to children being able to install it at home.
- ***Safety requirement:* Images of children should not appear in digital artefacts to allay teacher and parent fears of bullying and other perceived threats**
  - Many teachers are wary of using digital images of children in school work.
- ***Language requirement:* New resources should be chosen or created following the teacher-generated criteria as part of the iTunesU project**
  - Resources should be authentic (see section 3.4), of native or near-native quality, rich in expression and idioms and challenging, yet comprehensible. A wide variety of genres in the three main dialects should be covered. Clips should be kept short (under three minutes if possible) and a significant proportion of the clips should include children's voices.

## 5.4. Conjecture Map Specifying the Overall Design

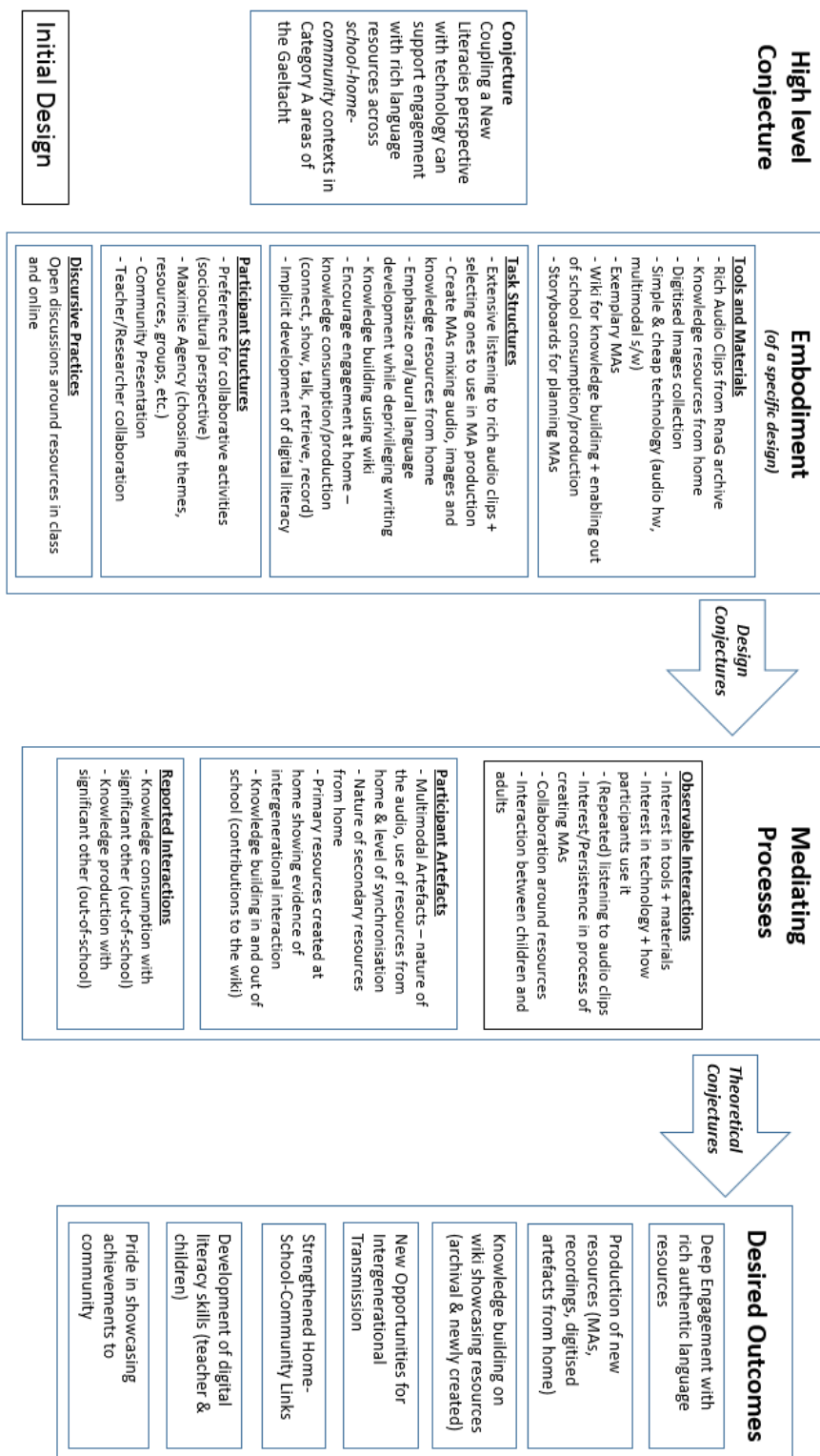


Figure 16 - Conjecture Map of the Initial Design of the Intervention

#### **5.4.1. High level Conjecture**

The high-level conjecture is an abridged form of the research aims and states that “coupling a New Literacies perspective with technology can support engagement with rich language resources across school-home-community contexts in Category A areas of the Gaeltacht”.

#### **5.4.2. Embodiment of the Design**

This section describes the initial embodiment of the design (tools and materials, task structures, participant structures and discursive practices) at the start of Phase 1a in Cluain Locha. Phase 1a (the preliminary phase of three sessions) embodied a sub-set of these elements in a prototype walkthrough of the design. All elements were embodied in Phase 1b.

##### *5.4.2.1. Tools and Materials*

Using the iTunesU clips as the principal language resources for the project was an early design decision easily made as they were the product of a collaboration between the researcher and local educators aimed at language development among Irish speaking children. I had hoped that the clips would be perceived by the children as exemplars for the kind of resources that they would produce themselves – the clips were, after all, authentic - satisfying Little’s (1994, p.45) criterion of authenticity – fulfilling “some social purpose in the language community in which it was produced”. I was conscious, all the same, that for all the obvious value in the iTunesU collection, it had ultimately been selected by a group of adults for specific language development purposes and that there might be a danger, that the clips were relatively more authentic to the adults who chose them than to the children who were to listen to them (using Rost’s (2013) concept of relative authenticity).

Most children living in Category A areas of the Gaeltacht have access to funds of knowledge (after González et al. 2005) in their home, family and community networks which are likely to be of much greater value to them personally than any of the clips in the iTunesU collection. So, while their early explorations in the intervention could be scaffolded by the iTunesU clips, more powerful and deeper engagement could be achieved through encouraging them to collect rich language resources at home such as images, texts and other artefacts (drawing on Pahl and Rowsell’s (2010) work on artifactual critical literacies).

The ultimate resource from home would be a home recording made by the child of another family member using potentially a richer version of Irish than that possessed by the child themselves. These recordings would evidence explicit intergenerational transmission for the purpose of language development. Before the children would be ready to conduct an unsupervised interview at home using an MP3 recorder, the iTunesU collection would act as a set of scaffolds/exemplars in terms of the type

of material that was suitable for a home recording, the quality of audio that was desired and in the case of clips taken from interviews, the types of question that would inspire good responses.

Creating multimodal artefacts based on resources from home that the children themselves had collected would be much closer to Cummins and Early's definition of an identity text (2011) than those based on clips from the iTunesU collection. They suggest that effective instruction needs to activate "their prior experience and builds background knowledge" (p. 36) and this can be achieved through the creation of identity texts. Identity texts should affirm identity and extend children's language both of which would be achieved through the digital remixing of knowledge resources gathered at home. The iTunesU collection would still be a valuable collection of rich language resources for children who for one reason or another could not or chose not to employ resources from home. In this case, children could still add their own choice of images to the audio, providing a degree of identity investment.

To enable the children to create multimodal artefacts from these clips, access to a collection of digital images would be required. An obvious default source of digital images is the Internet and there were no foreseeable issues with copyright as there were no plans for children's artefacts to be made available outside the bounds of the local community. One problem with this approach is that the search for images inevitably has to be made in English which takes the children outside the mindset of working with rich language resources. It also shows some of the limitations of working online in a minority language.

Another issue with online images is that they are likely to be too generic for developing artefacts that are to be based on rich audio clips featuring vernacular speakers who often refer to local place names and traditions, or in the case of home recordings, family-specific interests. A far richer source of images to accompany such clips would be scans of the children's own drawings, the school's own image collection or scans of pictures or artefacts brought in from home. The use of artefacts from home in the creation of texts draws on Pahl and Rowsell's (2010, 2012) notion of children's identities sedimenting through the texts.

The choice of hardware and software for the creation of the new multimodal artefacts was constrained by the cost, compatibility and skill requirements as specified among the design requirements (above). To support the children's explorations in listening and recording, I purchased a set of headphones for each child and a number of MP3 recorders, microphones and audio splitters ensuring that there was one for every 2 children. This was more than sufficient. In fact, one per three children would have sufficed. The particular ones that I chose were simple, sturdy, reasonably priced and where possible, attractive looking (see Figure 17). I hoped that the simpler modular nature of the hardware that I was

bringing into the classroom would help limit the amount of distractions available through the technology.



**Figure 17 - The hardware purchased for the intervention included MP3 players/recorders with direct USB connector, attractive but sturdy headphones, cheap lapel-microphones and audio splitters**

The equipment was left in the school during the course of the intervention so that the teacher and the children could make use of it outside of the ‘official’ sessions. The iTunesU collection was copied onto the MP3 recorders so that the teacher and the children could immediately access it without the extra overhead involved in accessing it online. Perhaps the most valuable piece of equipment of all was the audio splitter. This would enable up to five sets of headphones to be connected simultaneously and enabled the children to collaboratively listen to the audio and meant that the only piece of equipment that was required for each child was a set of headphones. This allows for tailored listening activities which as already discussed in the design requirements, could help teachers deal with the problem of trying to simultaneously support the language development of L1 and L2 children in the same classroom.

For the purpose of creating the multimodal artefacts, Microsoft Photostory was chosen. It enables the creation of digital stories by mixing audio with digital images. This piece of software has been available for free on the Microsoft Windows platform since the late 1990s and is compatible with every version of Windows (since XP) up to the current version (Windows 10). The Photostory interface is particularly simple comprising a sequence of seven screens the first of which offers a “Begin new story” button. Each subsequent screen is reached through a “Next” button. Previous screens can be revisited through a “Previous” button. The story is completed by pressing “Finish” on the final screen which generates a video version of the story in the Windows Media File (.WMV) format.

A conventional Photostory involves a narrator(s) recording a piece of audio associated with each picture into a microphone connected to the computer. When I have worked in the past with groups of

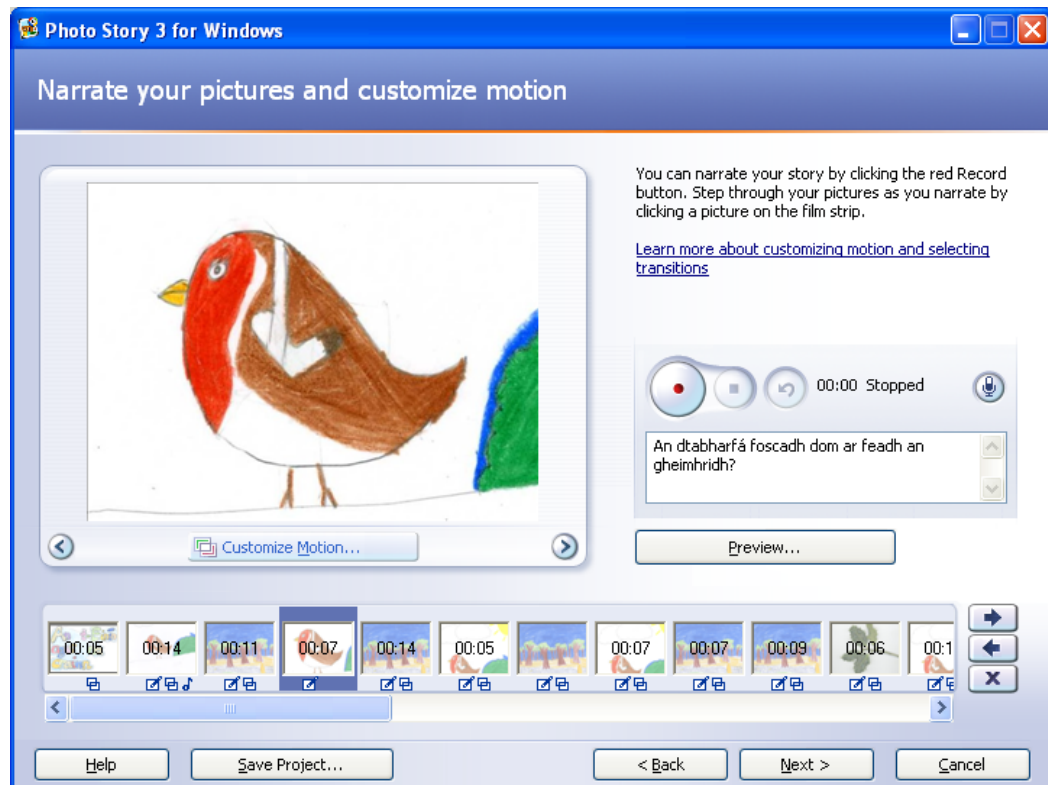
learners creating conventional Photostories in Irish, I ask them to prepare a storyboard away from the computer which helps them focus on the creative and linguistic side of the story before they focus on the technical side.

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**Figure 18 - Blank storyboard useful for developing a multimodal narrative that can be used with a tool such as Photostory**

Storyboards are commonly used in planning for film-making. This simple version, encourages learners to imagine what type of images they wish to use and to prepare a script to accompany those images. It is possible for a group of two to four learners to produce a simple conventional Photostory comprising six to ten images (sourced online), narrating a basic script in a single two hour session.

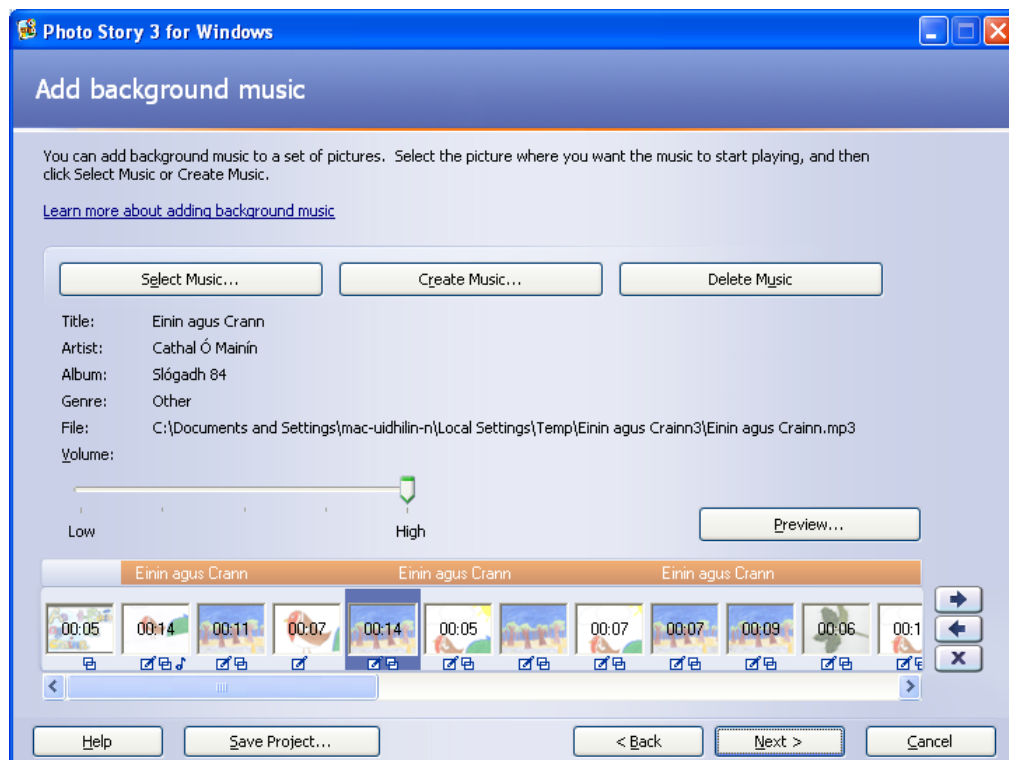
The narration associated with each picture is stored in a narration track – Photostory has two audio tracks – the narration track and a second track which is usually used to add music to a picture (see screenshot below). This track plays continuously either until it completes or until the final picture has been shown.



**Figure 19 - The recording screen in Photostory where, with a conventional Photostory, the red button is clicked and the user then records their narration into a microphone connected to the computer. This narration track is not used in the case of a pre-recorded narration track (such as a clip from the archives or one recorded at home). The music track is used instead.**

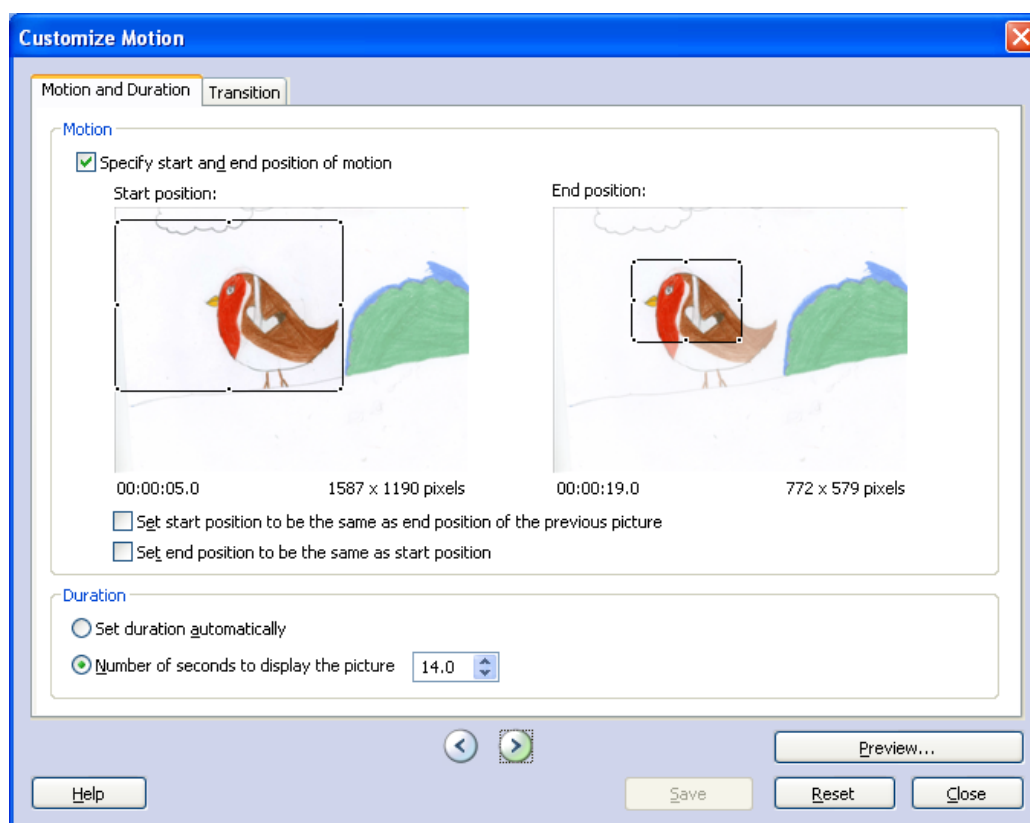
In order to create a multimodal artefact based on a pre-recorded audio clip (such as one of the clips from the radio or a recording made at home), I adapted the purpose of the music track. The audio clip is loaded as the music track and the timings for the transition between each image then need to be calculated so that the image transitions smoothly with the associated changes in the audio.





**Figure 20 - The Add background music screen in Photostory which can be used to add a pre-recorded vocal track such as a clip from the RnaG archive**

The duration that each picture is displayed for can be specified in seconds and tenths of seconds on the “Customise Motion” screen (see Figure 21). In this adapted use of Photostory, the narration track would normally be left blank for the duration of the audio clip – although it would be possible to add a narration to images appearing before the start or after the end of the audio clip. Photostory’s other capabilities include simple animations (panning and zooming), adding simple effects to the images (sepia, diffusion, etc.), superimposing text on the images and inserting transition effects between the pictures.



**Figure 21 - The Customise Motion screen in Photostory which enables the duration of the audio to be set in seconds and tenths of seconds. When Photostory is used with audio from the archives, this is the principal screen where synchronisation between the audio track and each image is perfected – where the synchronisation cycle (Figure 22) takes place**

It is only through repeated listening to the audio while previewing the Photostory that the synchronisation between narrative transitions in the audio and a change of image can be perfected. Repeated listening to comprehensible input creates the ideal conditions for language acquisition (Krashen 1981, 1982; Rost 2013). Language learners in the Inittutut project (Dicker *et al.* 2009 – described in section 3.8.1) enjoyed listening to archival recordings of elders from the local area but were not keen to listen to them repeatedly. Repeated listening can be ensured as a background task once the children are sufficiently engaged with the synchronisation process in Photostory, thus exposing them repeatedly to rich, authentic aural resources. The other factor in supporting engaged listening is the fact that working with technology can be intrinsically motivating (Cummins *et al.* 2007; Warschauer and Grimes 2007; Rost 2013) and the potential for language acquisition is increased the more the affective filter is lowered (Krashen 1982).

This attention to both image and audio in the processes of synchronisation and/or of applying animations forces the learner to be constantly shifting between modes – audio, image, temporal and spatial (when applying animations). These are all instances of synaesthesia – the essence of creativity and learning (Kress 2003; Nelson 2006; Kalantzis *et al.* 2010).

I wanted to pay particular attention to this process to monitor how engaged the children were in repeated listening to the clips, how they engaged with Photostory.

To help the children appreciate the capabilities of the software in producing a multimodal artefact based on a rich audio clip, I prepared an exemplary multimodal artefact that mixed a young boy's prize-winning oration of a story from folklore in the local dialect with a series of images that included children's drawings, images sourced online and several scanned objects. The exemplar used a wide variety of Photostory's editing features – zooming, panning and picture transitions and effects – to help to clarify the children's understanding of what they were being asked to do and also to help scaffold their later efforts with the software. It was my intention to show this during the first session when explaining the purpose of the research to them and possibly revisit it in a later session when explaining various techniques in Photostory.

Other software that I was hoping to introduce over the course of the intervention included a free and widely used sound editor (Audacity) for the purpose of editing any recordings that they brought in from home and a screen grabbing tool that comes with most versions of Windows (Snipping Tool) for the purpose of quickly producing images. I had used these pieces of software successfully with teachers who were technical novices as part of a digital literacy module on an M.A. programme, so was confident that the children would find them easy to learn.

A wiki was chosen as the knowledge base of resources and as the interface through which collaborative knowledge building could occur (following Scardamalia and Bereiter (1993, 2006); Slotta (2013)). As wikis can easily be accessed at home and in the community, the key language revitalisation recommendation of involving the home and community domains in school interventions could be implemented (Fishman 1991). A wiki also satisfied the context-based design requirements and considerations relating to implementation and spread that the technology should be low-cost or free, easy to use and maintain and accessible across multiple platforms covering the most commonly used devices in the school and in the home (a wiki is accessed via a web browser).

Before the start of the intervention, I created a private wiki with a user account for each child and the teacher. The wiki service that I chose was WikiSpaces<sup>31</sup> as I had already used it successfully with the teachers in the iTunesU project for uploading, organising and discussing the audio clips and pedagogical guidelines. This model had worked well in this context and I saw the potential for a similar model to work in the context of supporting activities across a home-to-school continuum. Wikispaces offer free private wikis to educational institutions. The wiki was only visible to these users.

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<sup>31</sup> [www.wikispaces.com](http://www.wikispaces.com)

I organised the structure of the wiki so that the iTunesU collection was readily available from the home page and created a user page for each child which would act as their 'sandbox' where they could practice editing and add content to before they started to edit the structure of the wiki and contribute new pages. The children would be encouraged to edit any part of the wiki either at school or at home. Again, in trying to maximise the children's agency, they would be assured that the wiki belonged to them and that they were free to restructure or reinvent it in any manner they saw fit.

Finally it is worth noting that I expected to spend a significant amount of time both before the start of the intervention and between sessions setting up and supporting the tools and materials listed above.

#### *5.4.2.2. Task Structures*

To facilitate the children in identifying the audio clips that they wished to use in creating their multimodal artefacts – initially from the iTunesU collection and in anticipation of them producing audio clips at home, it would be an important first step to get them to listen extensively to the collection (following Renandya and Farrell (2011), Rost (2013)). It was hoped that this would give them an appreciation of the scope of the collection and the various genres included in it. The clips would also act as exemplars of each genre which the children could then try to emulate with their own recordings. An entire session would be put aside early in the intervention for the purpose of sparking the children's interest in one or more clips of one or more genres that they could then choose as the basis of their first multimodal artefact.

The critical task of the intervention was the creation of the multimodal artefacts. As the preliminary sessions would be exploratory in nature and also a process of getting-to-know each other and the research setting and goals, it was my intention to implement a prototype of the design (following McKenney and Reeves 2013). This would be in the form of a mini-walkthrough of the process where the children working in groups would create their first multimodal artefact based on a single exemplary clip from the iTunesU collection – similar to the exemplar that I had previously prepared and shown to the class.

It was intended that the preliminary sessions (phase 1a) would be conducted before the Christmas break. This mini-walkthrough of the design would help me quickly assess many aspects of the design in this particular context and highlight any issues that might need to be resolved before the start of the full implementation of the design. I was particularly interested in seeing:

- how the children engaged with the iTunesU collection

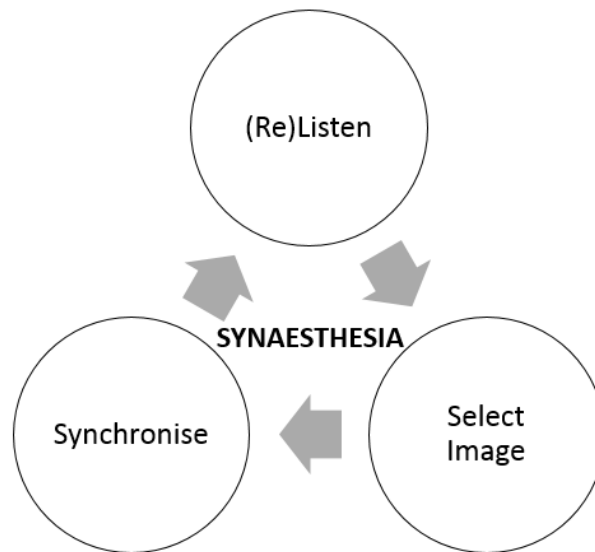
- how strong both their and the teacher's digital literacy skills were and related to this how long it took them to complete various tasks
- how the technology functioned in the classroom
- what kind of pedagogical environment existed in the classroom and related to this how the children related to one another
- the level of collaboration among the participants (both children and adults)
- the process of artefact creation and the finished artefacts

It was not practical, due to time constraints, to introduce the wiki during the preliminary stage although the request for resources from home was made from the outset. The preliminary sessions were intended to ensure that various methodological issues were also tested (e.g. camera position, audio capture, post-session debriefings with the teacher, etc.).

The full implementation of the intervention (Phase 1b) would start after Christmas at the start of the second term. This was planned to start with tasks that focused on the children working in groups (preferably) or as individuals in creating multimodal artefacts based on their choice of clips from the iTunesU collection. An early session of extensive listening was planned to help them identify clips upon which their second multimodal artefacts would be based. Analysis of the preliminary phase could affect these plans.

Maximising agency throughout the intervention was an underlying factor informing the design of the task and participant structures. In this instance giving them the freedom to choose their own audio clips was intended to help them start to take ownership of them.

I anticipated that the process of taking ownership of resources would be fully instantiated while the children were engaged in creating their artefacts. Re-presenting the audio in multimodal form using Photostory involves a synaesthetic meaning-making process (following Kress 2003) whereby the digital audio artefact becomes a new multimodal digital artefact. This immerses the child in a highly creative process the nature of which necessitates a **synchronisation cycle** of listening, selecting images, synchronising the images with the audio and re-listening with this process continuing until the entire set of images is synchronised in a manner that reifies the child's (or better still the group's) meaning making in the new multimodal digital artefact (see Figure 22).



**Figure 22 - The synchronisation cycle**

This is the core of the deep engagement that was expected to be evidenced as observable interactions during the intervention. Furthermore, if resources were brought in from home (images, texts, artefacts or recordings) and used in later multimodal artefacts, it was expected that the engagement would be deeper still.

The intrinsic nature of the multimodal artefacts emphasizes oral and aural language combined with visual images over the written word which helps address a concern of the research relating to native speaking children whose dialects can often clash with the Official Standard (Ó hIfeárnáin 2008; Ní Chonchúir 2012). Photostory has the capability of adding text to an image but this feature was not used in the exemplary artefacts and would not be encouraged unless the children wished to add an opening title or final credits to the multimodal artefact.

The children would be encouraged throughout the intervention to engage with the resources at home. This would be facilitated using the wiki which had been pre-populated with the iTunesU collection and which was to be regularly updated with newly digitised resources as and when they were brought in from home. The children would be encouraged from the outset to bring in existing artefacts from home of cultural, linguistic or of personal value that could be digitised and used in the production of multimodal artefacts. These could include pictures, texts or objects. Any non-digital resources brought in from home were to be digitised and parents assured of their subsequent prompt return.

As the intervention progressed, greater emphasis would be placed on asking family members to participate with the children in knowledge consumption (e.g. viewing pictures or listening to audio clips together) and knowledge production (e.g. adding information to the wiki together or interviewing and recording a family-member). This type of intergenerational interactivity was intended to strengthen home-school-community links. The deep engagement with these resources which was likely to have

started during the course of their production would likely be further reinforced in the process of creating a multimodal artefact based upon them. I envisaged that a child engaged in the synchronisation cycle (Figure 22) of listening and re-listening to a recording of a family member while choosing images to accompany the various transitions in the audio would pay particular attention to the process leading to a deeply personal and engaging experience.

How the children worked through this task and how interested/engaged they were during the process both at school and at home of key significance to the success of the intervention and ultimately of the research itself. Their engagement at school would be evidenced in their observable interactions and utterances as well as their feedback during focus groups. Their engagement at home would only be evidenced in the reported interactions but both myself and the teacher intended to seek feedback about this on a regular basis. This feedback coupled with my post-session debriefing sessions with the teacher could generate changes to the design of subsequent sessions.

Finally the children would be expected to collaborate together in making their work available to their school and home communities using the wiki. Whereas the development of the multimodal artefacts was a group- or individual-level task, the development of the wiki was to be a whole-class task. The wiki would be a space for knowledge building with each of the children having an opportunity to showcase both their prior knowledge and newly acquired knowledge in a safe online environment.

I envisaged the wiki starting off as a series of disparate pages but gradually coming together over the course of the intervention with the children initially contributing to the development of individual pages but later to the organisation and presentation of a coherent whole which they could then showcase to their community as “this is what we as a class have achieved”. At the very least, I expected that each child would create a wiki page to display their multimodal artefacts and the resources that they had brought in from home as well as other resources that they discovered and found interesting over the course of the intervention.

In the context of the intervention being primarily about developing speaking and listening skills in the vernacular, I had some concerns about wikis being intrinsically a platform built around the written word (Warschauer and Grimes 2007; Lankshear and Knobel 2011) when there is a tension between the standardised written form and the vernacular in the Gaeltacht (see Section 2.5.4). Although text is the glue that keeps a wiki together, it is possible to design wiki pages where text is *only* the glue that structures files of other media types. It was in this context that I envisaged the children using the wiki and I would try to keep the emphasis on text for meaning making at a minimum.

Implicit in all of the above task structures is the continuing development of the digital literacy of the children and the teacher. For example, although not a specific aim of any of the sessions, I

expected that their file management techniques would improve over the course of the intervention as this is a fundamental skill required in managing digital resources (e.g. copying, moving, uploading, etc.). Similarly, an understanding of image resolution and minimum acceptable standard for use in creating their multimodal artefacts was another topic that they would need to understand. Another topic was how to use the MP3 recorders (particularly if they were to make recordings at home) in terms of where to place them, ensuring the recording levels were properly set, making a test recording, simple interviewing techniques to encourage good responses from the interviewee and basic sound editing techniques using Audacity (open source sound editing software).

#### *5.4.2.3. Participant Structures*

Following a sociocultural perspective, the children would be encouraged to work collaboratively in groups of two or three but would also be facilitated if they had a strong desire to work individually. Working collaboratively with technology also makes sense from a practical point of view. Few schools in my experience possess one computer (or similar device) per child so even if there was a pedagogical argument towards a design involving individual tasks, it would unlikely be feasible in most schools. The class would also be working collaboratively in building knowledge on the wiki. This whole class activity would instantiate their activities within the collective ZPD of the classroom (following Moll and Whitmore 1993).

A further design decision in relation to pedagogy was to maximise agency given to the children in terms of the themes that they chose to pursue, which resources they would use (audio, images, etc.) and who they wanted to work with in terms of group composition. In relation to language acquisition, increasing learner agency can lower their affective filter which increases the likelihood of acquisition when exposed to comprehensible input (Krashen 1982).

From the outset, it was planned that an intervention in a school would culminate with a presentation of the children's work to the local community. Knowing that their work was to be showcased in this manner encouraged the children to focus their efforts in creating artefacts that they could be proud of and that were likely receive positive feedback and affirmation of self from an audience consisting of the most important people in their lives (after Cummins and Early 2011).

As is typical in DBR projects, the researcher would work with the teacher as a full collaborator and each session would conclude with a debriefing session the purpose of which would be to discuss how the session went, what might be improved upon and what was planned for the following session.



#### 5.4.2.4. *Discursive Practices*

Collaborative groups make meaning through social interaction<sup>32</sup>, therefore, the classroom environment should be one conducive to open collaboration and talk around the resources and the technology amongst the children and between the children and the adults. This culture should extend to online interactions and as part of ensuring this was the case, it was intended to discuss online safety and the importance of respecting one another while online.

These practices would be particularly useful in small Gaeltacht schools in which classrooms contain multiple classes where an overworked teacher can be supported by older children assisting younger ones and/or native speaking children assisting non-native speakers.

Knowing the teacher in advance meant that I was aware that the likely pedagogical environment that I would encounter in the school would be a child-centred one that encouraged learning through social interaction in a technology-rich environment. A more traditional/authoritarian approach would likely be a challenge to the success of the intervention.

It was also important that the teacher regularly encourage the children to engage with family members and significant others at home in relation to the intervention and its resources. The teacher and the researcher would regularly ask the children about the nature of their engagement at home over the course of the intervention.

#### 5.4.3. **Mediating Processes**

This section describes the mediating processes that were expected to be manifest as a result of the embodiment (Section 5.4.2) of the high-level conjecture (i.e. the research aims) in the design. The three processes are observable interactions, participant artefacts and reported interactions. Should my analysis of these phenomena evidence the salient features described below, it would help to validate the design conjectures relating to the practical decisions (tools, materials, task structures, etc.) in setting up the intervention. Should the analysis of the mediating processes show evidence of them leading to the desired outcomes, it would help to validate the theoretical conjectures underlying the design. In cases where the types of mediating process outlined below were not evident or not as expected, the design would need to be revisited. In cases where they were evident but did not lead to the desired outcomes, the theoretical underpinnings of the design would need to be re-evaluated (Sandoval 2014).

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<sup>32</sup> See section 3.2.1

#### 5.4.3.1. *Observable Interactions*

The mediating processes that I expected to see in terms of observable interactions included the ways that the children interacted with the tools and materials. I was interested to see how they engaged with the rich language resources that were provided for them and also with the ones that they brought in from home, how they worked with Photostory in creating their multimodal artefacts from these resources and how they used the wiki for knowledge building and for publishing their work. Examples of what I was hoping to see include repeated listening to audio clips, prolonged viewing of images and talking positively about the resources. This would be evidenced by their actions and their utterances which I would observe first hand during the sessions and could then subsequently review on video. As technology is often intrinsically motivating for children (Cummins *et al.* 2007; Warschauer and Grimes 2007; Rost 2013), I expected to observe the children being excited about using technology. I was also aware, however, that technology can also be intrinsically distracting.

I was interested to see how they would work with the technology and if their digital literacy skills were sufficiently developed to work with the various pieces of hardware and software. As well as the prescribed technologies, I was also interested in seeing what other technologies they used in the course of their explorations and what level of scaffolding was required to support them. Also of interest was the nature of the collaboration during the creation of the multimodal artefacts – e.g., what was the nature of the different groups' dynamics? were they supportive of one another? did strong personalities take over? and so on.

A further interaction that would be noteworthy was that between the children and the adults in the room. How did the teacher engage with the intervention and with the children during the course of the intervention and vice versa? Similarly, I was conscious of my own role as co-facilitator with the teacher and how this affected the outcome of the intervention. It was key that both the teacher and I were present for all of the sessions so that we could learn from one another and collaborate fully on any changes to the design that may be required to attain the principal outcomes of the intervention (following Gravemeijer and Cobb 2006).

A final small, but important interaction was the community presentation at the end of the intervention and how the children presented their final multimodal artefacts and how their families reacted to them.

#### 5.4.3.2. *Participant Artefacts*

The artefacts that the children were to produce would be reifications of their meaning-making processes or “proxies for learning processes” (Sandoval 2014, p.23), analysis of which would glean

evidence of their level of engagement with the intervention and of the extent to which they achieved the desired outcomes.

The principal artefacts would be the multimodal artefacts but they themselves are composed of simpler artefacts in various modes – primarily audio clips and digital images. The children's early multimodal artefacts were expected to be more generic with their choice of rich language audio clips and images coming from existing collections (the iTunesU collection and probably Google Images or the school's collection of images). As the intervention progressed, artefacts from home were expected to arrive, be digitised and then uploaded to the wiki.

These artefacts from home would be evidence of the intervention crossing the school-home-community divide and of the production of new language/knowledge resources. The nature of the artefacts was of keen interest. Early artefacts might be as simple as a photograph brought in to be scanned. Particular value would be placed on artefacts *produced* at home with a significant other (e.g. an audio recording with a grandparent) as this would provide evidence of the intervention having created new opportunities for intergenerational transmission.

It was intended to examine the children's multimodal artefacts in terms of the types of audio clips and images chosen. Of particular interest was how they synchronised both modes. Did the synchronisation produce a cogent narrative in the final multimodal artefact with images transitioning seamlessly with changes in the audio narrative? This would provide evidence of engagement with a synchronisation cycle (Figure 22) necessitating repeated re-listening to the audio as timings are perfected and a deep engagement with rich language resources.

Also of interest was to investigate, as the intervention progressed, if the children started to make use of more artefacts brought in from home in their multimodal artefacts? This would provide evidence of strengthening home-school-community links and was likely to engender still deeper engagement with the resources as a result of an increasing personal connection with the resources. These multimodal artefacts were envisaged to be further infused with the children's interests and identities while still retaining a richness in language.

Another artefact worthy of analysis would be the wiki. Of interest was how the children engaged with it. Did they limit their editing to their sandbox pages or did they create links between pages, new pages, or alter the structure? If they uploaded files, what type of files were they? All of these factors would be evidence of the level of knowledge building that they engaged in.

Of particular interest was whether they engaged with the wiki at home and if so, what the nature of that engagement (editing/uploading or simply browsing) was and did someone else at home

participate? This could be checked to some degree by checking the history/log files of wiki pages but could be more easily verified through the children's reported interactions (see below).

Although the training in wiki editing would emphasize the use of the wiki for showcasing their artefacts, I was still interested in seeing if the text-based nature of wiki editing posed any problems for the children in achieving this. This could be evident in errors in the wiki code, broken links or simply a lack of content appearing on the wiki.

Coupling analysis of their artefacts with observable actions of them creating their multimodal artefacts would provide triangulated evidence of their levels of engagement in the process.

#### *5.4.3.3. Reported Interactions*

Very important to the success of the intervention was the children's engagement with it at home. It was beyond the scope of the research to investigate this directly, therefore the evidence for this was based on the children's reported interactions with the resources at home either alone or with a significant other. It is useful to categorise the nature of home engagement in terms of consumption and production. Early interactions around the resources were likely to be in the form of language or knowledge consumption – e.g. listening to a radio clip or looking at a picture at home. This would preferably be with a family member with whom a discussion might ensue relating to the resource resulting in the consumption of possibly new forms of language or knowledge.

It was hoped (and the children were also encouraged) that later home interactions would result in knowledge production alone or with a significant other – e.g. editing the wiki or interviewing and recording a family member recounting memories or stories from their youth resulting in the consumption and production of possibly new forms of language or knowledge. The teacher and the researcher were both aware of the importance of these interactions and asked the children on a regular basis about whether they were accessing the resources at home and what the nature of that engagement was and with whom were they engaging with the resources. These reported interactions were expected to show evidence of intergenerational interactivity around rich language resources either in the form of consuming or producing resources together. This could create new opportunities for the intergenerational transmission of the language. It would also illustrate how technology can strengthen home-school-community links.

#### **5.4.4. Achieving the Desired Outcomes**

The conjecture map in Figure 16 illustrates “the hypothesized learning trajectory” (Sandoval 2014, p.24) for the learners. Should the trajectory be followed, it was expected that evidence would be gathered through the mediating processes of the desired outcomes being achieved.

Referring to the conjecture map, deep engagement with rich (authentic) language resources would be expected to be seen in the amount of time that children spend working on their artefacts, in their talk while working and in the nature of the artefacts themselves. The production of new resources and knowledge building on the wiki would be evident in their production, the nature of which would be the subject of analysis. The creation of new opportunities for intergenerational transmission would be evident in the reported interactions of the children at home, in the artefacts and knowledge that they bring into the school. Traces of these would also likely be seen in the artefacts that they create in school. The strengthening of home-school-community links would also likely to be evident in the children's reported interactions of the use of the technology that links the school and the home and in any feedback that the teacher receives from parents or other community members. The development of the digital literacy skills of both the teacher and the children would be evident in the observable interactions in the classroom and in the artefacts that they create. The pride in showcasing achievements to community would likely to be evident at the community event to be held at the end of the intervention in a school where children would get the opportunity to showcase their work in front of loved ones and also possibly members of the wider community.

## **5.5. Summary**

This chapter outlined the origins of the research in work that I conducted as part of a project that made rich audio clips from the Raidió na Gaeltachta archive available on COGG's iTunesU channel. Working with a committee of Gaeltacht educators and the field work that I did in Gaeltacht schools helped to inform the context-dependent design requirements that ensured that the intervention that was designed would be implementable in a typical Gaeltacht school.

The literature reviews outlining the problem (Chapter 2) and the potential pedagogical theory that could best design a solution to that problem (Chapter 3) informed the design of the intervention. A conjecture map (Sandoval 2014) was used to illustrate the complex embodiment of the design in terms of tools and materials, task structures, participant structures and discursive practices. It was hoped that these working in tandem, would produce mediating processes that would show evidence of the desired outcomes being achieved.

## **Chapter 6 – Preliminary Phase 1a and Exploratory Phase 1b in Scoil Chluain Locha**

### **6.1. Introduction**

This chapter outlines the implementation of the first phase of the intervention in Scoil Chluain Locha in Conamara. The first phase consisted of two sub phases:

- Phase 1a was a preliminary phase of three two-hour sessions to enable familiarisation between the participants and I and to implement a prototype of the design. Efforts to achieve some of the desired outcomes were either postponed (deep engagement with rich language resources) or omitted entirely (the home-school-community link and knowledge building on the wiki).
- Phase 1b was an exploratory phase of seven two-hour sessions which enabled me to view how the children engaged with a number of different technologies around rich language resources to inform the design of future iterations as to what technologies best suited the context. I was expecting to see the types of mediating processes that would lead to the desired outcome of the intervention (as specified in the Conjecture Map – chapter 5, section 5.4).

The results are set out in narrative form and are generally temporally ordered describing “the history and evolution of a design over time” (Hoadley 2002, p.2). They were generated from the emergence of the theoretical categories during the analysis of the video data (see Chapter 4, Section 4.5.1). The narratives for Phase 1a are set out in Section 6.3. The narratives for Phase 1b are set out in Section 6.4. The chapter also includes a narrative that analyses the children’s artefacts from Phase 1b. This incorporates the participants’ learning trajectories over the course of the phase (Section 6.4.6).

The chapter concludes with a discussion across the narratives which draws heavily on my post-phase interview and design meeting with Múinteoir Bríd which justifies the refinements to the design that are outlined in the final section.

### **6.2. Description of the local context – Scoil Chluain Locha**

Scoil Chluain Locha is a small two-teacher primary school in a Category A area of the Conamara Gaeltacht. Many of the schools in Gaeltacht areas are small schools located in areas with diminishing local populations (Mac Donnacha *et al.* 2005). Only a small number of children enrol each year resulting in several classes being amalgamated. In the case of Cluain Locha, there are two classrooms – one containing Naíonáin Bheaga up to Rang 2 and the other Rang 3 to Rang 6 (where I was located).

Múinteoir Bríd is the school principal and also teaches Rang 3 to Rang 6. She is extremely busy as a result of this dual role. She is able to draw on several schemes to alleviate the pressure somewhat. Scéim na gCúntóirí Teanga<sup>33</sup> entitles her to a language assistant for four hours a week from September until May. A resource teacher also visits the school for ten hours a week. These hours are usually allocated to the younger classes, so Bríd is usually trying to manage four classes in the one room on her own.

I already knew Bríd from when she was a Master's student on a course I was teaching on and knew that she was passionate about trying to encourage Gaeltacht children to develop their language and that she was always interested in providing new opportunities to them to do this. I also knew that she was an advocate of using technology at every opportunity in the classroom.

She had already worked with me in identifying resources and writing pedagogical plans for the iTunesU collection, so was familiar with those resources and with using a wiki as a platform for development. When I asked her at the start of the 2013-2014 school year if she would be willing to collaborate in this research, she was immediately both enthusiastic and active in making suggestions about how we could develop an intervention. She told me about the school's enthusiasm for technology and of some of the ways that they were using desktops, laptops and iPads to support learning in the classroom.

I outlined some of the theoretical assumptions (as outlined in Chapter 3) underlying the approach that I wished to take in the intervention. Bríd was familiar with these having been a student on the Master Degree that I taught on that had a sociocultural perspective on learning. I emphasised the notion of identity texts in particular and how I felt that technology coupled with multimodality could extend this approach. Bríd could see that the elements of theory and practice in these approaches were aligned to her teaching practice. She had already used some of the iTunesU resources with the children but was unfamiliar with some of the technologies that I was hoping to introduce to the classroom but was eager to learn. I explained the design-based research methodology to her and that she would have a key role as collaborator and co-designer of the intervention (Section 4.2.6). I also explained why making video recordings of each session, the post-session debriefings, the interviews and focus groups was so important.

Having experience of visiting a number of primary schools in the three main Gaeltacht areas (in Donegal, Kerry and Galway) and having seen little evidence of them using Irish socially outside the

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<sup>33</sup> See section 2.5.5

classroom, I was struck by the children's social use of Irish among themselves as they were leaving to go home the first day that I arrived to set up some of the technology in the classroom.

The classroom itself had an eclectic mix of the old and the new. On the wall was an old blackboard, a standard whiteboard and an interactive whiteboard each of which appeared to be in use. The teacher's desk was at the side of the classroom rather than in front of the boards suggesting that Bríd was more a 'guide on the side' style of teacher. The classroom was full of various types of technology – laptops and iPads on the children's tables and computers, a printer and scanner set on wall-mounted desks which the children could stand at when they wanted to use one.

I spent several afternoons there after school had finished in November 2013, installing the various software packages that would be required for the intervention. It gave me a chance to get acquainted with Bríd as a principal and as a teacher in her own environment. She had told the children about the work they were going to do with me and reported that they were very excited about it.

On Bríd's suggestion, we held an information evening in the school in advance of the project for parents to meet me to find out more about the project before they decided to grant their consent. This was well attended and the parents were both positive and interested in the project and didn't raise any concerns.

Class	Name
Rang 3	Harry, Cormac, Labhrás
Rang 4	Fionn, Aoife
Rang 5	Ruán, Sorchá
Rang 6	Niamh, Oscar

**Table 8 - Children and Classes in Scoil Chluain Locha – all pseudonyms**

There were nine children in Múinteoir Bríd's classroom ranging in age from eight to twelve. Their distribution among the various classes is outlined in Table 8. I arrived there in at the start of December three weeks before the Christmas holidays.

### **6.3. Phase 1a – Cluain Locha, Preliminary Sessions: Familiarisation and a Lightweight Walkthrough of a Design Prototype**

As there were only three preliminary sessions to be held before Christmas, it was essential that the intervention got off to a positive start, to try to ensure that the children would be looking forward



to the start of the main sessions (Phase 1b) after Christmas. I therefore set the focus on familiarising myself with the children and the teacher and their digital literacy skills as well as the classroom environment (e.g. seating arrangements, technology set up, etc.), and the teacher's pedagogical approach (e.g. freedom of movement, of talking, etc.). The children and the teacher were also familiarising themselves with me, the research goals, the new hardware and software that I was introducing and the fact that a camera would be recording them during the sessions. It also provided me with an opportunity to refine some methodological issues (camera position, audio capture, format for the debriefing sessions with the teacher, etc.).

The plan for these sessions was to implement a simplified prototype version of the design (following McKenney and Reeves 2013). The children would complete a simple multimodal artefact based on a prechosen audio clip and in the process engage with the rich language contained within it. While there was a hope of seeing some initial evidence of the kinds of mediating processes described in chapter 5, of greater importance were positive and enjoyable explorations in technology being negotiated by the researcher, teacher and children. The real effort to achieve the desired outcomes would not be tackled until the sessions after Christmas (Phase 1b).

The aim of the first session was to familiarise the children with the iTunesU collection. Three groups of three children from different classes were chosen by the teacher based on her experience of who worked well together. Each group was provided with an MP3 recorder/player preloaded with the iTunesU collection (organised in folders according to genre), an audio splitter and a set of headphones for each child.

The excitement in the class was tangible with exclamations of 'oohs', 'ahhs' and 'cool!' from the children as I handed out the equipment for the first time and explained how to set up and use the various devices and how to access the resources. I was extremely conscious of the importance of them enjoying the first session, and I was very pleased to see their smiling faces and hear their laughter as they started to listen to the clips. I guided the groups towards some of the funniest clips, and towards clips that they were likely to be familiar with – songs they were likely to know and riddles that they might recognise or try to guess the answer to. I tried to focus them more on their own dialect as working with the familiar was likely to prove more successful than something entirely new.

These initial forays were positive, but once they had listened to the familiar and to one or two stand-out pieces that were particularly funny, the children's interest in the activity waned quite quickly and they showed much greater interest in making funny improvised recordings using the MP3 recorders. As I struggled to re-direct the children toward the listening resources and in particular the clip that I wanted them to base their first multimodal artefact on, I came to the realisation that many of the clips

which had been identified as being worthy resources for an Irish-medium classroom, were perhaps *too worthy* for this intervention. This was because the iTunesU clips had been selected for teacher-directed listening activities in the classroom. This may not have been the ideal starting point for an intervention focusing on child-generated resources that are dedicated to extending their reach beyond the classroom and into the home creating new opportunities for intergenerational interactivity.

The intervention was trying to maximise the children's agency by allowing them to choose which clips to listen to, in their explorations with the MP3 recorder and the iTunesU collection. While the collection contained a large number of rich clips, the choice was in some ways quite narrow having been selected by a panel of teachers and offered little opportunity for identity investment as the children had no personal connection with the people in the clips. Rost (2013) highlights the concept of relevance when trying to engage language learners in listening activities "it is through listening to **relevant input** and taking part in meaningful interaction that the actual gains are made and defines relevant learning materials as those which "relate to learner goals and interests, and involve self-selection and evaluation" (p.161).

In prioritising learner agency, the second part of this definition had been implemented, but evidence of the children's engagement suggested that the collection didn't relate to their goals or interests. An early reflection illustrated my own doubts about continuing to use the collection:

Do I need to revise planned use of archive material? Should I search the archive for material based on the theme they wish to cover after Christmas? What about children searching the archive themselves? Replicability of this model?

(reflection after preliminary session i)

The ultimate aim of the children's explorations with the iTunesU collection was to scaffold them towards making similar recordings of someone at home. Such a recording on its own would be a reification of a deeply meaningful intergenerational transmission in an audio (unimodal) artefact. By encouraging a child to create a multimodal artefact based on this, and engage in a listening-synchronisation cycle (Figure 22, p.128), I expected this to lead to a deeper engagement still.

So, in spite of their waning interest in the collection, I saw their explorations in using the Record function on the devices as an opportunity for them to practice using this function and to get comfortable with the idea of recording other people. The teacher and I embraced this and for the remainder of the session, we quickly created role-play scenarios where the children in each group recorded themselves taking turns at being an interviewer with the other children pretending to be various famous people. All of the children actively took part in this and there were regular hoots of laughter as they listened back

to themselves using their headphones connected to the audio splitter. They also connected to the splitters of other groups to listen to their interviews.

### **6.3.1. Production of the children's first artefact**

Time was pressing as I was anxious that they complete as much as possible of the process of creating a multimodal artefact in the remaining two sessions in order to help develop the various skills required. This would also help scaffold the children for the first full implementation of the designed intervention after Christmas. The lukewarm reaction towards the iTunesU collection coupled with the children's enthusiasm towards recording themselves and towards role play prompted a change of plan.

From my experience of delivering workshops on digital story making, I knew that the children would be more likely to complete a conventional Photostory in the remaining two sessions than one based on the audio clip I had selected primarily because it is much easier to source images for a conventional Photostory and also the synchronisation cycle would not be necessary.

In trying to maximise agency and enable identity investment, I gave the groups complete freedom in their choice of theme for their first multimodal artefact. This engaged them immediately. The two groups of boys quickly chose sporting themes (soccer and wrestling). After some deliberation the girls chose Nelson Mandela as their theme. Due to time constraints I suggested that they plan to use between six to ten pictures in their stories. I also explained to them that they would be presenting their completed stories to the class at the end of the session 3, mirroring the plan to showcase their work to the local community on the completion of the intervention. The only other condition that I attached to the task was that every child in a group would have to perform part of the narration.

The teacher and I suggested two types of narrative that the children could use when creating their multimodal artefacts – a standard narrative in the third person accompanying each picture or a more dramatic narrative featuring a narrator and scripted roles for the characters in the story. The wrestling and Nelson Mandela groups stuck to the standard model while the soccer group created a dramatic narrative. I gave each group blank storyboards (Figure 18) to plan for their stories with space to sketch the type of pictures that they would like to use and also write a simple script to accompany each picture.

The children worked diligently for the remainder of the second session in developing their storyboards and in searching online for images to match their intentions. The main aim of the third session was that every group managed to complete their artefact. I gave them a quick tutorial on how to use Photostory and on how to use the microphones to ensure that their voices were clear. This session showed evidence of them having a much greater self-consciousness about recording themselves

than appeared to be the case based on their explorations with the recorders in the first session. One of the boys, Ruán, was initially reluctant to record himself:

*Ruán: Níl mise ag iarraidh. Ní maith liom é*  
*Niall: Ní maith leat do ghlór féin an ea?*  
*Ruán: Tagaim amach creepy ... Ceapaim go n-airím aisteach ar .....*  
*Niall: An mbainfidh tú triail as?*  
*Ruán: Alright*

Preliminary Session iii, Cluain Locha

Once they began the process, though, there didn't seem to be any issues with self-consciousness. All of the children were active in the process of creating their artefacts and were very happy to present them to the rest of the class at the end of the third session with some repeatedly asking for their stories to be played again.

By the end of the third session, the youngest group of boys (Harry, Labhrás and Cormac) had completed their wrestling story while the other two groups managed to complete roughly half of their stories (soccer – Oscar, Fionn and Ruán and Nelson Mandela – Niamh, Sorchá and Aoife). The themes chosen by the children for their artefacts, drawn completely from popular culture were certainly authentic and infused with their identities. When they were played for the rest of the class at the end of the final session, there was great excitement and sense of anticipation in the classroom. As each child in each group recognised their own voice during playback, a thrilled look crossed their faces as they looked around at the other children knowing that this was their moment.

I had experienced a similar atmosphere many times in the past in workshops with Irish learners and the reproduction of these types of digital story to an audience of peers is usually a very engaging and enriching experience. Despite the success of these sessions in the production of multimodal artefacts that were engaging and infused with the children's identities, these types of production, based solely on the children's interests and on scripts drawing on their personal language resources were unlikely to lead to them encountering or engaging with rich language resources which was one of the principal desired outcomes of the research.

For example, the script that the wrestling group developed for their multimodal artefact consisted of relatively simple sentences where two American wrestlers engaged in a "TLC match" and made liberal use of English terms (ring, match, headlock, commentators) and wrestling-specific acronyms (TLC = Table, Ladders and Chairs, STF = Stepover Toehold Facelock) in their story. The children were highly engaged while they created their artefact and were proud to present it to the class and while the content would likely garner praise from loved ones at home, it was unlikely to engage members of other generations in a manner that could lead to language or knowledge development.

I conducted a brief focus group at the end of the final session and the feedback from all of the children relating to the entire process was extremely positive with several of them asking if they could create another Photostory. We discussed how they typically use the computers in the classroom and the children described how most of their work is done via the written word in MS Word and PowerPoint. They declared a strong dislike of Word which Bríd suggested was because their typing skills are so slow (something that was to impact the use of the Wiki in Phase 1b). We also discussed their experiences of spoken Irish compared to Irish in text and they were immediately able to give a series of examples where the two diverge. We discussed the merits of combining text with pictures (PowerPoint) compared with voice with pictures (Photostory) and they showed a strong preference towards the latter.

Throughout the three sessions, the children remained interested in their own and in each other's creations. They were comfortable moving between groups and were eager to show their progress to one another, regularly plugging their headphones into another groups' audio splitter and then talking and laughing about what they had done or were planning to do. I had already observed that this was illustrative of the general approach taken by the teacher in relation to the children's freedom to move and to speak in the classroom environment. I could see similarities between this and the teacher's approach described in Moll and Whitmore (1993) – see chapter 3, opening vignette – that the children had a sense of ownership over their environment and their learning. This was particularly conducive to supporting a culture of collaborative learning.

### **6.3.2. Reflections**

The importance of completing the process of producing an artefact proved invaluable to informing the subsequent iterations of the intervention. Several useful issues emerged relating to the classroom environment, the technology set up and the children's technological skills. Having to rearrange the classroom to get as many of the children as possible into shot when recording the sessions meant that the children were seated in their groups (rather than standing at wall-mounted desks) while working on the computers. This reduced the tendency of the children to wander over to other groups which was very common in the second session and increased the amount of time that the children spent working on the computers.



**Figure 23 - Wall-mounted desk for desktop computers in Cluain Locha suited short usage rather than collaborative learning**

Another environmental issue that emerged related to noise levels in the classroom affecting the recordings that the children were making. This became apparent during the presentation of the stories to the class where background noise could be clearly heard affecting the quality of the audio. We agreed that future recordings would ideally take place in a quiet environment such as a separate room or at lunchtime when the rest of the group were outside. This observation should also be useful for children planning to make recordings at home.

An issue that became a dominant technical issue throughout the intervention and that I began to notice in the preliminary sessions related to resources being scattered across different devices. Files were being stored locally on the various devices in the classroom – desktops, laptops and iPads. At the start of a new session, the children would look for the particular device that they were using the previous day. This led to delays and frustration at times as devices were checked for particular files. I expected that the introduction of the wiki after Christmas would address this issue as the resources would be available to the children through a browser from any device.

The children's digital literacy skills were more developed than I had anticipated and far more advanced than many of the student teachers that I work with. They were comfortable working simultaneously on multiple devices with multiple windows open. They were able to navigate the slightly awkward user interface on the MP3 recorders with ease. They connected the audio splitters correctly to various devices and similarly so the microphones. They were also comfortable working with Photostory with only minimal levels of support required. The only caveat to this was the level of distraction caused by some of the technology, and in particular the iPads. Several times during the sessions, various tones and chimes would be emitted in an unprompted and unwanted manner from an iPad. These came from various apps that had been installed and were a source of distraction during the course of the intervention.

There were more devices than children in the room and the children were free to consult a laptop or an iPad as and when required. This was a novel experience for me as I was more accustomed to schools with child-to-computer ratios of 3:1 or 4:1 and with computers often kept in a separate room

where children could 'do computing' for a session as if this was somehow separate from everyday activities. This was greatly facilitated by Bríd's ethos of giving them a freedom and a hunger to learn and also by the small numbers in the school as Bríd explained:

... tá go leor saoirse anseo acub ... mar gheall go bhfuil na huimhreacha beag, bíonn siad ag na ríomhairí

(Interview with Bríd, post-session iii)

### 6.3.3. Design Refinements and Planning for Phase 1b

After the third and final preliminary session, the teacher and I conducted an extended debriefing session which was part-interview / part-design and planning session. We both expressed a degree of satisfaction as to how the three sessions had gone. I was disappointed that we had been unable to stick to the original plan of developing multimodal artefacts based on the rich language clip. I speculated that this was partly related to me granting the children too much agency and that the goals of working with rich language clips had been sacrificed for ensuring that the children had an initial enjoyable experience in the preliminary sessions.

Our discussion then became centred on the best ways of achieving the outcomes of drawing on the rich language and folklore within the children's families and surrounding language community to create new opportunities for intergenerational transmission. We discussed examples from theory such as identity texts (Cummins and Early 2011) and the funds of knowledge approach (González *et al.* 2005). Bríd immediately drew an analogy to the work that the class had recently completed on the Logainm Áitiúil (*local placename*) project which was part of a county-wide competition organised by the county council where schools were asked to choose a local townland and conduct research on its geography, history and folklore.

... bhí siad ag tabhairt scéalta isteach ón mbaile nach raibh agamsa, mar ní as an ceantar domsa  
... so, bhí siad ag cur tábhacht leis an rud a bhí Mam is Daid ag rá seachas an múinteoir

(interview post-session iii)

As well as these stories from home, the class had collated images and text relating to the townland and had done a field trip where they took photographs and collected samples with a botanist. They had written up their findings which Bríd then edited to produce an illustrated book which would be the principal element of the competition entry. They also created a display on the classroom wall (Figure 24). The school had been invited to a presentation ceremony the following week where they would learn how they had fared in the competition.



**Figure 24 - Wall display for the Logainm Áitiúil project**

News of this work was very exciting, but I was a little concerned that we could be repeating something that had already been done so successfully so recently. Bríd reassured me that the project was related to a very specific townland and that there was huge potential to widen the scope of the project to the entire area and to themes that weren't related to what had been covered in the original project.

We agreed that the general theme for the main phase intervention would be 'Mo Cheantar Féin' (my local area) which we felt would enable identity investment yet maintain a level of structured agency whereby the children could choose sub-topics related to their personal interests and also draw on prior knowledge from home relating to the local area, local folklore and local history. This also, most importantly, could help retain a focus on the intergenerational aspects of the intervention by encouraging the children to engage with their families and with the wider community on the theme of 'mo cheantar féin', a process that would involve consuming and talking about existing resources and also hopefully in producing new ones. This type of engagement would likely have a consequent intergenerational use of rich language.

Now that we had settled on a theme for the first full phase of the intervention, we started brainstorming about how we should implement the initial sessions after Christmas. We were both excited about the potential of the intervention. Bríd wanted to get the children thinking about the



theme as soon as possible and thought that there would be a great opportunity for the children to engage with their families over the Christmas holidays and particularly as it's a time when grandparents are often around. She suggested that they ask at home about what Christmas was like in times past. We then prepared a worksheet with a number of questions for the children to ask about at home on this theme (e.g. what kind of food did you eat? what did Santa Claus bring on Christmas morning?, etc.). Bríd would ask the children to discuss these questions with their families at home and bring the answers in for discussion at the start of Phase 1b after Christmas. She suggested that the children could then be 'rewarded' for this work by sending them home with an MP3 recorder after Christmas to capture what they had spoken about at home in a recording, achieving a key desired outcome of the research.

I was also interested in the materials that they had produced for the Logainm Áitiúil project and saw potential in how they might be repurposed in multimodal form as part of the wider theme of Mo Cheantar Féin. Some of the resources were already in digital format (photographs taken on the field trip and the text for the competition book) but others were not – most of the wall display was hand written and hand drawn. We spoke about the persistence of digital resources and of the value of possibly scanning the non-digital materials for re-use.

Even though the reception towards the iTunesU collection was somewhat lukewarm in the preliminary sessions, I still wanted to think about how material from the archives could be brought into use in the intervention as the resources were a key source of rich language that could support the children's language development. Bríd felt sure that the local area theme would stimulate the children's interests in radio programmes related to the local area. She cited the fact that they had shown great interest in a clip from the 1980s that she had discovered in the collection earlier in the year of a boy from the local area reciting a story (he is now an adult and a neighbour of several of the children). I suggested that I trawl the radio archive over the Christmas break for programmes related to the local area and Bríd thought that the children would be very interested in such programmes.

Reflecting on my own role in the process made me conscious of the steep learning curve involved in managing a primary school classroom, particularly one in which children from four different classes were mixing. Having only had experience teaching adults, at times I felt ill-prepared working with children who were happy to fill any downtime with activity unrelated to the task in hand. My respect for how Múinteoir Bríd managed the classroom increased with each passing session.

In terms of evidence gathering, I had arranged the classroom layout so that all of the children could be captured from the camera's position in the corner of the room. The camera's high definition resolution was capturing fine details of facial expression and gesture and the camera's microphone was capturing high quality dialogue. Bríd was putting plenty of time aside at the end of the school day for

the post-session debriefings so that we could reflect together on what had worked and what had not and also so that we could collaborate in designing future sessions. I was also making use of the long drive home to capture my own immediate reflections on an MP3 recorder after each session.

I was disappointed that the iTunesU clips did not seem to be sufficiently relevant for the children to base their multimodal artefacts on. I was hoping that my search in the radio archive for programmes relating to the theme of ‘mo cheantar féin’ (my local area) would uncover an alternative set of rich language resources, ones that the children could identify more with. I was looking forward to seeing how the children engaged with this theme after the Christmas break. I was also looking forward to seeing the kinds of resources that they might bring in from home and how they might engage with the wiki when I introduced it early in the next phase of the intervention.

## **6.4. Phase 1b – Developing the Local Area Theme**

### **6.4.1. Introduction**

This iteration was very much exploratory in nature aiming to discover “what was happening?” (Shavelson *et al.* 2003, p.28) in the classroom when the children interacted with various forms of technology and with each other. There were many unknown aspects to this phase and the fact that the iTunesU Collection had been omitted from the design meant that we would be refining the design as we implemented it. Like the preliminary phase, the children would be creating multimodal artefacts but this time on the theme of the local area which was building on the work they had done for the Logainm Áitiúil project which had focused on researching the geography, the history, and the folklore relating to a specific townland in the local area. The wiki would also be introduced and the children would be encouraged to access the wiki at home with family members and significant others as well as engage in collaborative knowledge building through the creation of wiki pages showcasing the resources that they were generating at school and possibly also resources from home.

### **6.4.2. Christmas in Times Past Theme and Reluctance to Record**

Brid had set the children the task of finding out about Christmas traditions in Cluain Locha in times past over the Christmas holidays. We had prepared a list of questions for the children to ask someone at home about during our final debriefing session. When the children arrived back from their Christmas holidays, each of them had spoken to at least one of their grandparents about Christmas in times past and made notes of these conversations in their copybooks. We sat in one large group together and I asked each child in turn to talk about what they had discovered. I had originally intended on spending around half an hour on this topic, but their notes were so comprehensive and they seemed

so eager to discuss their findings with me, with Bríd and with each other that we spent most of the session on this topic.

Ruán had written far more than anyone and had retained even more knowledge than he had written as he added a lot of extra detail in our discussion. He had chosen his Mamó (grandmother) and found out much of what life was like for her around Christmas when she was growing up in Cluain Locha:

- Researcher* ... so, céard a bhfuair sí ó Santaí? ...
- Ruán* ... ní bhfuair Mamó ... ní bhfuair sí bréagáin ach gheobhfadh sí risíní nó b'fhéidir oráiste ... ina stoca ... agus mmm ... d'imeodh Mamó le mo Mhamó [sic] ... d'imeodh sí [DOILÉIR] ... dá mbeadh sí in ann caitheamh ag an Aifreann é ... le haghaidh an Nollaig ...
- Researcher* ... go hálainn ... an-deas ... [3] ... agus céard faoi crann? ...
- Ruán* ... ní bhíodh crann ann ... ach, d'úsáid siad píosa de chrann cuilinn agus ... eidhnid? [trying to pronounce what he has written] ... rud éicint ...
- Researcher* ... eidhneán? ... ab ea? ...
- Ruán* ... yeah ... eidhneán ... ivy ... agus coinnle agus mmm ... lasfadh siad ... trí choinneal agus ... [DOILÉIR] ... sin cúig is ceathair le chéile ... sin an bheirt acub ...

Phase 1, Session 1, Cluain Locha

It was interesting that Ruán had discovered a new word ('eidhneán') through the interaction with his grandmother. His difficulty in pronouncing what he had written showed that he had not fully acquired the word. He may have written phonetically what he thought she said or she may have used the English term and he had then sought a translation. What the exercise did show was that school activities can encourage intergenerational interactivity. My task in working with Múinteoir Bríd and the children was to find out if new opportunities to support intergenerational transmission could be created through technology.

Throughout the session I was struck by how deep all of the children's interest was in interacting with an older generation particularly in relation to a theme that was likely to be rich in language. I had noticed that Niamh was particularly animated when speaking about her grandmother's recollections. The teacher commented that this was the most animated that she had ever seen her – that she is normally very shy.

One of the primary aims of the intervention was that children would produce artefacts that encapsulated their own intergenerational interaction. Their notes in the copybook were already instances of this but as the teacher and I had placed particular value on combining audio with image (and possibly text) in digital multimodal form, we asked them about the possibility of taking MP3 recorders home to capture their findings. My reflections after the session, recall their response to this request:

At the end of the session I asked the children what they thought that their parents/grandparents would say if they asked them if they could use audio to record this information for the project. In general they were fairly adamant that this request would be received quite negatively – Fionn’s Mamó had said (my reading was half-jokingly) why would she be doing his homework for him, Ruán thought that his Mamó really didn’t like the sound of her voice when recorded.

(Researcher reflection, post-session 1)

It is interesting to note that this mirrors his own negative feelings towards recording during the preliminary sessions. When I spoke to Bríd after the class she felt sure that at least one grandparent (Aoife’s grandfather) would be willing to be recorded. Unfortunately, he became unwell shortly after this conversation and it was not possible to ask him to participate. I came to the conclusion that home-based recordings were too far beyond the control of the intervention and that it would be more reliable to use resources from the archives as the primary source of rich audio and whatever resources the children chose to bring in from home. We still placed great value on the children’s contributions in this session and intended that they would transfer these findings to the wiki once they became comfortable accessing it for knowledge building.

#### **6.4.3. Artefacts from the Archives Resonating with the Children**

As a result of our decision to pursue “Mo cheantar féin” as the principal theme for the intervention, I trawled the Raidió na Gaeltachta archive database over the Christmas break searching for programmes that were made relating to Cluain Locha itself or featuring people from Cluain Locha.

When radio archive was digitised in the 1990s, the programmes were stored on numbered CD-ROMs in an MP3 variant format along with a text file detailing the contents of the CD in order of filename. The filenames were ordered according to a numeric coding scheme connected to the length of each programme. Those files have since been moved to a server but are still stored in folders corresponding to CD number as it is the CD and track number (see columns CD# and Rian in Figure 25) that are used to locate the audio file corresponding to a particular programme. The archive database is currently stored in a flattened table in an MS Access database. When I was working on the iTunesU project, I found that Rannóg (there is a ‘clár do pháistí’ category) and Ábhar were the most useful fields for locating programmes that may contain content that would engage children. Irrespective of this, a simple “Find” command will find an instance of a search term in any of the fields across the table. More complex queries can also be run to generate tables of results based on a combination of search terms.

The principal search term that I used was “Cluain Locha” and related variants. I came across several hundred references to the area and copied these into a spreadsheet categorising them according to programme genre. These included children’s programmes, local history, sport, poetry,

music and biography. It was my intention to draw on the children's prior local knowledge and their expressions of interest for further themes that could be used as search criteria in the radio database.

CDID	CD#	Rian	Clár	Léiritheoir	Láithreoir	Rannóg	Dáta Craolta	Aionna	Ábhar
21672	0309	31	Anseo & Ansiúd	Pádraig Ó Catháin	Pádraig Ó Catháin	Comhrá	06/02/1977	Norwood, Bill  Breathnach, Pat Mháirtín	As Baile Átha Cliath Éanachai Parrots srl Ag Traenáil agus ag coineál éanacha.  As <b>Cluain Locha</b> Na hathraithe atá tagtha ar an saol agus ar RnaG Ard na Croise - Ag obair ann
17705	0105	20	Clár na Ceadaoine	Seán Ó Conghaile	Seán Ó Conghaile	Clár Irise	09/07/1985	Conaire, Seán Ó Cualáin, Tom Ó Murchú, Jimí Ó  Dhonnchadha, Mairéad Nic (Peigí Chluain Locha)	Aonach Ceoil <b>Chluain Locha</b>  Amhrán - Amhrán <b>Chluain Locha</b>

**Figure 25 – Two sample records from the radio database highlighting the variants of “Cluain Locha” that were searched for**

Working with a colleague, I obtained copies of these files from the radio archive. I chose to listen to programmes with the most promising subject matter descriptions first. After initially checking that basic criteria relating to clarity of speech and relevance of material were satisfied, it was often necessary to listen to many programmes in their entirety as one could never be sure that a hidden gem might appear towards the end of a programme. This was a very time consuming exercise. Although the metadata is useful in locating programmes featuring certain people or referring to certain events or places, it is only through listening to a programme that it can be assessed as to its likely relevance (after Rost 2013) or comprehensibility to primary school children. Most programmes in the archive would only be likely to partially satisfy these criteria.

I did find several entire programmes, however, that seemed sufficiently relevant to be of likely general interest to both the children and their families at home. These included several programmes from the 1980s talking about the history of Cluain Locha, the origin of the place name, local legends, etc. and a children's programme that recorded a visit by the radio to the school in 2004 capturing the children at the time singing songs, playing tunes, reciting poems, etc. I uploaded these to the wiki over Christmas so that there would be some content available to the children and their families upon its introduction.

I was unsure about how the children might want to make use of the programmes but was anxious to try to engage them with the rich language resources contained within them and hoped that the connection with local area would achieve this. I thought that they might want to make use of extracts from the programmes from the archives either in multimodal artefacts or to upload to the wiki

for knowledge building or sharing at home. It was my intention to demonstrate basic sound editing techniques to them later in the intervention so that they could extract clips for themselves which I believed would increase their connection and sense of ownership with the audio. It would also help them develop new and valuable technical skills.

#### 6.4.3.1. Vignette – Personal Connections in the Archives Resonating at Home

When discussing the programmes that I had discovered and uploaded with the children, I wanted to provide some context as to where they had come from, so I displayed a copy of the archive metadata on the interactive whiteboard. While scrolling through the archive, Niamh (6<sup>th</sup> class) pointed to the screen and asked me to scroll back up (Figure 26)



Figure 26 - Niamh notices her great-grandfather's name listed in the Radio Archive Database

Niamh ... eh ... Niall ... an bhfuil tú in ann dul suas ansin? ...  
 Niall ... yeah ...  
 Niamh ... sin é mo great-grandfather ... an chéad duine ...  
 Niall ... cén áit? ...  
 Niamh ... Seán Ó Cualáin ... athair mo Mhamó ...  
 Niall ... athair do Mhamó? ...  
 Niamh ... yeah ...  
 Niall ... ab ea? ...  
 Niamh ... yeah ...  
 Niall ... agus sílim go bhfuil sé ag caint ar sin ...  
 Niamh ... ó, an bhfuil? ...

*Niall* ... tá ...  
*Niamh* ... so beimid ...  
*Niall* ... cén bhliain é? ...  
*Niamh* ... 1981 ...  
*Niall* ... 1981? ...  
*Niamh* ... mmm, hmm ...  
*Niall* ... so, ar mhaith leatsa an píosa sin a fháil? ...  
*Niamh* ... ba chuma liom ...

Phase 1, Session 2, Cluain Locha (pseudonyms used for participants' names)

I located the programme featuring Niamh's great-grandfather before the following session and uploaded it to the wiki. It was a segment of a programme recorded in 1981 where he was being interviewed about his memories of buying and selling cattle at local cattle fairs which no longer take place. He was the late father of Niamh's grandmother, who Niamh is very close to according to Bríd, and had passed away a number of years before Niamh was born. When Niamh listened to the programme at school the following week, she seemed both nervous and pleased to have the opportunity to hear her great-grandfather's voice for the first time. Unfortunately the subject matter was rather uninspiring – lots of talk about the poor price of cattle – so, it seemed unlikely that she would use it to base a multimodal artefact on. The real value in finding the programme emerged from her subsequent reported interactions to Bríd when she told her how she had sat down at home with her grandmother to listen to the programme together.

*Bríd* D'éist Mamó Niamh leis ansin ... agus bhí sí an-sásta. Sin a Deaide ag caint, beannacht Dé leis. Bhí sí an-sásta é a chloisteáil

Post-session 5 debriefing, Cluain Locha

It's impossible to speculate on the nature of their conversation during and after that event, but undoubtedly it meant a great deal to her grandmother, as Bríd reported in a later interview:

*Bríd* .. agus tá a fhios agat faoi Niamh agus Mamó ... dúirt Mamó "níor cheap mé riamh go gcloisfeadh mo gharíníon mo Dheaide ag caint" ... dúirt sí "cén chaoi a chloisfeadh, ní raibh sí ar an saol nuair a bhásaigh sé" ... agus bhí sí chomh bródúil, rinne sí caoineadh nuair a d'airigh sí a ghlór  
*Niall* ... mmm ...  
*Bríd* ... sin chomh mór sa chroí is a chuaigh sé i bhfeidhm uirthi ... like sin go hálainn ....

post-Phase 2 interview with Múinteoir Bríd, Cluain Locha

This sense of pride was also evident when her grandmother approached me at the community celebration to thank me for finding the programme and making it available to them. This chance encounter with the archive resulted in a powerful connection being identified between one of the children and the archive. I was to discover that this type of powerful connection was to become a key factor in engaging the children with rich language resources in the archives. The frequency of these

encounters began to increase as the artefacts from home began to arrive and were uploaded to the wiki. This early evidence of two of the desired outcomes being achieved, namely, the strengthening of home-school-community links and the creation of new opportunities for intergenerational transmission, was very encouraging.

#### 6.4.4. Artefacts from Home Crossing the Home-School Divide

Having already asked the children to bring in artefacts of personal or cultural value during the preliminary phase, we now asked them to widen the focus of their search to include artefacts relating to “Mo Cheantar Féin”. In response, a number of the children brought in copies of the local yearbook *Cluain Locha* – an annual magazine of 60 - 100 pages compiled and published by the local community committee containing articles relating to local news, sport and local history (Figure 27). The articles were written using vernacular rather than standard Irish and were full of photographs of the local area and local people including schoolchildren from both the year of publication and from many years previous.



Figure 27 - Resources from home: The covers of two of the yearbooks that were brought in, digitised and uploaded to the wiki<sup>34</sup>

I immediately saw opportunities to make connections between the programmes that I had been listening to from the archive and the pictures in the yearbooks. I received permission from the local community committee to digitise the yearbooks. I scanned them using a reasonably high resolution (400 DPI). I wanted to make them searchable to make it easier for the children to locate information and photographs that could be added to their multimodal artefacts. The standard OCR software that came

<sup>34</sup> Permission to reproduce these images has been granted by the publishers



with the scanner did a poor job of identifying the Irish text and particularly words with *sínte fada*. After much trial and error, Adobe Acrobat Pro produced the best results (while still far from perfect) by identifying the text as Portuguese and using the Clearscan OCR option. I uploaded the yearbooks to the wiki but not without some difficulty as the wiki had a 20MB limit for file uploads which meant having to split the yearbooks before making them available. Reported interactions indicated that many of the children were viewing the yearbooks at home on the wiki with family members using various devices.

Speaker	Addressed	Dialogue	Observation
Researcher	Sorcha	... agus ar bhreathnaigh tú ar an wiki sa mbaile?	
Sorcha	Researcher	yeah	
Researcher	class	... agus an bhfaca éinne eile sa mbaile é seachas sibh féin?	
Harry	Researcher	thaispeáin mise do mo Mhama é	
Labhrás	Researcher	thaispeáin mise do mo Dheaide é	
Ruán	Researcher	Mam	
Researcher	class	agus céard a cheap siad? ... raibh suim acub ann?	
Labhrás	Researcher	... yeah ...	
Sorcha			Sorcha nods her head positively
Researcher	class	Cén rudaí a bhí suim acub ann?	
Aoife	Researcher	Na leabhra	

Phase 1, Session 6, Cluain Locha

In session 4, Niamh asked me about when the yearbook from 1998 (one I had not fully processed) would be available on the wiki. She said that she had been showing the yearbooks to her grandmother on the wiki and that her grandmother was particularly interested in the 1998 one as it was one that they didn't have a copy of at home and there was a picture of her in it. Later in our debriefing session, Bríd told me that Aoife's family had downloaded all of the yearbooks from the wiki and that they had been looking through them for the past few nights.

... Aoife! ... tá na leabhair uilig downloaded sa mbaile ... agus tá siad chomh sásta ... tá siad tar éis dul tríd chuile óiche ... aithníonn go leor, leor daoine ... Niall tá sé seo ... tá sé tar éis an t-uafás a dhéanamh do dhaoine ... beidh daoine ag rá ... ((grumbling noise)) ... "an teicneolaíocht" ... la, la, la ... ach, no ... ag deireadh an lae ... tá daoine thar a bheith sásta ... ach sin í Aoife ... dúirt sí ... bhí muid ag breathnú ar an chomórtas ... bhí Mam ag rá nach raibh a fhios aici a leath de na rudaí [sna hirisi] ...

Phase 1, Post-Session 4 Debriefing, Cluain Locha

This offered further evidence that technology was creating new opportunities for intergenerational transmission, this time through the resources that the children had brought in from home and that had been digitised. The children were passionate about the project in school and seemed that they were extending this to the home domain and possibly the surrounding language community.

#### 6.4.5. Personal Connection with the Artefacts from Home Sparking Conversations

As well as creating interest at home, the yearbooks were creating lots of interest in the classroom. While working through the yearbooks in various sessions, children would come across pictures of particular interest to them. These would often be of people they knew. They would then call their friends over and a conversation would ensue trying to identify everyone in the picture. The teacher would become actively involved and be genuinely interested in these *who's who* and *who's related to who* conversations. These episodes could halt a lot of the activity in the classroom for several minutes but they usually sparked rich and authentic conversations that drew on the children's identities and prior knowledge.

In one session, Bríd was helping Aoife and Niamh with their Photostory when they came across a picture of pupils at the school taken in 1951 (Figure 28). The children gathered around and used the legend under the picture to try to work out who they could identify. With Bríd's assistance, they recognised several relations but there was so much interest that Bríd asked them to enquire at home about who was in it.



Figure 28 - Class gather around to look and talk about who's who in an old photograph from 1951

The following transcript, where the class started to gather around another photograph from a yearbook, was typical of the level of interest and of prior knowledge that was being drawn upon:

Bríd	Grúpa	... ach cén bhliain a tógadh í seo? ... bheadh barúil éicint againn ...
Fionn	Bríd	... b'fhéidir go bhfuil sé ar an back ...
Bríd	Fionn	... níl ...
Niamh	Grúpa	... tá sé ag breathnú cineál óg ansin ...
Bríd	Grúpa	... cá bhfuil Peige? ...
Niamh	Grúpa	... Peige agus Béibí ...
Bríd	Grúpa	... agus cén aois í Pheige anois? ...
Niamh	Bríd	... ó tá sí ochtó haon ...

<i>Lorcán</i>	<i>Bríd</i>	<i>... agus bheadh Béibí thart ar ochtó ...</i>
<i>Niamh</i>	<i>Lorcán</i>	<i>... tá Béibí os cionn ochtó ...</i>
<i>Bríd</i>	<i>Lorcán</i>	<i>... os cionn ochtó ...</i>
<i>Niamh</i>	<i>Bríd</i>	<i>... bhuel ní insíonn dúinn a haois ariamh ... tá sí an-secreitive</i>
<i>Lorcán</i>	<i>Bríd</i>	<i>... yeah ní abraíonn sí tada ...</i>

Phase 1, Session 2, Cluain Locha

The radio programmes and clips worked in a similar way. On several occasions, children listening to clips would pause what they were listening to and call a friend over to listen with them. The audio splitters enabled this dynamic to be almost as seamless as the conversations around the yearbooks with up to five children able to listen to a clip together. Others could access the clip via the wiki if they wanted to control its playing. Sometimes place names would spark their interest. In one instance of this, Niamh and Sorcha were listening to a clip about the folklore connecting Gráinne Mhaol, the pirate queen, with Cluain Locha. What sparked their interest to ask about the clip was the townland that the speaker was from:

<i>Niamh</i>	<i>Niall</i>	<i>... Niall ... meas tú cé as do Johnny Pheter ... mar tá sé ag caint faoi Leitir Chiaráin ... agus Leitir Chiaráin ... sin an áit gurb as do m'athair ...</i>
<i>Niall</i>	<i>Niamh</i>	<i>... tá sé ag caint ceapaim faoi stair Ghráinne Uí Mháille ... ach is as Cluain Locha dhó ...</i>
<i>Niamh</i>	<i>Niall</i>	<i>... ó ab ea? ...</i>
<i>Niall</i>	<i>Niamh</i>	<i>... yeah ...</i>

Phase 2, Session 8, Cluain Locha

The resources were like flint that could spark conversations relating to the local area and the local community. I was hopeful that the reported interactions of intergenerational interactivity at home related to these resources and using technology, were of a similar nature.

#### 6.4.6. Multimodal Artefacts on the Local Area Theme

Bríd and I expected that it would take several sessions for the children to decide on the specific themes related to the local area that they wanted to work on (with artefacts still being brought in from home, etc.), so we decided that this phase of the intervention should start with developing multimodal artefacts that drew on the existing material from the Logainm Áitiúil project (Figure 24) which, I discovered, had won first prize in the county since Phase 1a had completed. This provided both focus and impetus to the children. Once again Bríd divided the nine children into three groups and assigned each group to one of three themes that she had identified from the project:

- Sorcha, Niamh and Aoife worked on the theme of the Old School
- Ruán and Labhrás worked on the theme of the Local Bog
- Fionn, Harry, Oscar and Cormac worked on the theme of the Old Road

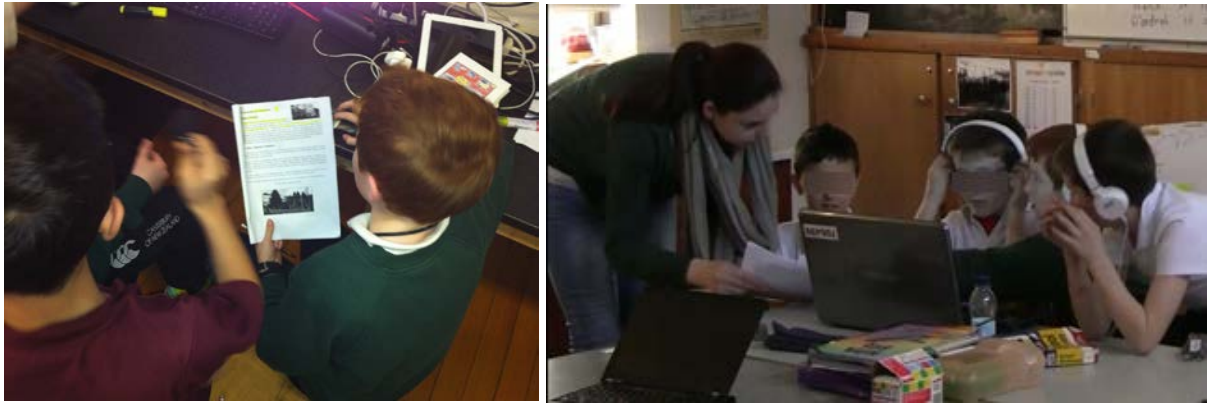
The children wanted to use some of the existing images from the project in their multimodal artefacts. Most of the images were stored on the teacher's iPad as they had been taken by the teacher on a field trip. The workflow for making these images available to the various groups was quite cumbersome. Children had to attach pictures that they wanted to use to an e-mail message that was sent from the teacher's e-mail account on the iPad to a second account which the children were then able to download to the laptop that they were working on.

The children were also interested in using some of the images from the yearbooks. This procedure was somewhat less cumbersome once the yearbook had been downloaded from the wiki (which could take some time due to the poor broadband connection). The easiest way to show the children how to extract an image from a yearbook was to use Snipping Tool, a free screen-grabbing tool that comes as standard with most versions of Windows. They simply needed to have the picture on screen at an appropriate level of zoom (ensuring that it's big enough without evidence of degradation of quality), open snipping tool, draw a rectangle around the picture and save it to their working folder for the multimodal artefact.

We knew from the preliminary multimodal artefacts, that background noise in the classroom was affecting the quality of the audio, so Bríd proposed that we use different rooms for the recording (the kitchen and a resource room were used for this purpose). This also required an adult to accompany each group to supervise the recording. At various stages Bríd and/or a teaching assistant performed this duty.

#### *6.4.6.1. Vignette – Multimodal Artefact: The Old Road*

The old road group produced by far the longest story (10 minutes, 24 seconds). This was due to their topic being largely based on the book prepared by the teacher for the original project. Their plan was to create a virtual tour along the stretch of road in question. Their workflow involved highlighting sections of the book that they wished to narrate, gathering pictures to match the text into a folder on one computer, importing these into Photostory according to the order that they appeared in the narrative and delegating the narration duties between them. Oscar, the eldest, took on the responsibility of managing these tasks in a very fair manner.



**Figure 29 – Left: Harry and Oscar working on their multimodal artefact dictating the audio from highlighted parts of the Logainm Áitiúil project book. Right: The four boys in the group being assisted by Norita with their dictation.**

At various stages in the creation of the story, there is evidence that the children struggle to pronounce words and phrases in the script. This is particularly true of Harry and Cormac, who are only in third class. Norita, a teaching assistant happened to be present that day and assisted the boys in practising their lines. They still made mistakes while narrating and Oscar diligently made them re-record when he noticed this and both he and the other boys got quite frustrated with difficult words and phrases at various times in the process. What Oscar did not notice was the stilted nature of some of the narration. It is obvious viewing the final production, which is wonderful in almost all respects, that the boys are reading from a script as the narration contains unnatural stresses and pauses as words and meanings are being deciphered and sometimes mispronounced. Their frustration grew when we realised that the recording levels of the soundcard on the desktop computer which they were working on were very low – so low in fact that, the following day, it necessitated them to re-record almost the entire story from the beginning on a different computer.

#### *6.4.6.2. Vignette – Multimodal Artefact: The Local Bog*

The Local Bog group used photographs taken on a field trip to the local bog where they gathered samples of the plant and insect life (Figure 30). Their narrative consisted of some passages from text that had already been written for the project as well as contributions that they composed themselves – e.g. “B’fhearr linn an lá a chaitheamh ar an bportach seachas an lá a chaitheamh ar scoil”. There is evidence of them struggling with the pronunciation of some of the vocabulary relating to the bog’s wildlife and several passages where they are obviously reading from a script. This is less noticeable when compared to the old road group. The two boys worked with very little adult support and were finished long before the other two groups. They made use of Photostory’s zoom feature to zoom in on various insects and plant life that they had found.



Figure 30 - Photographs used in their multimodal artefacts by the Seanphortach group which were taken on a field trip during the Logainm Áitiúil project

#### 6.4.6.3. Vignette – Multimodal Artefact: The Old School

The Old School group also used photographs from the school's image collection but also took photographs of the project's wall display and scanned some old photographs (Figure 31). They used Photostory's zoom tool to focus on particular aspects of images and also added effects such as a Black and White filter to colour photographs as their interpretation of times past. They also made use of Photostory's music track to add background music to the story. Their story took the longest to prepare and was the most fluent in terms of oral delivery. They used shorter sentences and their turn of phrase was more personal as they spoke about what they found out about the old school. They worked almost exclusively with Bríd in the school's kitchen (to keep external noise to a minimum) while preparing and recording the story (Figure 31).

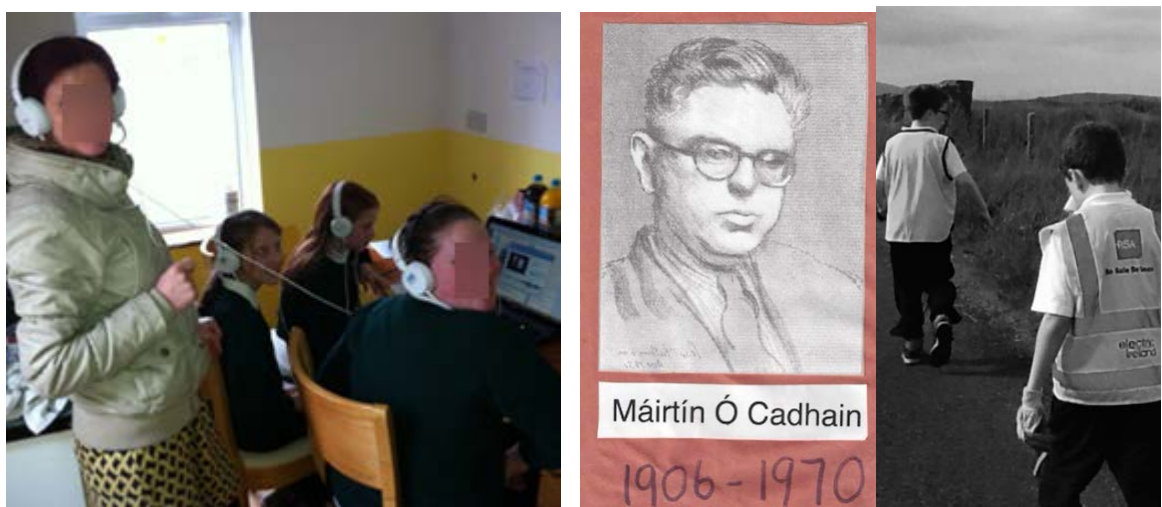


Figure 31 – Left: The Old School Group working in the school's kitchen to limit the noise from other groups that was affecting the recording of the audio. Right: A scan from the wall display and a photograph from a school field trip with a 'black and white' filter applied in Photostory were two of the images used by the Old School Group

#### **6.4.7. Wiki Affected by Technical Problems and its Written Nature**

As elaborated upon in the design chapter (chapter 5), a wiki was chosen as the platform to promote activities that crossed the school-home-community divide, thus directly enabling three of the desired outcomes of the intervention – collaborative knowledge building, creating new opportunities for intergenerational transmission and strengthening home-school-community links. It would also facilitate other desired outcomes by functioning as a repository of rich language resources.

The children would just need access to a web browser from any type of device – at home or in school to be able to access and consume the resources (preferably together in school and with a significant other at home). The children would also be encouraged to make new meaning from them by configuring them in ways that are significant to them by creating wiki pages compiled with a mixture of archival resources, resources from home and their own original contributions.

The initial aims of wiki were to enable:

- a digital space to link school, home and community activities
- a repository of rich language resources
- a platform for knowledge building and showcasing learner's creations
- online communication between learners (and possibly other actors in the space)
- transferability of a low-cost solution to other similar contexts

I also envisaged that the centrally stored resources on the wiki would solve the issue of children wasting time searching for specific resources on various devices in the classroom that had emerged as an inefficiency in the early sessions in Cluain Locha. I introduced the Wiki to the children in Session 2. I had created anonymised user accounts for each of the children and for the teacher. I had also uploaded a number of resources including:

- the digitised versions of the resources that they had brought in from home (mainly the local area yearbooks)
- video files of the stories that they had created in the preliminary sessions
- several programmes that I had found in the radio archives that related to the local area

I had set up a basic structure involving a home page with links to the main resources and a page for each child to act as a sandbox where they could practise their editing skills. I covered the basics of editing and uploading in the initial session. After that the teacher and I supported them in practising these skills and encouraged them to upload content from home and to edit existing or create new pages of interest to them.

Even during set up of the wiki, I was encountering technical issues in the background. The children were eager to show their families the artefacts that they'd created in the preliminary sessions. The wiki, however, didn't recognise the video file-types that the authoring software (Photostory) produced and I had great difficulty in solving this issue. I found a number of partial solutions where converted versions of the files (in MP4 format) would only play in certain browsers on certain systems but the most complete solution involved uploading the WMV files to YouTube and downloading them again as MP4 files. This problem took a number of weeks to solve.

... I'm converting to MP4s of various sorts using a couple of different converters ... one called Handbrake which is kind of aimed at Macs ... and another called ... avidemux ... but the quicktime plugin for Chrome is crashing ... in the browser on the laptop ... and the iPads aren't playing them either ...

Researcher reflection in preparation for Session 6

The wiki also limited the size of files that could be uploaded to 20MB. Several radio programmes and yearbooks that I had digitised were greater than this, so I had to split some of them into several pieces to overcome this limitation. This also made the browsing experience more cumbersome for both school- and home- access. There were also difficulties in using the wiki as a repository for digital resources – one of its principal functions. The fact that the resources were all online and only accessible via a web browser was at the heart of the problem. Every time a child wanted to access a resource in school, he/she was relying on the school's poor broadband connection. Time and time again, the children were left waiting for a resource to open in the browser necessitating the continual need to distribute files using a memory stick, wasting valuable time. This also prolonged the practice of children wanting to make sure that they were using the same device as the previous session, which also cost time, particularly if that device was being used in another classroom.

On a positive note, many of the children were reporting that they were accessing the resources (yearbooks and radio programmes) stored in the wiki at home and often with another member of their family (see 6.4.4). There was little evidence however, of knowledge building occurring on the wiki. The children were not editing the wiki at home and they only edited the wiki at school as part of the intervention's activities. Many of the children's primary device for accessing the Internet at home was an Android/iOS tablet and the children reported that the wiki's browser-based interface on both Android and iOS was troublesome when working with the wiki, particularly when editing pages.

Bríd and I would regularly ask the children about the nature of their engagement with the resources at home and their reported interactions were very encouraging (see Section 6.4.4). So, while technical problems were affecting the use of the wiki, reported interactions suggested that in spite of this, the wiki was creating lots of opportunities for intergenerational transmission at home. The fact



that the children were willing to endure a poor user experience with the wiki in order to share the resources at home suggests that they were highly motivated by the intervention.

To try to achieve collaborative knowledge building on the wiki, I planned an entire session to focus on editing pages, creating new pages, uploading resources and linking pages together. Plans for the session had to be altered at the last minute as the Internet was down for the day and we worked on tagging the yearbooks with metadata and on basic sound editing techniques that would be useful for extracting clips from the archives. Some of the children found these tasks quite tedious, but the absence of the Internet had severely curtailed what we were able to do on the day. I was becoming aware of how dependent the intervention was on having a reliable broadband connection. One of the design refinements that would be required in Phase 2, was to ensure that the technical infrastructure was more robust and able to withstand a loss of connection.

We returned to collaborative knowledge building in the following session, but despite everyone's best efforts, progress on the wiki was very slow. Two factors were responsible for this:

- Their keyboard skills were very slow
- Accuracy in spelling and particularly when creating links between pages is crucial to successful wiki editing and the children struggled with this

Bríd, in relation to a different matter, had previously referred to their typing slowing their progress when working on computers.

*Bríd      ... ach tá siad an-mhall ag typeáil ... uafásach mall ...*  
*Niall      ... an bhfuil?... ok ...*  
*Bríd      ... tá ...*  
*Niall      ... sin an fáth go bhfuil ... is é an cineál ... is é an faitíos ... níl mé ag iarraidh go dtiontóidh an wiki isteach ina tionscnamh scríbhneoireachta ...*

Post-Session 2 Debriefing, Cluain Locha

The second factor was symptomatic of a wider issue relating to the children's contextual knowledge. This is discussed in more detail in the following section. Although we tried to maintain the use of the wiki into Phase 2 of the intervention, the overheads involved in this were too high and it was abandoned fully midway through Phase 2, by which stage the children were working with a reduced set of technologies that were easier to use and more specifically focused on creating multimodal artefacts and less reliant on written language. The features of the wiki that had enabled home-school-community links had by that stage been replaced in a far more efficient way by a cloud-based solution<sup>35</sup>.

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<sup>35</sup> See section 7.2.1

In our final review of the intervention in Cluain Locha, we both agreed that the wiki had not worked out as expected with Bríd suggesting that it might be more successfully employed in a secondary school context:

*Niall      An raibh teicneolaíochtaí áirithe a cheap tú a bhí ... [2 sec] eh ... an iomarca anró ag baint leo ...*  
*Bríd      ... no, ní dóigh liom gur oibrigh an Wiki chomh maith is a bhí súil leis ...*  
*Niall      no*  
*Bríd      mmm, bhfuil a fhios agat. .... níl sé sin críochnaithe ... ach ag an am céanna .... ní raibh aon dochar é a thriail ...*  
*Niall      no, no ... níor oibrigh sé ar an gcaoi ...*  
*Niall      .. no ... ach d'fheadfadh bhfuil a fhios agat go n-oibreodh an wiki níos fearr i meánscoil ...*

Post-Phase 2 Debriefing, Cluain Locha

#### **6.4.8. Researcher's Naivety Relating to Children's Contextual Knowledge and its Relation to the Written Word - A Need for Structured Agency**

The children were sufficiently competent technically to quickly learn how to navigate the software that was demonstrated to them throughout the intervention, however, several of the tasks that involved the manipulation of semantic data proved to be quite challenging to them. Although the children possessed lots of prior knowledge in relation to the local area and an abundance of enthusiasm for almost all of the activities, they lacked experience of contextual knowledge and critical literacy skills that are gained over time through exposure to different types of text, genre and technology.

This manifested itself in various ways during Phase 1b. Their lack of experience with digital written text both from a syntactic and a semantic point of view adversely affected their editing of the wiki and also their search for information in the yearbooks and for images online. Although they quickly learned how to manipulate digital audio, their lack of contextual knowledge prevented them from identifying suitable clips to use in their artefacts. Instances of these phenomena are discussed in the following paragraphs.

In the narrative charting the demise of the wiki<sup>36</sup>, one of the factors affecting the children's slow rate of progress was the need for spelling accuracy when editing a wiki, something that the children struggled with. I had firmly believed that most of their editing would be of a 'point-and-click' nature in organising the layout of multimodal resources on wiki pages and that their keyboard skills wouldn't be a factor that affected progress. The issue relating to the importance of spelling in wiki editing was something that I possibly should have foreseen but the successful use of a wiki with the teaching committee during the iTunesU project had convinced me that it was a suitable technology to use with

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<sup>36</sup> See section 6.4.7

children to cross the home-school divide. Although children were accessing the wiki at home with members of their families, this was mainly due to my own work in setting it up and in making resources available, rather than anything that was driven by the children. The children were simply too young and lacked too many skills and contextual knowledge to be active and efficient knowledge builders.

In one instance, Fionn had created a wiki page on “dornálaíocht” (boxing), but had made a spelling error in the link to the page, with the result that the misspelled link was linking to a new page. Fionn was frustrated as he couldn’t understand what he had done wrong. I found myself explaining to the class the importance of accurate spelling when editing the wiki.

*Niall (to class): ... mmm ... ach rud amháin atá an-tábhachtach ná cúrsaí litrithe ... an bhfeiceann sibh ...*

Session 7, Phase 1b, Cluain Locha

Following the retrospective analysis of my interactions with the children during this session, it is interesting that both they and I were unconsciously using the term “scríobh” (*write*) quite often to refer to adding content to the wiki. In one instance, I caught myself saying “scríobh” and corrected myself:

*Niall (to class): ... so, seo an leathanach a bheidh tú ag scríó ((correct myself)) ... ag cur rudaí isteach faoi peil anois ...*

This was going against one of the underlying theoretical assumptions underpinning the design of the intervention – that of privileging the oral vernacular over the written standard. I was acutely conscious of this throughout the intervention and reflected on it many occasions, e.g.:

This is a key tension in the research – between the written word and its importance, particularly in terms of knowledge-building and at the same time how the written word can be counterproductive in promoting an oral culture and in areas of intergenerational transmission.

Researcher reflection at beginning of Phase 1b, Cluain Locha

Another example where a lack of accuracy and of semantic knowledge affected progress was when the children were searching for information in the yearbooks. People with greater experience dealing with Irish written texts would also be aware of the nuances involved in searching for information within them (e.g., spelling variations caused by grammatical rules). Most children of eight to twelve wouldn’t be expected to have developed this sort of contextual knowledge.

In one session, Fionn (fourth class) had been trying to search through the yearbooks for information on his wiki topic - Sport. He used the spelling ‘Spóirt’ to search which didn’t yield any results. When I went to check how he was getting on he reported this to me and it was only when I sat down with him to suggest the nominative spelling ‘spórt’ that I realised that he had been searching in the

wrong version of the file – a higher resolution version that I made available for extracting pictures from – rather than the searchable version. It was completely unrealistic for me to expect him to remember the difference between these two files or to use effective search strategies within a digital text.

Contextual knowledge is also required to help identify valuable information within a larger text or to discern what category a resource belongs to (e.g. Bríd trying to decide if a yearbook article belonged to 'spórt or 'óige'). Harry was very enthusiastic about this task and extracted a number of images from various yearbooks using Snipping Tool. Many of these images were not really relevant to the topic/page that he chose to develop - 'An Portach' but with some assistance, he managed to produce his own page Figure 32 - Harry's wiki page: An Portach. His poor keyboard skills prevented him from adding much written content and his lack of comprehension about the context of some of the yearbook content is illustrated by the second image which he extracted from a humorous piece about reported sightings of a strange creature in Cluain Locha – which Harry mistook to be real!



**Figure 32 - Harry's wiki page: An Portach**

My expectations around sound editing were similarly too ambitious. In an effort to maximise their agency, I had provided full radio programmes about the local area to the children related to themes that they had shown interest in. I showed them how to use Audacity to help them choose the clips that they wanted to work with. While they were able to do this technically, they lacked the contextual knowledge to identify where a clip should start and end so that it would retain a unitary coherence.

Even Bríd, who is very capable technically, struggled at times when the children ran into difficulties with some of the more advanced skills that were required. On several occasions, she had to

take over at the keyboard to help the children work more efficiently, but this raised issues around the children losing agency, a theoretical aspect underlying the design of the intervention.

On reflection, it should have been obvious to me that primary school children would not yet have developed the level of contextual knowledge required to succeed with many of these tasks, but my efforts to give them as much agency as possible and allow their learning experience to be a voyage of discovery left them in the doldrums. This had forced them to engage with technologies and practices that were beyond their years and that were taking their attention away from the desired outcomes of the intervention. Many of the skills that were being covered in the second part of Phase 1b were probably more suited to older children as Bríd observed in relation to the demise of the wiki (Section 6.4.7) but some of the skills were age appropriate and very important to enable the children to achieve the desired outcomes. Effective search strategies when seeking information online would be required throughout the intervention and children of this age are able to learn these techniques. The problem in this exploratory phase was that I introduced too many technologies in too short a space of time.

Bríd and I reflected on foot of the difficulties that the children had with some of the technologies introduced in the second half of Phase 1b that the next phase of the intervention would need a far more structured approach with the onus on the adults (in this case the researcher & teacher) to provide a level of 'structured agency' to the children whereby they were following learning paths based on their own choices within a structure that maximised their opportunity to encounter learning resources based around a theme that they chose that they felt they had a personal connection with through local or family ties.

#### **6.4.9. Technical Problems**

One of the greatest challenges that the intervention faced across all three phases related to the technical problems that were encountered. This was noted by the researcher in his own reflections and was to be seen the recordings of the sessions when progress broke down and was the predominant reason for negative comments by the teacher in our debriefings and interviews and by the children in our focus groups. The technical problems with the wiki are documented elsewhere<sup>37</sup>. This narrative covers all other technical problems encountered in Phase 1.

The two principal purposes of technology in the intervention were to support engagement with rich language resources through the creation of multimodal artefacts and to create opportunities for intergenerational transmission by bringing technology home (e.g. the MP3 recorders) or by accessing resources at home (e.g. through the wiki).

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<sup>37</sup> See section 6.4.7

The problems were at their worst in Phase 1b for a number of reasons. Phase 1b was exploratory in nature so the number of technologies that were being introduced (to see how the children might engage with them) was greater than in the other phases. The fact that they had not been deployed in a Gaeltacht classroom before also increased the likelihood of unforeseen problems occurring that might turn out to be avoidable in subsequent installations.

Many of the problems in Cluain Locha related to the variety of hardware and software platforms being used in the classroom. It was wonderful that the school was so active technically but it vastly increased the load in terms of technical support. The mix included older desktops running Windows XP, laptops from different manufacturers running Windows Vista and Windows 7, iPads and several brand new laptops which arrived during Phase 1 running Windows 8 – with a new look and feel that neither the teacher nor I were enamoured with.

In the beginning the main problems related to the length of time it took to set up the class before all of the children were able to make progress. The children would look to sit at the same computer as the previous session due to their work being stored locally on that machine. The school had a basic Local Area Networks (LAN) but was not using a network drive in any consistent way. If files were needed from another desktop or laptop, a memory stick would be used to distribute them. If files were on an iPad (e.g. photographs) the most efficient method to distribute them was by sending an e-mail attachment to the school's e-mail address and then downloading them to particular computers. On one occasion a certain file was needed but nobody knew which machine or iPad it was on. This was not ideal. It was only through the introduction of the cloud drive in Phase 2 that these issues were finally solved satisfactorily.

Other challenges related to the mix of hardware included the fact that some of the older machines were slow in running the version of Acrobat Reader that was required to be able to open the scanned yearbooks. Another challenge was ensuring that Microsoft Photostory would run on the new Windows 8 laptops. Thankfully it did, but the installation process was slightly unusual.

Further challenges were hardware-related and probably due to some of the machines being simply too old. One of the groups in this phase were very frustrated when they had to re-record an entire Photostory because the soundcard on the old desktop that they were working on had problems with its recording levels.

The greatest problem later in the phase related to the slow and intermittent broadband in Cluain Locha. We had no Internet at all for two of out of three sessions at the end of Phase 1b which greatly affected what we could achieve (we were still trying to use the wiki at that stage). Even when

the Internet was working, the speed was unable to handle the demand when large files were being simultaneously downloaded by several children.

Yearbooks took an age to download from the wiki. I had local copies on my own machine and distributed them using a memory stick. Much of this took the momentum away from the class - we were very slow starting and children got distracted.

Researcher reflection, post-Session 5, Cluain Locha

Slightly outside the scope of the project were the technical problems that the children reported relating to accessing resources from home. Most of the children had Android tablets or iPads and these problems all related to the wiki (playing media files and editing problems). Many of these problems were resolved on the introduction of the cloud drive (Phase 2).

#### **6.4.10. Key Turning Point in Intervention: Too much focus on tech**

After a particularly frustrating session when the Internet had been down and we couldn't use the wiki, Bríd made a key observation that forced a re-evaluation of the direction in which the design had gone due to the many technical issues that we had been dealing with:

*Bríd ... tá an tionscadal ... tá an treo cineál athraithe ... nach bhfuil? ...*  
*Niall ... cén chaoi ... abair liom cén chaoi? ...*  
*Bríd ... níl a fhios agam ... cén chaoi go bhfuil sé ... níl a fhios agam ... feictear dom go bhfuil sé ... no? ...*  
*Niall ... go on ... yeah ..*  
*Bríd ... níl a fhios agam ... ach tá sé thar a bheith teicniúil ... agus tá sé thar barr ... tá níos mó den ... den teicneolaíocht ann seachas an, an, an ... teanga ... ach ... tá sé ag teacht le chéile ...*

Phase 1, Post-Session 6 Debriefing, Cluain Locha

We were coming to the end of Phase 1b and I had only just started to appreciate the unrealistic expectations that I had that eight to twelve year old children would have sufficient contextual knowledge to manipulate unrefined knowledge bases using technologies that were new to them<sup>38</sup>. Their enthusiasm for all of the technology that we had been using had blinded me from this initially. I knew that something needed to change but it took the teacher's intuition and familiarity with her pupils to bring those concerns to light. Her praise, in her final sentence (above), for the amount of technology in the project didn't hide her disappointment that this had been to the cost of the focus on the language.

As the conversation continued, I expressed my own concerns about us not yet having been able to emphasise the language sufficiently. This helped me realise the importance of the intervention having a robust and reliable technical infrastructure that could relegate technology to the background where

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<sup>38</sup> See section 6.4.8

it was simply facilitating language development and social practice rather than being centre-stage. This would require us to regain a mindset, that Bigum (2012) suggests recognises

that focusing on change but not measurement, on the social, and not simply the technical, allows us to identify the ways technologies may help disrupt traditional relationships: between schools and knowledge; knowledge and children; children and teachers; learners and communities

(Bigum 2012, p.25)

I felt that the reason the intervention had slipped towards a focus on technology was partly to do with the amount of technical problems that we had encountered:

*Niall ... tá mise buartha beagáinín faoin teanga ... just ... eh ... nach bhfuil an bhéim curtha air fós ... ach ...*  
*Bríd ... ach, ok ... ar bhealach amháin ...*  
*Niall ... ach ceapaim go bhfuil an ... tá mé ag éirí níos coinsiasaí ... go bhfuil an cineál infreastruchtúr teicniúil ... caithfidh sé sin a bheith ceart ... ar dtús ...*

Phase 1, Post-Session 6 Debriefing, Cluain Locha

but one of the reasons that we had encountered so many problems related to the fact that I had introduced so many technologies, particularly in the second half of Phase 1b. On the way home after the session, I reflected on what Bríd had said:

... mmm ... Bríd commented to me at the end of the class how ... that this ... that we had changed direction with the project ... and that there wasn't as much emphasis on language ... which worries me ... mmm ... it's something I'm conscious of and ... eh ... I really haven't put enough of an emphasis on ... on language issues ... so, ... it's something I've got to ... got to work on ...

Researcher Reflection, Session 6

The following session, the final one in Phase 1, underlined the veracity of Bríd's observation. The Internet was back and this session was the final effort to breathe life back into the wiki by concentrating a full session on collaborative knowledge building. The failure to make progress in this session is discussed in Section 6.4.7. This helped to clarify that the refinements to the design for Phase 2 would need to re-focus on language development.

## 6.5. Reflections

The words of the teacher when she observed that the intervention had changed during these sessions into something far more focused on technology than she had envisaged were ringing in my ears and it had become obvious to both of us by the end of the final session in this phase that the



intervention needed to re-focus on language and on learning, something we discussed in detail in our post-phase interview and design meeting.

Although the wiki had facilitated two of the desired outcomes – strengthening home-school-community links and creating new opportunities for intergenerational transmission – the desired outcome of knowledge building on the wiki had not succeeded, primarily because many of the children were too young to have developed sufficient contextual knowledge and also due to the fact that their keyboard skills were too slow to enable much progress to be made. Other limitations (the intermittent and slow broadband connection, file-size restrictions and compatibility issues on certain devices) had led to its failure as a reliable repository of resources in the school. Introducing too many new technologies also contributed to the number of problems that I had to solve both during and between the sessions. I was also spending a lot of time between sessions uploading resources to the wiki and editing pages hoping that it might encourage the children to begin to edit it themselves. A more robust technical infrastructure would be required in the refinement of the design for Phase 2 of the intervention.

The focus had indeed been lost and the amount of time that the children were spending actually engaged with rich language resources was much less than what it should have been. Coupled with this was the fact that much of their engagement revolved around struggles with the written word and efforts to identify resources that they wanted to work with without them having the necessary skill set to do so efficiently or independently. The children needed a much more structured form of agency whereby a selection of pre-chosen rich language resources were made available based on their interests so that their energy and enthusiasm could be channelled into activities that resulted in the rapid development of language resources. Refinements to the design would therefore need to concentrate on simple technologies that could bypass writing as much as possible and concentrate on the process of creating multimodal artefacts through the use of oral/aural resources and other modes such as visual image (Photostory had already proven its worth in this regard).

To enable this to happen, I realised that I would have to do a lot of the technical work that I had been encouraging the children to do – such as identify resources on their behalf, extract them and upload them e.g. audio clips, images, etc. It would be important that the children would still have agency, so, my plan was to identify a sufficient number resources related to the local area that the children would have plenty of choice among them. I planned to trawl the archives to identify candidate audio clips upon which the children could base their artefacts and once they had chosen a clip, I could then search for candidate images that they could choose from to add to their artefacts. The children would still be encouraged to identify their own resources, but this safety net in the form of a collection of candidate resources would mean that the children would no longer be left struggling to search for

resources using contextual knowledge that wasn't yet fully developed. This would enable them to spend most of their time developing multimodal artefacts from readily available resources which would likely result in much greater engagement with rich language resources rather than slower and problematic engagements with the written word.

Many of the most active engagements with language in the classroom had occurred in the talk around the artefacts from the archives and the artefacts that the children had brought in from home. Much of this engaged talk was about establishing connections. The children drew on prior knowledge to try to identify people in photographs, names in the radio archive and voices in the radio programmes. This talk was collaborative and sometimes like trying to solve a jigsaw puzzle, different children had different pieces that when put together began to form a larger picture. The children would be even more animated if they identified a personal connection between someone in the class and someone featured in one of the artefacts. This was often themselves but they were just as happy when they found a connection with a fellow classmate. Artefacts with greater personal connections with people in the class tended to spark longer and deeper conversations among the children.

Pahl and Rowsell in their work on artifactual literacies (discussed in chapter 3, section 3.6.1) talk about the relationship between artefacts and talk "... artifacts both stimulate talk, leading to stories, and can be talked into being, as students create artifacts in interaction, through talking to each other" (2010, p.41). They also suggest that sharing stories around artefacts can create greater empathy between children, their teachers and their families.

Part of the task of being an educator is to capture these moments of meaning making and trace where they came from, to ask for more context, and to do that involves listening more closely to what children say about their worlds. Sharing artifact stories is one good way to start an artifact project. Another method that is useful for creating storytelling opportunities, is to have children create something artifactual and let the stories flow from there.

(Pahl and Rowsell 2010, p.55).

There were plenty of instances of the adults (and even sometimes the older children) scaffolding the children's listening. The audio splitter greatly facilitated this by enabling the teacher to simply sit down with a child or group and plug her headphones into their splitter to listen along and support their comprehension. Bríd did this on many occasions throughout the phase. Scaffolding listening in these cases was often as simple as asking the child "Ar thuig tú é sin?" when the adult perceived trickier pieces of audio and if there was a difficulty, encouraging the child to go back to and replay the segment. On repeated listening, the child can be prompted to see if he/she had gleaned any new interpretation from

listening again, and if not hints can be given relating to the context of the audio ... e.g. "Tá siad ag caint faoi ...". This type of prolonged activity with audio texts can lead to deep engagement with them.

In supporting listening, it is essential that the teacher is familiar with the audio in the clips. This can be supported by providing suitable metadata to the teacher in advance of the session. This, however creates additional overhead provider of the audio. Ideally, having a comprehensive database of readily usable clips with accompanying metadata would support the transferability of such practices to other Gaeltacht schools

Sometimes a clip can be difficult to decipher even for the adult due to the diction or accent of the speaker in these authentic clips, so it is important that the adult be able to admit when they're not sure of something. This then offers an opportunity for a whole-class exercise to play the clip, listen to a challenging segment and debate what might be being said.

The children were very pleased with the multimodal artefacts that they created during the preliminary sessions where they chose the themes themselves and composed the dialogue. The types of themes that they chose (wrestling, soccer, etc.), however, although drawing from their personal interests in popular culture, created few opportunities for deep engagement with rich language resources nor for intergenerational transmission and were unlikely to strengthen home-school-community links.

The children also enjoyed creating the artefacts on the local area theme. The local area theme had been very successful in drawing on their prior knowledge in this regard. It was very convenient that the school had recently completed a project on part of the local area as it meant that the project materials could be employed in the children's first artefact on the local area theme. In hindsight, re-purposing the materials wasn't ideal, as they were school-based resources rather than the home-based ones that we were planning to employ but this decision was necessitated by the children's reluctance to record personal audio texts with family members at home. In instances where children were recording themselves dictating a script that they did not necessarily write themselves, the stilted nature of their dialogue and their mispronunciations suggested that they might not have the same level of investment in the text compared to those who prepared the script themselves.

I had started to see a pattern that the local area theme had brought to life. The children were incredibly interested in radio programmes in the archives and in articles in the yearbooks as they felt a strong personal connection to them.

*Niall      ... agus tá mé ag tosú ag feiceáil pátrún ... ó thaobh rudaí atá ... bhfuil a fhios agat ... 'sé sin, an bhéim ar an gceantar áitiúil ... tarraingt ar an gcartlann ... rudaí a aimsiú sa gcartlann ... atá dírithe ar na rudaí atá na gasúir iad féin ag cur suim iontu ...*

Brid pointed out that children in other schools were unlikely to have the same interest in the resources because they didn't relate to their area, but that Cluain Locha children's prior knowledge made the resources inherently interesting:

*Brid: ... ar a laghad leis seo, ... "ÓÓ .... d'airigh mé Mam ag caint faoi sin" ...  
"ÓÓ .... bhí sé sin cloiste agam cheana" ... "ÓÓ" ... bhfuil a fhios agat? ...*

Phase 1, Post-Session 8 Debriefing, Cluain Locha

but we could both see that the other Category A schools would have great interest in resources related to their own local areas, opening up possibilities of the intervention being transferable to these contexts.

The refinements in the design would involve a more structured agency and to support this. I would need to know what interests the children had in the local area theme to enable me to search for and extract rich language resources related to that theme. I found myself returning (once again) to Moll and Whitmore's work in the collective ZPD classroom (1993). When the teacher in that classroom was developing themes with the children to work on for class projects, she would get the class to develop a "class web" which is essentially a mind map developed using both the prior knowledge and topics that the children wanted to find out more about (Figure 33) – "The class as a large group began the theme by discussing and webbing the content they wanted to learn through their study" (1993 p.32).

If the teacher and I could develop something similar with the children as a whole class activity, the map would be an instantiation of the children's agency and I could then use the terms in the map to search the radio database and the yearbooks for audio and images that the children could use as the basis for their artefacts.

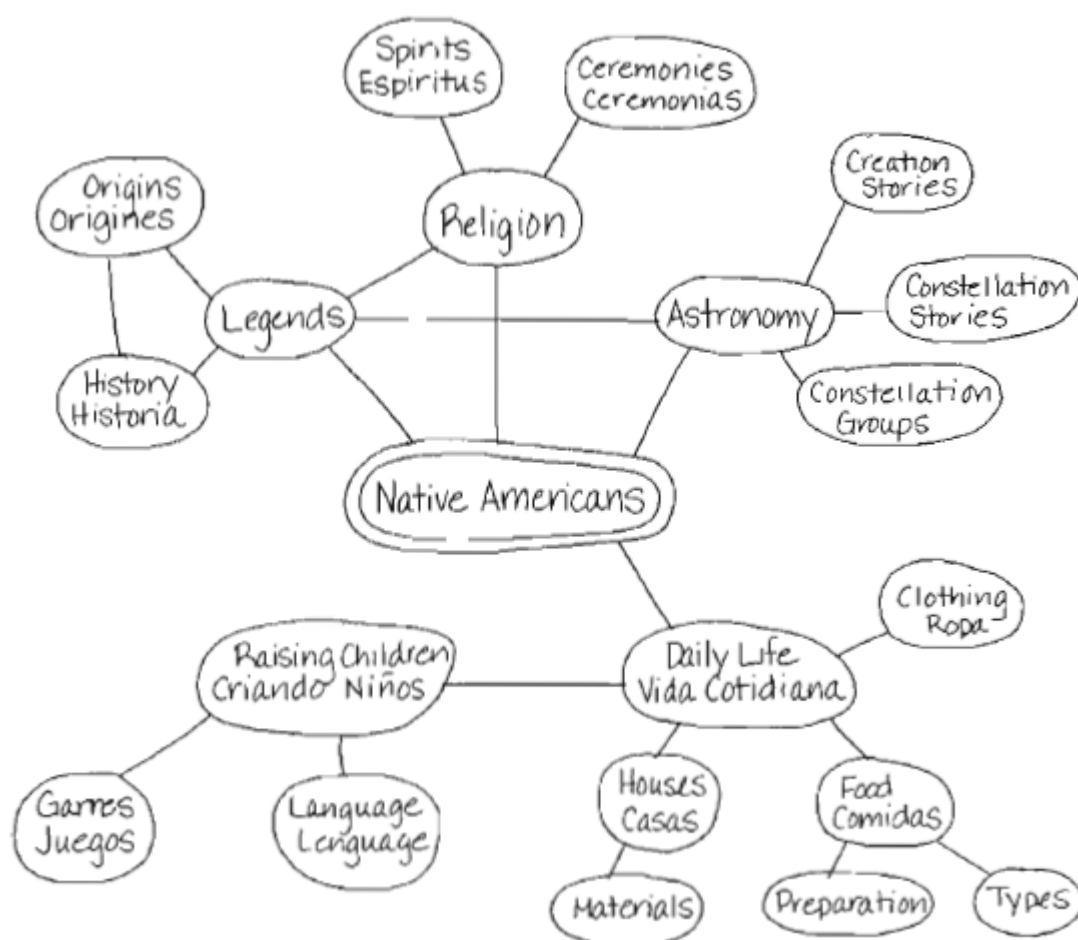


Figure 33 - Class web on Native American theme (Moll and Whitmore 1993, p.32) <sup>39</sup>

Technologically, the main refinements would be firstly to increase reliability in supporting the home-school-community link when replacing the wiki. From my background in I.T., I could see how this could be done quite simply using a cloud-based drive with local synchronisation to all of the school's hard drives. Secondly, we needed to return to simpler technologies that would enable language development in a far more efficient manner than had been happening towards the end of the phase. Photostory satisfied this requirement. The children really enjoyed working with it and its rapid development environment could enable them to bypass the complexities caused by privileging the written word over other modes (following authors such as Jewitt 2005).

<sup>39</sup> Permission to reproduce this image has been granted by the author

## **Chapter 7 - Phase 2: Implementing the Refined Intervention**

### **7.1. Introduction**

This chapter discusses Phase 2, the second full phase of the intervention. This was implemented once again in Cluain Locha after a short break had been taken to reflect and analyse the progress made during Phase 1 and to design a process drawing on the elements which worked best both pedagogically and technologically to produce the types of mediating processes that showed evidence of the desired outcomes.

Once again the chapter is presented as a series of ‘thick’ narratives drawing from the overall analysis of the entire intervention highlighting the most relevant emergent categories relating to this phase. They are ordered temporally to illustrate the design trajectory of the intervention and the learning trajectories of the children and include excerpts from the multimodal transcripts of the sessions as well as anonymised frames from the videos of the sessions (following Barron 2007). The chapter also includes a narrative that analyses the artefacts that the children created. This incorporates those participants’ learning trajectories over the course of the phase (Section 7.2.5).

One principal refinement to the design was the replacement of the wiki and the associated task of collaborative knowledge building using a text-based interface with a simpler resource repository stored in a cloud-based account but synchronised locally to the school’s computer. The other was about maintaining the children’s agency but providing more scaffolds to ensure that it was a form of ‘structured agency’ that maximised their time spent on language development and learning. The phase came to a joyous conclusion when each of the children presented their final artefacts to a packed parish hall at a community event celebrating the fact that the school had won the Logainm Áitiúil competition.

### **7.2. Chapter Narratives**

#### **7.2.1. Cloud drive with local storage for more reliable school-home access to resources**

The requirement of a more robust technical infrastructure had become evident during Phase 1b of the intervention. The school’s slow and somewhat intermittent broadband was the primary reason for this. Ensuring that resources were available locally on demand would make engagement with the technology more seamless and help the intervention regain a focus on key desired outcomes that had become somewhat sidelined – deep engagement with rich language resources, creating opportunities for intergenerational transmission and strengthening home-school-community links.

Having used cloud-based services (Google Drive) in the past to back up and synchronise the contents of various devices (computer, phone and tablet) to the cloud, I could envisage how using a

cloud-based account on a class-wide basis could solve a number of the technical problems encountered in earlier sessions in Phase 1. Synchronising the files between the cloud and every hard drive in the classroom would put an end to the search for resources on specific devices that often delayed the start of sessions. It also would mean that the latest version of files would always be available locally on every computer once synchronisation had taken place. This would avoid the kind of problems I had encountered in earlier sessions caused by slow or intermittent broadband.

Cloud-based services such as Google Drive are available through any web browser and also provide apps on the main tablet-based platforms meaning that the children should be able to access its contents on whatever device they were using at home. I tried playing the Photostory video files that I had uploaded to Google Drive on a number of different platforms (various browsers on PCs and via the iOS and Android apps) and they played successfully on platforms that hadn't worked for the same files on the wiki. After demonstrating these benefits to Bríd, she concurred with my plan to use Google Drive as the primary repository for the intervention's resources and to install the desktop application that would enable off-line access to them. We explained the changes to the children and how they could now play Photostories on their tablets using the Google Drive app. In the following exchange I explain to the class how their Photostories are now available through the Google Drive account and Oscar points out how he had tried unsuccessfully to play the Photostories at home using the wiki:

Niall ... *but rud amháin faoin dá cheann ... oibríonn na Photostories ... ar na ...*  
... *ar na tablets sa mbaile ...*  
Oscar ... *((surprised)) ... an n-oibríonn? ...*  
Niall ... *mmm, hmm ...*  
Oscar ... *thriail mise é agus níor oibrigh sé ...*  
Niall ... *ní oibríonn sé tríd an ...*  
Oscar ... *wiki ...*  
Niall ... *tríd an wiki ...*  
Oscar ... *ach ar Google Drive ...*  
Bríd ... *oibríonn sé tríd an Google Drive ...*  
Niall ... *oibríonn sé ...*  
Bríd ... *d'aistrigh Niall chuile shórt go dtí an Google Drive ...*

Session 6, Phase 1a, Cluain Locha

I created a Google account for the school for the specific purpose of acting as a repository for the project's resources. Every Google account received 15GB of space for free at the time which was more than sufficient to store all of the resources associated with the intervention. I created folders for each type of resource (Photostories, yearbooks, radio archive, images, etc.) and uploaded the appropriate files to each folder.

I installed Google Drive for Desktop on every computer in the classroom and connected each instance with the newly created account. This automatically began the synchronisation process

between the cloud and the Google Drive folder on each computer, automatically populating it with the intervention's resources. I also installed the Google Drive app on the school's iPads which enables access to the drive's contents via WiFi. It also has an option to make selected files available for offline access. Certain file types would prompt a user to install an app to enable the opening of that file if a suitable app was not already installed (e.g. a PDF reader to open the yearbooks).

I made the username and password available to the children and the teacher and explained how to get apps on their tablets at home to access the resources. Sharing access to resources in this manner creates the risk of accidental (or even malicious) deletion of files. It was important therefore to maintain the master copy of all of the files separately to the account that was made available to the children.

The result of making the resources available via Google Drive increased the opportunities for engagement with the digital resources in school and at home by lowering the barriers to access the resources on various devices and platforms. It also introduced efficiencies and a robustness that was required in the context of a rural school in which the broadband coverage was slow and intermittent.

## 7.2.2. Brainstorming for Specific Themes

One of the design refinements was to try to get the children to identify specific themes that they wanted to develop through brainstorming about the project theme (following Moll and Whitmore (1993)). In the first session, I explained the purpose of using a mind map to find out what was important to the children about Cluain Locha and what things they wanted to find out about. I also explained that I would be using their contributions to the map as the terms that I would use when searching for suitable audio clips in the archives upon which they would be basing the multimodal artefacts that they would be developing in this phase. Cluain Locha was set as the hub category of the map (Figure 34). For the next half hour or so, the children were very active in making suggestions for entries on the mind map. Bríd and I tried to help them identify different categories relating to Cluain Locha (such as pastimes, townlands, well-known people, etc.) as the main branches from the hub and then they would make suggestions as to what to add as further sub-branches (Figure 34). This activity ignited all sorts of conversations and debates similar to the type of talk that was a key feature in Phase 1b of the intervention which had been sparked off often by themes related to the local area (see Section 6.4.5).

<b>Speaker</b>	<b>Dialogue</b>	<b>Wider Context</b>
Bríd	<i>Oscar ... an bhfuil aon spórt eile?</i>	
Aoife	<i>... iascaireacht? ... bíonn ...</i>	<i>I'm writing this on whiteboard</i>
Bríd	<i>Bíonn ... bíonn iascaireacht</i>	
Fionn	<i>... bíonn iascaireacht i mBaile na nGall</i>	<i>Gestures like he's fishing</i>
Niall	<i>Céard iad na cláir raidió a phioc sibh amach faoi spórt?</i>	



*Labhrás ... Ó! ... dornálaíocht ... .. sacair ...      I start writing again*  
*Oscar ... bhuel bhíodh donálaíocht ...*  
*Fionn ... bíonn dornálaíocht thiar sa Mháimín ...*  
*Cormac ... an mbíonn? ...*  
*Labhrás ... bíonn cispheil ...      I add this to the map*

Phase 2, Session 1, Cluain Locha

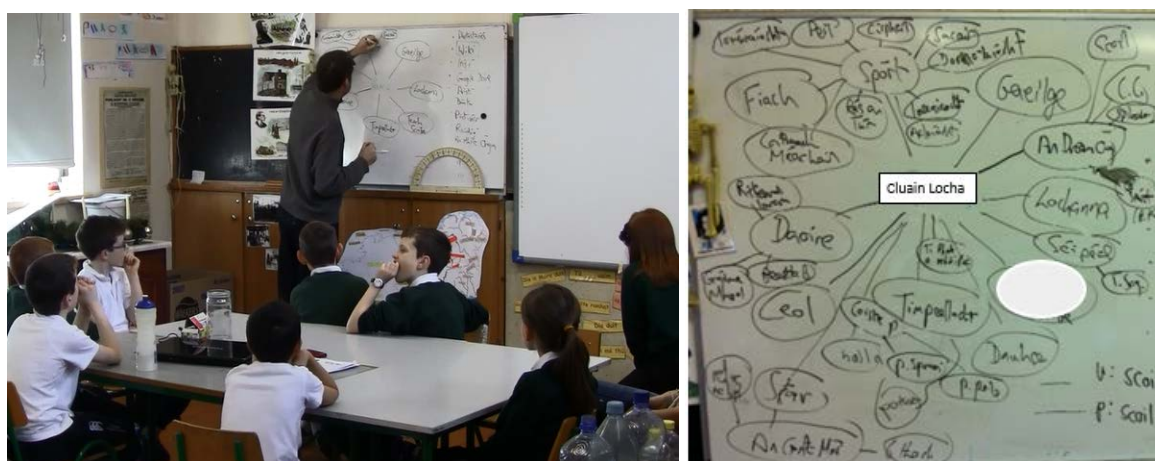


Figure 34 – Left: Me writing on the whiteboard following the children’s prompts as we brainstorm about the local area.  
 Right: The completed mind map developed with the parish “Cluain Locha” as the hub of the map

### 7.2.3. Collaborative listening (and talking) to preselected archival clips

A good example of how the refinement of ‘structured agency’ manifested itself in the design was how the audio clips that the children worked with on their multimodal artefacts were made available to them. Initially, during Phase 1b, while still trying to maximise agency, I provided the children with entire radio programmes that tried to match their interests in the local area theme. They were then supposed to use Audacity to extract clips of interest to upload to the wiki but their lack of contextual knowledge adversely affected this (see section 6.4.8).

Having adopted the concept of structured agency in this phase of the intervention, I drew on my own experience and skills to identify and extract a number of candidate clips from the programmes based on Cluain Locha that could provide a basis for multimodal artefacts. By providing them with a selection of clips to choose from, based on themes that they had suggested during the brainstorming session, they were still retaining a level of agency, but were focusing much more on the key activity of listening to rich audio resources – a basis for language acquisition (following Krashen 1982). It was important to stress that these clips had been identified based on the suggestions of the children. This would maximise their sense of control in the process which would likely lead to increasing the relative authenticity of the audio to them (following Rost 2013).

The clips were a mixture of themes and genres relating to the local area or relating to people from the local area. There were twenty three in total which gave all nine children a wide variety of choice. These included:

- Local folklore – stories of Gráinne Mhaol, the origins of local place names, etc.
- Tomhaiseanna (riddles) – a series of riddles recorded in the past in Scoil Chluain Locha with children posing them to the programme’s presenter
- Local history – stories of nobility who used to live in the area and where they used to live, how the war of independence affected Cluain Locha, the building of the community hall, etc.
- Factual pieces – boat building in the local area, a fisheries’ worker on his responsibilities
- Biographical pieces – a local soccer player who started playing professionally, a man’s recollections of the civil war
- Music – a local singer singing local songs
- Stories – a child reciting a story for children

We loaded the MP3 recorders with these clips and the class was divided into groups with each group assigned a number of clips to listen to – based on themes that they had already shown interest in. Each child received an information sheet detailing the file name of each clip and a brief description of its contents (similar to the information provided for the clips on iTunesU). The audio splitters proved invaluable once again in facilitating each group to participate in a collaborative listening activity (Figure 35) and scaffold one another’s explorations in rich language (following Moll and Whitmore (1993), once again).



**Figure 35 - Children in Cluain Locha listening collaboratively to the radio clips extracted for them based on their brainstorming**

To help support the children focus on the richness of the language in their listening, I had developed a worksheet which encouraged the children to notice aspects of richness in the language (Figure 36). They were asked to make a note of rich idioms that they were familiar with (with a ‘D’ for Deas), rich idioms that were new to them (with an ‘N’ for Nua), other points of interest (with an ‘S’ for Suimiúil) and parts of the audio that they didn’t understand (with a ‘?’). Each time they encountered one of these items, they were asked to note the time code of the audio and the idiom or point of interest on their sheet.

Ainm:		Dáta:		Traic #:																		
<div style="border: 1px solid black; width: 15px; height: 15px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;"> <span style="font-size: 10px;">+</span> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%; padding: 5px;">Am</th> <th style="width: 15%; padding: 5px;">Cineál</th> <th style="width: 70%; padding: 5px;">Nóta</th> </tr> </thead> <tbody> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td><td></td></tr> </tbody> </table>					Am	Cineál	Nóta															
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Figure 36 - Excerpt from a blank richness sheet - used to note richness in language in the audio clips

One of the clips that proved difficult to many of the children was the clip relating to the war of independence. The man being interviewed had participated in the war and in an incident with the Black and Tans and was retelling this story and how he had been “ar an run” in the mountains for the following four and a half years. The piece was hard to comprehend as the man’s diction was unclear at times but because the subject matter was so interesting to the children they persevered and sought assistance from Bríd or I when they got stuck. I worked with Fionn and Oscar while they listened to this piece to assist them identify what they could add to the richness sheet. When I asked them about what they had found interesting:

Fionn     ... Ó ... dúirt sé cé chomh fhada is a     *quoting the man in the recording*  
                  raibh sé ann ... “bhí mé ceithre bliana  
                  go leith ag codladh ann” ...

Niall     ... ag codladh amuigh sna sléibhte? ...

Fionn     ... so, cén t-am a bhí ann? ...     *he checks the time code and then registers it on the sheet*

Session 9, Phase 1b, Cluain Locha

Several minutes later when they saw an opportunity to tell the teacher, they paused what they were listening to, put down their headphones and announced proudly to Bríd what they had also told me about the man being on the run in the mountains for four and half years. Bríd was able to harness this high level of interest in the local to bring in other subjects from the curriculum to discuss the historical context of the war with the class and also the geography relating to the mountainous areas where the man was likely to have been hiding. A sample richness sheet filled out by Sorcha in relation to this piece (Figure 37). She marked a lack of understanding relating to the dialogue at “0.30” and “1.027”.

	Am	Cineál	Nóta
Mír:1	00:00	?	
	1:027	?	
	00:16	S	Ag obair ar an Ionán
	00:46	S	Bhí sé deacair le dul isteach i leach Strainsear.
	2:09	S	Bhí amm leo sa RIC
1	1:31	N	Scaltracha
	00:22	S	Colonn Sa Ionán go RIA
	00:31	S	4½ bliain Codladh i Sléabh
Peter			
Breath...			

Figure 37 - Sorcha's richness sheet

Brid sat down with Sorcha's group, plugged her headphones into their audio splitter and worked with them to try to interpret the piece. Both of the question marks relate to difficulties with same word that the group, with Bríd's help, worked out to be "scaltracha" which is written in at 1.31. The authenticity of the pieces was highlighted by the conversations which were sparked off by the eagerness to understand the dialogue and by my own and Bríd's admissions that we were unsure ourselves at times about what was being said. The end of this session involved a whole class conversation on what the groups had found during their explorations in audio. The term "scaltracha" or "scailpreacha" was one term which fostered a healthy and inconclusive debate:

Speaker	Addressed	Speech	Context
Niall	rang	... an raibh aon nathanna nár thuig sibh nó aon nathanna nua ...	I ask if they registered any other new language/nathanna cainte
Labhrás	Niall	... yeah ... eh ...	
Bríd	Labhrás	... na scaltracha nach ea? ...	
Labhrás	Bríd	... yeah ...	
Niall	rang	... scaltracha? ... céard iad sin? ...	
Bríd	Niall	... [looking slightly unsure] foscadh ... sna sléibhte ...	
Niall	Bríd	... sna sléibhte ... nó rud éicint ...	I walk to computer connected to interactive whiteboard
Bríd	Niall	... ach bhíomar ag ceapadh gur foscadh sna sléibhte a bhí ann ... cineál ar nós pluais sna sléibhte ... bhuel ní pluais ach bhfuil a fhios agat ... dá mbeadh ort dul i bhfolach ...	
Niall	rang	... cén chaoi a cheapann sibh go litreodh tú é? ...	I bring up focal.ie on the whiteboard and we try various spellings that might find the right definition
Bríd	rang	... slaltracha ... céard a cheapann sibh ... litriú? ...	
Fionn	Bríd	... ó ... 'S', 'C', 'A', 'L', 'T', 'R', 'A', 'C', 'H', 'A' ...	
Niall			I type this into focal.ie
Oscar	Rang	... SCAL-TRACHA ...	repeats slowly
Rang			the whole class are staring at the screen

Session 9, Phase 1b, Cluain Locha



**Figure 38 - Class knowledge building about language. Here we're using focal.ie to help us try to decipher the term 'scaltracha' or 'scailpreacha' that features in the War of Independence clip**

It didn't surprise me when we found nothing for 'SCALTRACHA'. As it's plural, the singular of the word would need to be identified first. Other challenges to finding a written definition include variants of 'tracha' being common in the Conamara vernacular for plural forms but are not seen as often in the standard written form and the simple fact that it might be a locally used noun that never entered the written form. Another challenge was the man's diction which was at times quite unclear.

We tried several possibilities in trying to find the singular of the term. The closest term "SCAIRT" brought up the term "SCOIL SCAIRTE". This allowed Bríd to remind the children that "scoileanna scairte" were unofficial sites of learning during the 17<sup>th</sup> and 18<sup>th</sup> centuries where local educated people would teach unofficial classes in the local community. To my ear, I thought I could hear a slender 'P' instead of a 'T' making the word "SCAILPREACHA" and on searching the singular "SCAILP", we found it defined as a 'rock shelter' (with "SCAILPEANNA" the official plural) something that we had previously agreed was the probable meaning of the word.

This valuable debate engaged the entire class with the richness and authenticity relating to their own dialect and contained in the archive. Its inconclusive nature was healthy for the children to see – that authentic language is not the stuff of standardised written texts or aural texts performed by actors following an idealized script. As the conversation concluded, I reminded them that the oral version of the word was far more important than possible written terms as it came from a former member of their community and was part of their own dialect.

Further conversations were sparked off by the dialogue in other clips – one a heated debate on the location of an old building now gone to ruin, another a story of a drowning and rumours of ghosts being seen nearby, others revolved around trying to work out what period of time some of the stories related to and still others where the children recognised the names of people who they were related to. In all of these cases, Bríd expertly drew knowledge from the children by asking pertinent questions relating to key sections that she had identified. Her familiarity with the audio and the richness contained within it was key in steering these conversations towards exchanges around possible new terms and idioms. She regularly referred to her own richness sheet as the conversations proceeded. The main driver of the conversations was the children’s own interest in them and their prior knowledge added greatly to the debate resulting in a collective zone of proximal development as had been evidenced in previous sessions – facilitated by the resources relating to the local area.

Examples of richness that emerged from these conversations included *iarradh de shlat ó mo mháthair* (equivalent to ‘a clip around the ear from my mother’), *lapaireacht* (paddling), *eitinn* (tuberculosis), *gaibhne* (smiths), *céarta* (forge), *graiféad* (a ship’s grapnel), *tlú* (tongs) as well as several local place names. As we reviewed the richness sheets in our debriefing session, after the class had finished, Bríd identified *smuicóideachaí* (pieces of iron left in a smith’s fire – impossible to find in any dictionary but the term was explained by the speaker) as a term that the children had really enjoyed engaging with. This was marked by most of the children – an example of this from Oscar’s richness sheet is shown in Figure 39.

Speaker	Addressed	Speech	Wider Context
Bríd	Niall	... smuicóideachaí ... <i>an-tógtha</i> leis an bhfocal sin ...	both of us looking in on Oscar's worksheet
Bríd	Niall	... ní cheapfainn gur [D] ... sin a thuig mé ...	pointing to her ear ...
Niall	Bríd	... píosa beag d'iarann ...	
Bríd	Niall	... píosa beag d'iarann ... yeah ... nach álainn an focal é? ...	gesturing with her hand signifying word
Niall	Bríd	... [Céard a cheap tú faoi na píosaí] ... iad féin? ...	referring to the clips
Bríd	Niall	... <i>ó go hálainn</i> ... agus Gaeilge bhreá acub ...	

Post-session 9 debriefing, Cluain Locha

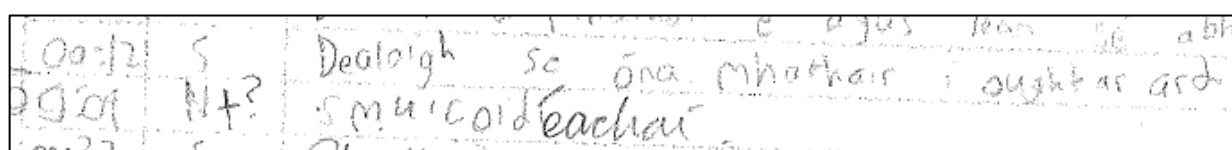


Figure 39 - Extract from Oscar’s Richness Sheet highlighting the term “smuicóideachaí”. “N + ?” indicate that the term was new to him and that he didn’t understand it



The clips also presented opportunities for the teacher to focus on language development that related to the themes of the clips but that went beyond their direct content. Discussing a clip related to boat-building led to the following exchange:

Speaker	Addressed	Speech	Context
Bríd	Rang	... bhfuil a fhios agat má thagann uisce isteach i mbád ... agus má bhíonn tú á chur amach ...	
Bríd	Rang		makes movement as if bailing water out
Rang		... yeah ...	
Bríd	Rang	... céard a thugann tú air sin? ...	
Niamh	Bríd	... ó tá a fhios agam é seo ... bíonn m'athair ....	in an eager tone, bringing her hands together trying to remember
Bríd	Rang	... tosaíonn sé le 'T' ...	
Niamh	Bríd	... ó ....	
Bríd			starts to verbalise the word
Fionn	Bríd	... taoscadh! ...	exclaims

Again, this clip showcases the teacher's skill in seeing opportunities in the resources to encourage the children to mine their prior knowledge for terms and idioms that they may not have many opportunities to use on a regular basis. I realised during this session that we were achieving the types of outcome that we had envisaged when we first designed the intervention. I intimated as much to Bríd, post-session:

*Niall: ... ach ceapaim go bhfuil an ... an méid a rinneadh inniu, tá sé níos gaire don chineál rud atá mise ag iarraidh a bhaint amach ...*

Bríd also indicated that she was very pleased with how the session went, particularly from a language point of view, highlighting her pleasure with the richness of the language in the clips and how much the children enjoyed working with them.

#### 7.2.4. Exemplary Artefact Synchronising Local Area Audio and Images

At the very start of the intervention, I had shown an exemplary Photostory to the children which mixed an audio clip from the archives with images of various types and that used a range of Photostory's effects. This was to highlight how the various features of Photostory could be used to add meaning to an audio narrative and to scaffold their own explorations with the software. I had intended to return to this artefact in a later session should the children want to create multimodal artefacts based on iTunesU collection. Now that we were working with clips that were drawn from people from the local area, I felt that an exemplary artefact based on one of these clips would be of greater relevance to the children, particularly as I wanted them to draw on images from the local area when creating their own artefacts.

The clip that I chose was a local speaker's description of a dramatic historical event featuring members of British nobility that had happened in the locality and that had sparked several conversations among the children over the course of the intervention. I trawled the yearbooks looking for old photos that suited the audio and though I found several articles on the event, there were only three pictures relating to it. I made screen grabs of Google Street View to capture several vistas of the local area and then searched online for further images of a historical nature that matched the changes in narrative in the audio and found a number of evocative images among archive collections of the Irish State. I also searched for several cartoon images to remind the children that their artefacts could be either whimsical or serious or both. The finished artefact contained these various image types, pan and zoom animation effects as well as image filters (I used a sepia filter on colour images). When I started to play the exemplar on the whiteboard, the children immediately recognised a photograph from the local area. As the audio started to play, there were exclamations of "Cool!" from the children who were gazing intently at the whiteboard.



Figure 40 - The class viewing the exemplary artefact on the local area

The Photostory lasted for just over two minutes and as it finished the teacher harnessed the moment to motivate the children to think about their own creations:

<b>Speaker</b>	<b>Addressed</b>	<b>Speech</b>	<b>Context</b>
Bríd	rang	... now ... cé acub is deise ... éisteacht leis mar sin ... nó éisteacht leis an raidió? ...	in an enthusiastic tone
rang	Bríd	... mar sin ...	
Bríd	rang	... nach bhfuil? ... déanann sé difríocht ... déanann sé beo é [emphasis] ... nach ndéanann? ...	gestures with her hands



<i>Bríd</i>	<i>rang</i>	<i>... an mbeadh sibhse in ann é sin a dhéanamh le píosa éicint? ...</i>	
<i>Aoife</i>	<i>Bríd</i>	<i>... yeah ...</i>	
<i>Bríd</i>	<i>rang</i>	<i>... nach mbeadh? ...</i>	
<i>Fionn</i>	<i>Bríd</i>	<i>... yeah ...</i>	
<i>Labhrás</i>	<i>Bríd</i>	<i>... tá mise ag iarraidh Photostory a dhéanamh ...</i>	
<i>Bríd</i>	<i>Niall</i>	<i>... tá siad spreagtha, a Niall ...</i>	

Session 10, Cluain Locha

I explained the different types of image that they could use and that they should prioritise images from local sources – extracting images from the yearbooks using Snipping Tool, using photographs from the schools own collection or drawing pictures and scanning them. Only when those options were exhausted should they start searching online for photographs or cartoons. I also mentioned the utility of maps in providing the context of location for narratives that refer to place names (something that Cummins and Early (2011) have used successfully in their identity text work). Bríd suggested using several maps of increasing scale along with Photostory's zoom feature to enhance this process. Most maps of Ireland available online are in English so a scanned version of an Irish-language map would be required to show places referred to in any recording.

I then proceeded to dissect how I constructed the artefact explaining the importance of identifying changes in the narrative and then how to specify the duration that images are shown for within Photostory so that changes in images are synchronised with changes in the narrative. I also reminded them of how to add effects such as panning, zooming and image filters.

Bríd must have realised the importance of this activity because when the children began working on their artefacts (see following section), she asked them to note the time codes of changes that they identified in the audio narrative on a sheet of paper. These codes were very useful to them when they were working with Photostory. The utility of this activity led to the design of an explicit synchronisation sheet which was developed for and used successfully in the third phase of the intervention in Scoil Bharr na Leice (see chapter 8).

### 7.2.5. Multimodal Artefacts based on the children's chosen radio clips

The multimodal artefacts in this phase of the intervention were to be based on the audio clips that were introduced to the children during the collaborative listening session (Section 7.2.3). Although the participant structures in the original design indicated a preference towards collaborative activities, the teacher had a preference towards each child producing their own artefact. While I would have preferred the children to work in groups, the children themselves seemed happier for the most part to

work by themselves. The only exception to this was Fionn and Labhrás who decided to work together having initially chosen two different clips.

Bríd's familiarity with the clips enabled her to help those children who didn't have a strong preference towards a particular clip, choose ones that best suited their interests and abilities. For instance she suggested a children's story recited with clarity by a young boy to Harry, the youngest and probably the weakest in terms of language and literacy skills and suggested the longest piece to Aoife, a strong student, who had a particular interest in Gráinne Mhaol, the pirate queen. Had Bríd not been an active participant in the collaborative listening session, she would have been unable to tailor the distribution of the clips to ensure that each child received a clip with comprehensible input. The clips were distributed as follows (all came from the trawl of the archives based on the mind map of the children's brainstorming).

#	Title	Children	Recording	Year	Genre
01	Cogadh na Saoirse	Fionn & Labhrás	Account of a local man's experience of being on the run in the area during the War of Independence	????	Personal account
02	Ag Imirt Sacair d'Éire	Cormac	Radio recording from 2000s of a local boy who has played underage soccer for Ireland	2004	Interview
03	An Sionnach agus an Cat	Harry	A young boy reciting a story for children about a fox being outsmarted by a cat	1988	Children's Story
04	Dornálaíocht in Uachtar Ard	Oscar	A funny story about a local man's failed attempt at boxing when he was young	1993	Humorous Story
05	Tomhaiseanna (Cuid 1)	Ruán	Children from the school testing the presenter with riddles (part 1)	1988	Riddles
06	Tomhaiseanna (Cuid 2)	Sorcha	Children from the school testing the presenter with riddles (part 2)	1988	Riddles
07	Lady Spencer	Niamh	A local woman recounts the story of a woman of nobility who died tragically in the area	1976	Local History
08	Gráinne Mhaol sa Cheantar	Aoife	A local man's colourful account of Gráinne Mhaol's connection with Cluain Locha	1979	Folklore from the archives

**Figure 41 – Cluain Locha - Themes and audio clips that each child/group worked on**

The concept of structured agency also changed the approach to how the children selected images to accompany the audio. While the children were encouraged to source their own images and

upload them to their project folder in Google Drive, Bríd and I were monitoring their progress and when progress was slow in their pursuit of images that might match the audio narrative, we would provide them with candidate images (two or more for each change in the narrative) that they could then choose from or choose to ignore as they worked on their artefacts. This instantiation of structured agency ensured that they didn't become bogged down in their search for images – something that I had seen happen on many occasions during Photostory workshops with student teachers as they searched for an ideal image that probably didn't exist.

It is unfortunate but inevitable that the most successful internet search strategies require the search to be done in a major language like English. Even when trying to deprivilege the written word, skills related to it were required to complete tasks related to developing the artefacts. Spelling accuracy in English was required when searching online for images, something that some of the younger children needed assistance with.






#### *7.2.5.1. Vignette: Multimodal Artefact – The War of Independence*

During the search for images I sat down with Fionn and Labhrás to see if they had any ideas of what types of picture they would like to use. They were in the process of relistening to their clip and were able to report back very accurately on their experiences that the man who was on the run from the Black and Tans had had. They had found several images but needed more, so I suggested that they search Google Images for “Black and Tans” (Figure 42).



**Figure 42 - Fionn and Labhrás searching for images relating to the War of Independence**

Fionn and Labhrás's routine as they were working on their War of Independence Photostory (Figure 43) exemplifies the theoretical construct of the synchronisation cycle in action (defined in Chapter 5, Section 5.4.2.2). This type of engagement was repeated again and again as they added each image to the audio.

<p>Fionn and Labhrás searched online for pictures to add to their artefact. As their stories relate to the war of independence, they used search terms such as “War of Independence”, “Black and Tans”, etc.</p> <p>Their dialogue together was full of expressions like “Yes!!”, “Cool!!”, “Áá, class!”. When they find a picture of a sniper, they exclaim “Féach ar an ngunna” and gesture excitedly.</p>	
<p>After they identified the pictures that they needed, they loaded them into Photostory and worked with each picture in turn, setting its duration and then listening to a preview of the story to check how it synchronised with the audio.</p> <p>In the following dialogue they have just listened to a preview of an image with audio that they were very happy with and Fionn suggests that an image of an army tent would suit the next piece of audio</p>	
<p>Labhrás: <i>Bhí sé sin class.</i>  Fionn: ... <i>ach, ‘sléibhte’ ... ‘codladh amuigh sna sléibhte’ agus an teint</i>  Labhrás: <i>Is ea!! ... ok ... so, gabh as sin ... seiceáil an bhfuil an pictiúr againn</i>  Fionn: ... <i>‘do you want to save changes?’ ... tá</i>  They then add the image of the tent to Photostory and synchronise it with the following dialogue in the clip:</p>	
<p>Interviewer: <i>Cá dtéafadh sibh?</i>  Interviewee: <i>Ó bhíomar ar an run uilig ... an méid againn a bhí ann sé dhuine dhéag is fiche acub a bhí ann</i>  Interviewer: <i>Amach ar na sléibhte?</i>  Interviewee: <i>Amach ar na sléibhte is na scailpreachaí is codladh amuigh ... sea ... bhí mé cheithre bliana go leith ag codladh amuigh ann</i>  Interviewer: <i>cheithre bliana go leith ...</i>  Interviewee: ... <i>is ea ...</i>  Interviewer: <i>níor chaill tú an [DOILÉIR] bail ó Dhia ort ...</i>  Interviewee: ... <i>anois ... m’anam go ndeachaigh mé gar go maith dhó ... tá mé ag ceapadh nár chuidigh sé liom ... [GÁIRE] ...</i></p>	
<p>This screenshot shows the boys listening to a preview of the excerpt accompanied by the image of the tent. They listened several times to this clip until they were happy with the timings.</p>	

**Figure 43 - Fionn and Labhrás working on their artefact and synchronising the audio with the images they had gathered.**  
**Cluain Locha, Session 11**

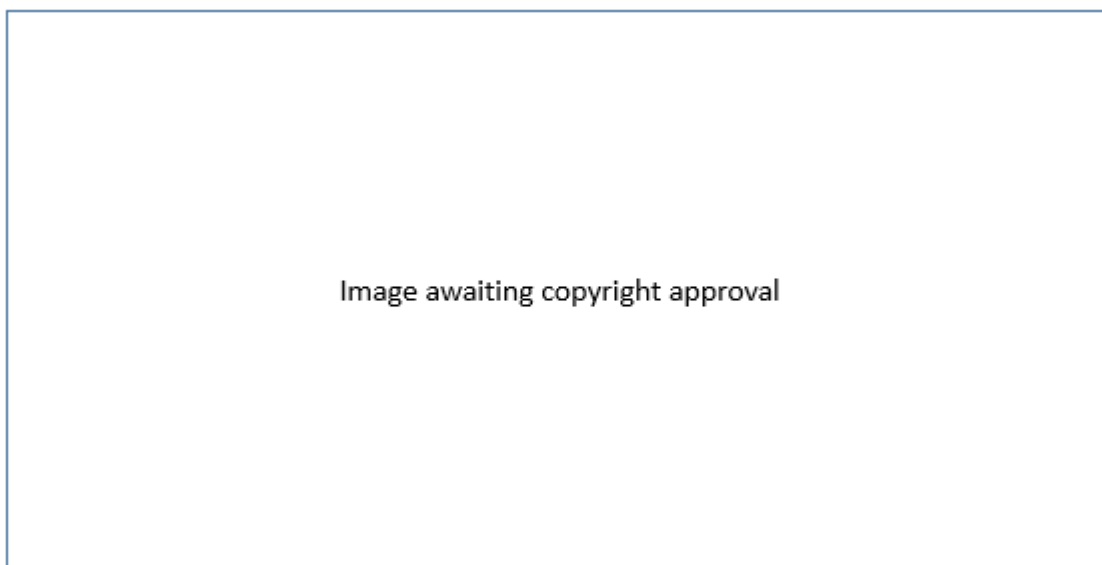
There is evidence the boys' talk and gestures that they had great interest in the clip and that they were retaining much of what the man had said. They were highly engaged and obviously enjoying the entire session as they created their artefact. Their collaboration was at times loud, excitable and full of laughter and they often called other children, Bríd and I over to view their progress. The following extract shows this as they discuss what duration they should add to the image of the tent (Figure 43):

Fionn ... ó actually, níos lú ná seacht ... an dtuigeann tú? ... 'bhí muid sa ... an chuimhin leat dúirt sé bhíomar sa run ón RIC? ...  
 Labhrás yeah  
 Fionn ... no, is cúig soicind a bhí ann ... *is setting the duration on screen*  
 Fionn ... sin cé chomh fada is atá an pictiúr ... *listening to the preview together*  
 Both boys  
 Fionn Óooo (exclaims), tá sé níos faide .. sin an áit a dúirt sé faoi ... go raibh sé cheithre bliana go leith ag codladh amuigh  
 Labhrás ... so deich soicind, cuir deich soicind isteach  
 Both boys *listening to the preview again*  
 Labhrás ... b'fhéidir dó dhéag? ...  
 Labhrás Bríd, fuair muid pictiúr amháin agus tá sé perfect le haghaidh ... tá pictiúr de champa thuas ar an sliabh

Session 11, Cluain Locha

#### 7.2.5.2. Vignette: Multimodal Artefacts – Other Artefacts

Oscar's artefact was everyone's favourite artefact. The man in the clip's humorous turn of phrase relating how he innocently gave a man at a local fair all of his money to teach him how to box but when he and his brother got into a fight with boys from a family who were visiting the area, their skills weren't what they thought they were. Oscar managed to magnify humour by adding a series of funny cartoons which he had found online (Figure 44).



**Figure 44 - Two of the cartoon images used by Oscar in his artefact**

Oscar had initially seemed a little disinterested in the first session of working on the Photostories (he wasn't staying much at his desk). Bríd noticed this and gave him some encouragement to get him focused. He then stayed working on his laptop for the remainder of the session. Bríd assisted him for part of this searching for appropriate pictures. When he showed the finished movie to me I laughed heartily at several of the images that he had chosen to accompany the clip. His mother happened to visit one day after school when Bríd and I were conducting a debriefing sessions. We showed her his artefact and she found it very funny. Bríd asked her not to tell him that she had seen it because he was so proud of it and wanted to surprise his family with it at the community celebration.

Bríd in a later interview spoke about the creativity in Oscar's artefact which was so different from all the others in its use of cartoons, something she admitted that she would not of thought of herself.

*Bríd ... ach mar a deir mé, bhí sé sin thar a bheith samhlaíoch ... an rud a rinne seisean [1 sec] ... ní thiocfainn aníos leis go brách ... níl mise tuned mar sin ... [...] ... feicim go raibh sé sin mar rud iontach agus mar a deir mé tá an oiread sean-cleachtadh acub ar léamh agus ar scríobh ... bhí sé seo difriúil*

Post-Phase 2 Interview with Múinteoir Bríd, Cluain Locha

A key feature that emerged during these sessions was the interest they had in each other's work, with children regularly coming over to sit with someone else to view their progress (Figure 45). This also manifested itself in the manner in which they helped one another, particularly if an adult was not available at the time – the older children were particularly good at helping the younger ones with Niamh and Oscar (Rang 6) often helping other children with spelling and with using the technology.



**Figure 45 - Children took great interest in each other's artefacts and offered help, suggestions and a lot of praise**

There was evidence again of the younger children lacking the contextual knowledge to appreciate some of the semantic details involved in producing cogent artefacts. For example, I helped Harry import all of the pictures onto the timeline in Photostory in one fell swoop but he then failed to build on this and considered that his story was ‘finished’ soon after this based on the fact that pictures were appearing every five seconds (the default in Photostory) as the audio was playing. He failed to notice that they weren’t always making sense when listening to the audio. He even failed to notice that the audio hadn’t finished at the time of the last picture. This wasn’t noticed until the end of the session when Bríd sat down with him to assist him in editing both the order and the timings of the pictures.

In another instance, Cormac who’s in third class, was adding soccer related images to the audio of an interview with a neighbour who had recently been called to play underage soccer for Ireland. He found a Wikipedia page about the young man and then searched for images related to his soccer career to add to the audio. When I sat down with him, he had been working diligently on his artefact for over an hour and had added many images to it. The changes in image were not synchronising properly with the audio however.

Sorcha and Ruán were both working on two halves of the one audio clip – tomhaiseanna (riddles). The timing for tomhaiseanna was particularly important as the pictures that went with the questions were meant to act as clues to the answer. The picture that went with the answer was not to be given until the audio mentioned the answer. It was planned that when they were to show their stories that they would pause the movie just before the answer would be given to enable the audience to try to guess the answer before it was played.

#### **7.2.6. Spread of technology to fit new purposes in the classroom**

A sign that the intervention was having a positive effect on the teacher was the fact that she had started to repurpose the technology that had been introduced for work that lay outside the scope of the project. These initiatives included the children using the MP3 recorders to record themselves reciting poems and essays that they had written which they then uploaded to the cloud. The teacher



also used the cloud drive to share other digital resources that the children had created including a set of PowerPoint slides based on the research that they conducted at home on the theme of “An Nollaig Fadó i gCluain Locha” as well as other presentations on history and geography. She also used the drive to share resources with the school’s cúntóir teanga.

The class created an anti-racism video using Photostory which they called “Tabhair Cic don Chiníochas” and entered it in a competition connected to an anti-racism campaign – “Give Racism the Red Card” . They prepared a script including a poem that they wrote together on the topic of racism, searched for images online showing images of people from different races to match the script and used the microphones to record themselves dictating the script. Each child had several lines to recite after which the whole class would shout “tabhair cic don chiníochas!” over the image of the campaign’s mascot (Figure 46). They won in their category of “Irish-medium schools” and the class travelled to Dublin to receive their award. Bríd shared the story with everyone at home through the cloud.

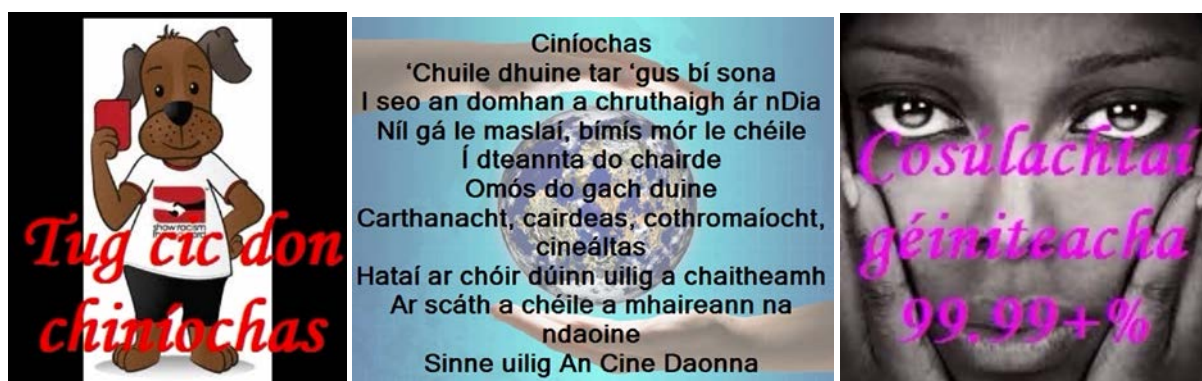


Figure 46 - Screenshots from the school's anti-racism multimodal artefact created using technology and skills from the intervention

#### 7.2.7. Collection in cloud being repurposed as suitable curricular resources

As well as the multimodal artefacts that were created by the children, the school’s participation in the intervention resulted them obtaining a large collection of rich language resources relating to the local area. Through the robust cloud-based infrastructure these were available locally on all of the school’s computers and in the children’s homes through the cloud. This benefit also accrued to Scoil Bharr na Leice, the school that participated in Phase 3 of the intervention.

Both teachers (Bríd and Síle in Barr na Leice) were extremely pleased to have this collection of resources at their disposal. They both cited the dearth of suitable resources for native speakers (echoing the findings in Section 2.5.6). The problem was particularly pronounced for children in fifth and sixth classes as the resources designed for their age group had been covered when they were much younger:

Bríd      ... ach sin a bhíonn siad ag léamh go hiondúil ...      shows me a  
textbook



*sin atá an Roinn ag iarraidh a bheith ag léamh  
 ... sin an caighdeán ... i Rang 6 ... critical tone*

*Niall ... yeah, yeah ...*

*Bríd ... sin a bhíonn Rang 4 ag déanamh anois agamsa pointing to book  
 ... ach, sin an caighdeán ... so, tá buntáiste mór  
 millteach ... ag dul trí na hirisleabhair ... mar tá  
 siad ag léamh ... ach tá siad ag léamh ar mhaithe  
 le rud teicniúil a dhéanamh ...*

Post-Session 6 Debriefing with Múinteoir Bríd, Cluain Locha

Síle who was not long working in Barr na Leice had been planning on establishing a collection of resources relating to the language and folklore of the local area was delighted with the collection of resources that remained for the school at the end of the intervention. She too, cited a lack of resources at a level of language suitable for the mainly native speakers in her classroom as she explained how useful the yearbooks would be to her in enriching many aspects of the entire curriculum outside of teaching Irish:

*Síle ... yeah, ó tá sé iontach ... like b'fhéidir gur b'shin ceann de na rudaí  
 [laughing] is mó ... eh ... bhfuil a fhios agat ... is mó ... is dóigh .... go bhfuil  
 mé féin riméideach as ... ag teacht as an togra seo .... like, tá tú in ann  
 ceachtanna Gaeilge a bhunú air, ceachtanna staire a bhunú air,  
 ceachtanna tír eolas ... bhfuil a fhios agat ... tá an t-uafás atá tú in ann a  
 cheangailt isteach just le iris ...*

Post-Phase 3 Interview with Múinteoir Síle, Barr na Leice

### 7.2.8. Community Presentation

The intervention culminated with a celebration for the entire local community in the local parish hall. The school wanted to celebrate the fact that it had won the Logainm Áitiúil competition and showcase the prize that they had received – an artwork that would be displayed locally. One of the focal points of the night was the playing of the children's artefacts to a large audience. One by one the children stood up at the front of the hall to introduce their creation before it was played. Each artefact received a rapturous round of applause. I also put all of the artefacts on DVD which was presented to each child after the intervention.

When I interviewed Bríd several weeks later to review the intervention, she immediately began to reminisce about how much the night had meant to both the children and the local community. She told me about that a local man had come up to her afterwards introducing himself as the son of Johnny Pheter who was the focus of Fionn and Labhrás's artefact on the War of Independence. He had expressed great pride in hearing his father's voice being incorporated by the children in their artefact and then being part of such a special occasion:

*Bríd ... tá chuile dhuine fós ag caint air .. go raibh sé chomh hálainn .. gur rud pobail a bhí ann ... ceiliúradh ar an bpobal agus air ... agus bhí duine ag caint liom ... athair leis a bhí ag caint ... Johnny Pheter*

*Niall athair ?*

*Bríd athair le Learaí*

*Niall ... agus bhí seisean i láthair ....*

*Bríd agus bhí seisean i láthair agus bhí sé chomh bródúil ... bhfuil a fhios agat agus bhí sé chomh sásta é a chloisteáil ..*

Post-phase 2 interview with Múinteoir Bríd, Cluain Locha

She also spoke about how proud the children were in being able to express to the community how much they valued their local heritage:

*Bríd ... ba léir go raibh na gasúir bródúil as an taispeántas ar an áit agus ar an bpobal agus ar an geantar agus ar a n-oidhreacht*

Post-phase 2 interview with Múinteoir Bríd, Cluain Locha



Figure 47 - The Community Celebration in Cluain Locha

### 7.3. Reflections

The principal change in this cycle of the intervention was an attempt to re-focus on language after the exploratory iteration had become stagnated in technical issues (as Bríd had adroitly observed at the end of Phase 1b). The major refinement to the design at the start of this iteration was that we were no longer trying to achieve collaborative knowledge building online, resulting in a reduction in focus on the wiki. It was eventually retired midway through the phase thanks to the successful introduction of the cloud-based drive. We adopted a more structured form of agency in response to the children struggling at times with the amount of freedom that they had been given when trying to

identify resources of interest to them. This gave both myself and the teacher more active roles in developing a resource structure to support them in developing their artefacts.

There was no comparison in terms of the amount of progress and the focus on language that was achieved in this phase of the intervention compared to the Phase 1. The online writing-centred knowledge building on the wiki with which an analogy could be drawn to Bigum's description of schools constantly trying to 'domesticate' technology to fit in with traditional schooling had been replaced by another form of knowledge building, much closer to the "knowledge producing school" that he advocates (Bigum 2003; Bigum 2012). Many of the practices outlined in the classroom in the opening vignette in chapter 3 (Moll and Whitmore 1993) were being echoed in the practices in Phase 2 in Cluain Locha with the added dimension of the cloud creating an almost seamless link between the school and home domains.

Both the children and the teacher were more at ease with the technology being used in this phase compared to Phase 1. There were less software applications being used and the ones that were (Photostory, Snipping Tool, Acrobat Reader and a web browser) were simple and intuitive to use. The new cloud/local setup meant that the resources were available on every computer on demand, irrespective of the status of the school's internet connection. The cloud/local set up made the resources available in a much simpler format to access.

*Bríd      bhuel, tá níos mó cumas ionamsa chomh maith bhfuil a fhios agat,  
d'fhoghlaim mise go leor ... mmm, agus .. ceann de na rudaí is fearr ná an  
Google Drive ... tá mé ag ceartú aistí sa mbaile ... in áit cóipleabhar sa  
mbaile*

Post-phase 2 interview with Múinteoir Bríd, Cluain Locha

This shows that the technology was helping to support the teacher in new ways and bring new efficiencies into the complex environment of the Gaeltacht classroom. Bríd was using the technologies that were introduced during the course of the intervention to support other aspects of the curriculum and to share resources outside the project's scope with the children's families at home, increasing the likelihood that the new digital link between the school and the home would be maintained and strengthened further. This illustrates how the technology was now helping to achieve the desired outcomes of the intervention.

*Bríd      ... ó, rinne sé difríocht mór millteach ... feictear domsa ... sa suim freisin ..  
agus sa méid a bhí siad in ann taispeáint sa mbaile ... cheap mé go raibh  
an Google Drive thar barr ... táimid fós ag úsáid an Google Drive ...*

Post-phase 2 interview with Múinteoir Bríd, Cluain Locha

This children had been increasingly reporting accessing the resources with their families at home through the cloud drive:

*Bríd ... bhuel, go háirid anois i bhfoirm fuaime agus físe go raibh teacht éasca air sa mbaile .... bhí sé sin thar barr go raibh an Google Drive agus go raibh rochtain ag na gas..[corrects herself] ... tuismitheoirí air sin sa mbaile .... **agus bhí siad ag breathnú air, bhí siad ag dul trí rudaí sa mbaile** [emphasises]... nuair a bhí muid á dhéanamh ... agus is dóigh leabhair ... tá siad chomh tinn tuirseach ag breathnú ar leabhair ar feadh an lae ag an scoil .. ach fiú mar rud físe ansin ... níl .... gasúir nach bhfuil labhairt chomh maith sin acub ... níl siad sin ... teoranta*

Post-phase 2 interview with Múinteoir Bríd, Cluain Locha

I asked her to elaborate on this final point and she explained that the intervention with its emphasis on using technology to mix visual image with rich oral language was creating a more level playing field for children whose literacy skills were less developed as their creativity wasn't limited by their abilities with the written word.

Another advantage that Bríd saw with this novel practice of synaesthetically adding visual images to rich authentic audio clips was that her role in offering feedback had been transformed. Instead of correcting mistakes in traditional artefacts of written language (which harbour standard/vernacular tensions), she was acting as a co-investigator with the children in deciphering complex audio texts the roots of which are deeply entwined in the local community and its history and culture.

She also suggested that the design of the intervention had the potential to tackle the tension between wanting to engage children with rich language but in doing so not make that engagement seem old-fashioned and out of date. One of the criticisms levelled at some language enrichment efforts is that children are not going to be interested in the language of old traditions and that efforts should be made to engage them in contemporary uses of language. The language of old traditions is, however, often the source of the richest veins of language. By using digital technology this intervention has shown how children can indeed become engaged with rich traditional forms of language that can then be re-mixed and re-invented in contemporary ways. Bríd again cited Oscar's artefact as an example of how this was achieved:

*Bríd ... cé gur rud traidisiúnta agus bhí sé ag cloisteáil an sean-Ghaeilge ó RnaG ... níor cheangal sé leis an sean-saol ... agus leis an rud ... é ...*

Post-phase 2 Interview, Cluain Locha

The children were producing knowledge as a result of deep engagement with rich oral language resources that they had personal connections with. The people in the recordings were their own people speaking their own language about places they knew and things that they cared about. Their affective filter had been lowered (following Krashen 1982), so the fact that the level of Irish spoken by the people in the archives was at times richer and more varied than the children's was not perceived as a barrier

to learning. The children's curiosity to know these people and know their stories surpassed any difficulties with new words and phrases or challenging diction. The closer the personal connection that they had with the speaker, the more eager they were to listen, and relisten to their story. Many parallels can be drawn here with what Dicker et al. (2007) found with the Innitutut Story Database (as outlined in Chapter 3, Section 3.8.1).

The teacher had a key role to play in bringing this engagement about, in fanning the flames of their curiosity and in encouraging them to talk about their artefacts among themselves and with people at home (similar to the types of strategies recommended for teachers by Pahl and Rowsell, 2010 as discussed in chapter 3, Section 3.6.1). To enable this, it was very important that the teacher became familiar with the resources. In Cluain Locha, she did this in a very explicit manner – participating in the listening activities along with the children and being willing to express her thoughts about the content and the language in the clips, even when she wasn't sure about every detail.

A further key intervention by the teacher was when she saw the need to explicitly support the children in their efforts to synchronise the audio with the images by getting them to write down the time codes for the transitions in the narrative that they identified. The children would refer to these codes while they were creating their artefacts, helping them stay organised in producing a cogent artefact. This practice helped identify one of the key design refinements implemented in Phase 3 of the intervention – the development of the synchronisation sheet (see Chapter 8, Section 8.4.1).

Brid observed in our final interview that native speaking children's command of Irish has slipped further in the past ten years, echoing what the research on Gaeltacht communities has been telling us (e.g. Ó Curnáin 2007, 2009; Ó Béarra 2009; Ní Chonchúir 2012). In this context she underlined the need for teachers to focus on language enrichment in Gaeltacht schools and expressed the view that the resources and practices in this intervention had enabled this in Cluain Locha.

*Bríd        ... is cinnte ó thaobh foclóir ... ach cheapfainn níos deise ná foclóir go raibh nathanna beaga ... go bhfuil nathanna tugtha leob acub ...*

She cited one specific example where she had observed the class acquiring a new phrase from the recording that Oscar used as the basis for his artefact:

*Bríd        ... airím iad ag rá "nach raibh mórán meabhair acub ar rud" níor airigh mé iad á rá cheana ... ach tá sé i scéal Oscar ...*

*Niall        ... abair é sin arís ...*

*Bríd        ... "níl mórán meabhair agamsa air sin" ... tá sé sin ag Tom Ó Cualáin nach ea? ... nuair a bhí seisean ag caint ..*

*Niall        mmm...*

*Bríd        agus d'airigh mé é sin agus tá sé sin cloiste agam uathu ó shin ... níl a fhios agam an raibh sé ann roimhe sin .. ní cuimhneach liom cinnte ...*

Post-Phase 2 interview with Múinteir Bríd, Cluain Locha

Bríd suggested that the approach we took in Phase 2 of the intervention would be transferable to other Gaeltacht schools and that she would strongly recommend other schools to implement such a programme to support language enrichment.

The one negative aspect of the intervention related to the technical problems that were encountered.

*Bríd      sin é an locht is mó a bheadh agamsa ar an teicneolaíocht ... nuair atá sé ag obair, tá sé thar barr ... ach má tá fadhb [laughs] ... tógann sé an oiread achair caoi a chur air ...*

However, it is worth noting that these were much reduced though from the amount of problems in Phase 1b and the new infrastructure using the cloud drive had added a robustness that helped to protect the children's activities from Internet outages by having a synchronised version of the resources available locally on the class's computers.

Finally, the community celebration had enabled the intervention to conclude on a high note with the children getting an opportunity to receive positive feedback from their families and the local community. Bríd reported that the local community organisation were extremely proud of the children's creations illustrating that the intervention had had a wider impact than just on the children and their families.

*Bríd      ... mmm ... an coiste pobail ... bhí an coiste pobail chomh mórtasach as ... bhfuil a fhios agat ... Johnny ... chomh bródúil ... so, bhí an ceangal ... rinneadh ceangal i bhfad níos forleithne ná pobal na scoile ...*

Post-Phase 2 interview with Múinteir Bríd, Cluain Locha

This echoes the type of affirmation that Cummins and Early (2011) suggest is the likely result of identity text practices and the type of impact that Bigum (2012) suggests should result from the knowledge producing schools approach.

## **Chapter 8 - Phase 3, Further Refinements in a New Context:**

### **Barr na Leice**

#### **8.1. Introduction**

Barab and Squire state that “design-based research requires more than understanding the happenings of one particular context, but also requires showing the relevance of the findings derived from the context of an intervention to other contexts” (2004, pp.4-5). It was important, therefore, that I built on the successes of Phase 2 in Cluain Locha by seeing if a similar programme could be implemented in another Gaeltacht school.

Chapter 8 presents Phase 3 of the intervention – the results of implementing a similar set of six sessions to those that were successfully implemented in Cluain Locha, in a second school, Scoil Bharr na Leice. After initially describing the context in which the intervention took place, the chapter discusses several refinements that were made to the design on foot of the analysis of Phase 2. The other narratives in this chapter draw less on the categories developed during analysis and attempt to paint a more ethnographic picture of the key processes and experiences from both the researcher’s and the participants’ perspectives (following Mor 2011). This change in focus is to avoid repeating much of what was discussed in Chapter 7 about the process of implementation which is broadly similar here. Subsequently, this chapter follows a narrative that traces the learning trajectories of the class in general. This exemplifies that the children who chose to work with audio clips that they had a close personal connection with tended to work longer and engage much closer with the synchronisation process between the audio and the images that they chose. Two narratives then follow that focus in on the learning trajectories of one particular group (“An t-Oileán Mór”) and one particular learner (Tadhg) each of which exemplify the theoretical construct of the synchronisation cycle. The chapter continues with sections giving voice to the children’s and the teacher’s views on the intervention and concludes with a discussion of how the intervention might be improved further in future refinements.

#### **8.2. Description of the local context – Scoil Bharr na Leice**

Scoil Bharr na Leice, like Scoil Chluain Locha is a small two-teacher primary school in a Category A area of the Conamara Gaeltacht. It is over thirty kilometres from Scoil Chluain Locha, so it was unlikely that the children or their parents would have heard of my work there. Like Múinteoir Bríd in Cluain Locha, the principal, Múinteoir Síle (also a pseudonym), had also been a student on the M.A. in Language Teaching that I had taught an ICT module on and I expected that her teaching practice reflected the

values espoused by that programme – that children thrive in an environment where their voices are heard and where learning is achieved through participation in a set of social practices.

With this in mind I approached her shortly after I had completed Phase 1 of the intervention in Cluain Locha to see if she would be willing to participate to investigate how the approach that we were developing in Cluain Locha might transfer to another school in a Category A area of the Gaeltacht. I showed her an exemplary artefact that I had prepared in advance of starting in Cluain Locha and explained the work that we had been doing on the local area theme there. I told her about the yearbooks that the children had brought in and the programmes that I had sourced in the RnaG archive on the area. I explained that Phase 2 of the intervention which was just about to start was focused on language development and how we were using the cloud to store the resources about the local area and how these were available on all of the computers in the school. She was very enthusiastic about participating so we agreed that I would come to the school for six two hour sessions during the third school term – the same duration as Phase 2 was scheduled for in Cluain Locha. The teacher distributed parental/child consent forms on my behalf which were all returned giving permission to proceed with the research.

There were seventeen children in Múinteoir Síle’s classroom ranging in age from eight to thirteen. Their distribution among the various classes is outlined in Table 9. I arrived there in mid-April, after the Easter break to start Phase 3 of the intervention.

Class	Name
Rang 3	Art, Dara, Róisín
Rang 4	Kian, Lorcán, Pádraic, Máire, Siobhán
Rang 5	Gearóid, Marcus, Ultan, Tadhg
Rang 6	Beartla, Dónal, Íde, Ódhrán, Ciarán

Table 9 - Children and Classes in Scoil Bharr na Leice (all pseudonyms)

### 8.3. Outline of the sessions and initial set up

The room in which Múinteoir Síle taught was larger than the room in Cluain Locha. The children sat in groups at desks which were not organised according to the class they were in (i.e. there was a



mixture of ages at each table). The one main piece of technology in the room was an interactive whiteboard with an attached desktop computer. The school had a separate computer room containing a mixture of laptops and desktops running various versions of Windows (XP, Vista and 7). This was more typical of the technology set up that I had become accustomed to seeing in my school visits during the iTunes U project compared to the integrated set up of Scoil Chluain Locha.

I visited the school on several occasions prior to the commencement of the iteration to set up the technology. This included creating a cloud-based account (using Google Drive) for the project and installing the desktop version of Google Drive on all of the computers in the computer room and the classroom and setting its default account to the newly created account. I set the camera high up on a shelf in the corner of the room facing the children to try to capture as much interaction as possible during the sessions. I placed the camera in a similar position in the computer room (where we spent more of our time). I needed to be conscious of moving the camera from one room to the other in sessions where both rooms were in use.

The principal artefacts that the children brought into school from home were once again the local yearbooks from the area. This was a different publication from the type brought in to Cluain Locha but was of a similar nature – local stories, folklore and many photographs. I digitised these following similar procedures to Cluain Locha and made them available on the cloud drive.

The sessions would largely follow the same trajectory as the six sessions in Phase 2. These sessions would incorporate a brainstorming session with the children to create a mind map which I would use to trawl the Radio archives looking for audio resources related to the local area. From my experience in Cluain Locha, I knew that I would need longer than a week to listen to the programmes and extract suitable clips, so there would be a gap of two weeks to the second session. This would involve the children listening to the selection of clips that I had extracted for them. The children working in groups or individually would then choose a clip to base their multimodal artefact upon. The children/groups would work with synchronisation sheets (see below) to plan for their artefacts (ideally away from the computer) and then use these in a similar manner to storyboards to create their artefacts using Photostory.

## **8.4. Refinements to the Design from Phase 2**

### **8.4.1. Synchronisation Sheet**

One of the key design refinements in terms of tools and materials in this phase was the introduction of a synchronisation sheet, or ‘sync sheet’ for short (Figure 48) to support the children synchronising the audio with their choice of images. The act of synchronisation requires the child to

listen and re-listen to the audio to ensure that there is a cogent transition of image as the audio progresses. Chapter 5 describes the synchronisation cycle (Figure 22) as a key theoretical concept in promoting deep engagement with the audio text.

In Phase 2, I envisaged that the act of synchronisation through the software would be sufficient to support the cycle but Bríd's intervention (Section 7.2.4) in asking the children to write down timecodes as they listened to the audio was a prescient move that provided the children with an extra cycle of synchronisation – the sheet required them to focus fully on the audio and plan conceptually what their artefact might look like and commit that to paper. They could then approach the search for images, which can be a challenge, even for an adult, not to get swamped in, with a definite vision of what they require to make their artefact materialise. As well as recording the time codes, the sync sheet includes a column to add a note on the type of image that a child or group visualise as suiting each audio transition as well as a column for any effects in Photostory that they might wish to add. The sync sheet subsumes the richness sheet that was used in Phase 2 to identify items of interest during listening.

Ainm (neacha) na ngasúr: \_\_\_\_\_ LCH: \_\_\_\_\_  
 Teideal an phíosca: \_\_\_\_\_

Am	Pic	Nótaí

Figure 48 – Synchronisation sheets (top portion shown) were distributed to the children to help plan their artefacts and enact the synchronisation cycle

#### 8.4.2. Exemplary artefact and accompanying sync sheet

As with Phase 2, I prepared an exemplary artefact based on one of the audio clips to scaffold the children's activities and to help focus the children on what could be achieved with the software. In Phase 3, I also distributed an exemplary sync sheet (Figure 49) that matches the image transitions and software effects that I had implemented in the artefact. The audio was a clip about Oileán Naomh Chiaráin and the pictures were extracted from the local yearbooks. When I played the artefact on the screen, I asked them to follow the sheet carefully to ensure that they understood how to develop their own synchronisation sheets correctly. I envisaged it as acting a scaffold that they could refer to when required.













Am	Pic	Nótaí
0	Oileán iomlán slua	→ agus 
33	Teampall	 teampall
44	Altóir	 sagart
55	Oileán dorcha	‘chalk and charcoal’ →
1:00	Seán Cheoinín	Téacs bán “Seán Ó Ceoinín” 
1:05	Barr an Oileáin	‘sepia’  Barr
1:10	Radharc le bád	‘sepia’ 
1:15	Mapa	Ó Cruach na Cara  agus ↖ go dtí
1:31	Cruach na Caoile 1	←
1:38	Cruach na Caoile 2	→
1:45	Mapa	Ó Cruach na Cara → go dtí
1:54	Oileán Máisean 1	 ón teach tréigthe
2:12	Mapa	Cruach na Cara + Oileán Máisean  Oileán Aimhréidh + Oileán Muirleach
2:24	Oileán Máisean 2	 ó na tithe tréigthe
2:33	Trá + Teampall	
2:38	Teampall luí na gréine	↖ + 
2:44	Deireadh	

Figure 49 – Sample sync sheet distributed to the children while they viewed an exemplary artefact that I had created based on an audio clip on the annual pilgrimige to Oileán Naomh Chiaráin. It shows timecodes, images and photostory effects applied.

## 8.5. Barr na Leice Narratives

### 8.5.1. An outline of interactions in Session 1

After introductions, the children actively drew on their prior knowledge to participate with me in using an online brainstorming tool (text2mindmap) that takes as input a bulleted list and outputs a colourful mind map (Figure 50). The structure of the mind map is automatically recalibrated as new additions are made. This was a minor refinement from Phase 2 to enable the mind map to be amended

at any stage in the iteration. It was also more attractive than the one written in Cluain Locha on the whiteboard.

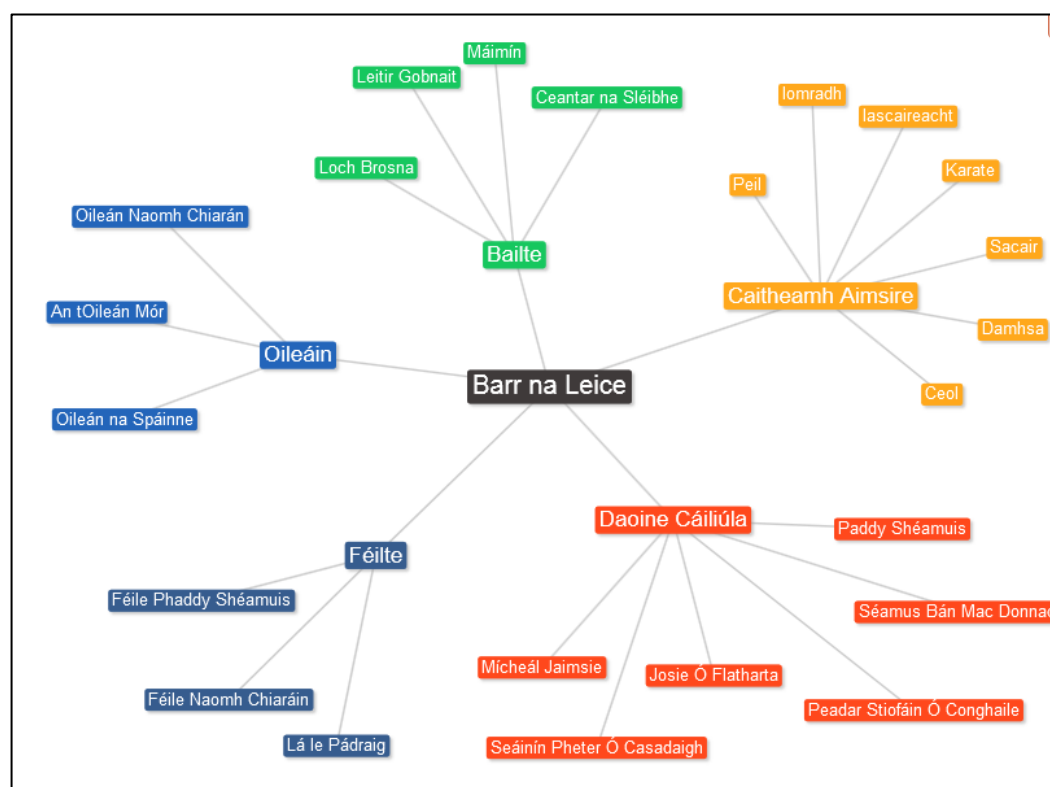


Figure 50 - Barr na Leice Collaborative Mind Map . Identifying characteristics have been anonymised but the structure of the map is identical to the one generated by the children.

During the brainstorming, I used Google Maps and Google Streetview to scaffold the children's discussion about what the main features of the local area are. Having a map on the board helped the children to focus on features that they may have forgotten to mention, particularly local place names and geographical features.

Ciarán	Niall	... tá Loch Brosna taobh thuas ...	pointing at the screen
Niall	Ciarán	... cén áit? ...	I'm navigating Google Streetview
Ciarán	Niall	... ansin ...	we find a view of the lake
Niall	Ciarán	... ó ... feiceann tú é sin ón mbóthar ... yeah ...	

Phase 3, Session 1, Barr na Leice

When the mind map was finally complete, the children expressed amazement at how big it had become and commented on how impressive it looked. I saved the map and made a URL available to the teacher that would enable them to make further amendments. I explained to them that the mind map was what would help us identify resources that we could use to build our artefacts from. I would use the data in the map as search terms to trawl the radio archive with and I asked them to ask at home about the themes that they had developed and to bring artefacts or knowledge from home related to those themes. I explained how I would be able to digitise the artefacts (scan or take a picture of them)

and then return them. I also mentioned the opportunity to borrow an MP3 recorder to interview somebody at home.

### **8.5.2. Extensive Listening and Choosing Themes**

Most of the children had identified the themes for their artefacts during sessions 2 and 3. In session 2, the children listened extensively to longer programmes that I had found in the archive related to the local area. The nature of these programmes was important to ensure that the children would be sufficiently interested in them to commit to listening to long extracts or even entire programmes. Rost suggests that listening content needs to be made accessible to the learner:

Development of listening ability is directly related to the quantity and quality of input a learner seeks. We all know that simply being surrounded by input will not ensure listening ability development. The input must somehow be made accessible to the learner and the learner must somehow make a cognitive commitment toward understanding the input if language development is to take place.

(Rost, 2011: 180)

The programmes that I identified as best satisfying these criteria included a programme that had been made in the school ten years previously, a long and dramatic story about a narrow escape for some local fishermen, several programmes relating to life on An tOileán Mór, a now deserted island and several programmes featuring Peadar Stiofáin Ó Conghaile (Tadhg and Beartla's grandfather).

The teacher moved from group to group enquiring about what they had been listening to. This was based on a genuine interest and curiosity (which she emphasized during our final interview) and the children seemed to delight in being able to share this rich local information with the teacher and more importantly with one another.



**Figure 51 - Extensive collaborative listening in Scoil Bharr na Leice. Múinteoir Síle was able to plug her set of headphones into each group's audio splitter to support their listening**

The extract about the sea rescue generated a lot of discussion among the children. The story related to a boat that had capsized in the locality and several local fishermen were almost killed. It was a dramatic story but quite a long clip related by a local man, Stiofán Bán, who was involved. One of the boys told Síle that Stiofán Bán was his great-grandfather. It surprised her that he recognised this as she was unsure if she'd recognise her own great-grandfather so easily. As it was quite a long clip, I asked her if she thought many of the children had listened to it. She thought that they all had and one of the girls recognised the name of the man who rescued the fishermen but used his *ainm baile* (*home name*) to identify him rather than the name mentioned in the story.

Niall ... ó ... bhuel ... léiríonn sé sin go raibh siad really ag éisteacht ...  
 Síle ... ó yeah, mar nuair a tháinig Íde trasna ar sin ... dúirt sí an t-ainm ... ainm baile arís ... ní chuimhin liom céard a bhí ann agus bhí mé ag rá "céard?" ... agus bhí sí ag rá ... "sin an fear a shábháil iad" ... bhfuil a fhios agat ... so, bhí sí ag cuimhneamh air ... ag faire amach don ... bhfuil a fhios agat ... don ainm seo ... so, ...

Phase 3, Post-Session 2 debriefing, Barr na Leice

One of the most valuable files that I found was an episode of the programme "Turas Scoile" that had been recorded in the school 10 years previously. Many of the children recognised voices in this programme which generated great interest during the listening. Children from different groups would come over to each other telling them who they had heard and what time they were at in the recording:

Ciarán: ... Odhrán ... ar uimhir a seacht, gabh go dtí 17:30 nóiméad ... tá Patrick agus Jenny ann ...

Phase 3, Session 2, Barr na Leice

Odhrán's group then jumped to that part of the recording and shortly after they smiled and called out Patrick and Jenny's names (cousins of Odhrán's). An older sister of two brothers in the class (Beartla and Tadhg, 11 and 12) was interviewed in "Turas Scoile" and she spoke about her two baby brothers and how she helps her mother mind them. This was one of the highlights of the listening session in Barr na Leice. Having already explained how to access the content at home, I asked the boys would they play this clip for their sister (who's now twenty) and they assured me that they were going to do it that evening. In a subsequent interview, the teacher thought that these programmes really helped to focus the children on engaging in extensive listening:

*Síle: na gíotaí a fuair tú le haghaidh iad a ... cineál .. le tús a chur leis an rud ...  
píosáí ón scoil é féin .. tá mé ag ceapadh gur bealach maith é sin le  
haghaidh iad a tharraingt isteach ... bhí siad sin cinnte ag an leibhéal  
ceart .....*

*Síle: ... chonaic tú féin iad an lá sin ... ní riabh gíog ná míog astu sa seomra ach  
a bheith ag éisteacht, éisteacht, éisteacht, ... bhfuil a fhios agat ... agus a  
bheith ag déanamh na ceangailtí idir ... eh ... cé hiad ...*

Post-Phase 3 interview with Múinteoir Síle, Barr na Leice

The children knew that I would be extracting clips from these programmes for them to develop their artefacts on, so it was not surprising that several requests came in looking for clips that featured relations of theirs. Just like in Cluain Locha, the personal connection with the archive and with the yearbooks was a huge factor in sparking the children's interest and engagement. For instance, when Íde mentioned that she's like to do her theme on the late "Mícheál Jaimsie", Beartla, sitting across the table from her immediately recognised the name asking if that's "Uncail do mháthair? ..." [your mother's uncle?] and they whisper among themselves about this topic (he was actually her great-grandfather). In Session 4, while some of the children were still choosing their clips, the following exchange typified the personal connections that they were finding in the clips:

*Beartla Síle ... bhí mo mháthair air agus bhí uncail Ghearóid air ...*

*Síle Beartla ... bhí do mháthair air! ...*

*Beartla Síle ... yeah ...*

*Síle Beartla ... an raibh? !! ...*

*Síle Gearóid ... agus d'uncail? ...*

*Gearóid Síle ... yeah ...*

Phase 3, Session 4, Barr na Leice

I reflected several times on the connections that they were finding:

The amount of people that they knew and the connections ... the family connections that they were able to make ... between people in the recordings was just amazing ... the depth of knowledge ... there really is ... drawing on their prior knowledge about the local area ... and particularly the people ...

there's such a strong link ... with the local people ... that the teacher commented several times afterwards on how she couldn't believe how ... how much this had piqued their interest ...

Phase 3, Researcher reflection, post-session 2, Barr na Leice

In our debriefing discussion after Session 4, Síle had very kind words for me as we both reflected on how engaged they had been with the recordings:

*Síle ... like ... tháinig tú suas le smaoineamh just ... den scoth ... really, like ... just tá an ... tá mise an-tógtha leis an ... an ... an t-ábhar é féin like ... bhfuil a fhios agat ... ag fáil ... taifeadtaí ... bhfuil a fhios agat ... tá an Ghaeilge chomh saibhir, chomh breá ... iontu ar fad, like ... agus tá tú á úsáid istigh sa seomra ...*

Phase 3, Post-session 4 debriefing, Barr na Leice

## 8.6. Participant Narratives

The following narratives are based on the experiences of the participants in creating their artefacts. The following table outlines the groups, themes and nature of the clip on which they based their multimodal artefact.

#	Theme	Children	Recording	Year	Genre
01	An t-Oileán Mór	Siobhán, Róisín, Dónal	Home recording of Siobhán interviewing her grandmother about her life growing up on a local island, An t-Oileán Mór	2014	Personal Recording - Interview
02	Pota Mór Fataí	Tadhg	Radio recording of his late grandfather singing this well-known song	1998	Song
03	My cousin the soccer player	Lorcán & Ultan	Home recording of Liam talking about his cousin who has played international soccer	2014	Personal Recording
04	My great-grandfather, a well-known Sean-nós dancer	Íde	Archival interview from of her great-grandfather, who was well known in the area for his sean-nós dancing skills	1976	Interview
05	Visiting Oilean Naomh Chiaráin	Ciarán, Kian & Dara	Archival documentary excerpt of the annual pilgrimage to Oileán Naomh Chiaráin. Features local people pointing out local landmarks and talking about recent work done to restore the chapel on the island	1975	Documentary
06	Daredevil comic strip	Art	Theme music to the Daredevil movie	n/a	Comic Strip & Theme Music
07	Currach racing in America	Gearóid & Beartla	Gearóid's uncle being interviewed about winning a currach race in America	1994	Archival Interview



08	My relation, the bishop	Máire	A recent interview with a relation of Máire's who was recently ordained a bishop in England.	2013	Archival Interview
09	Our football club	Pádraic, Odhrán & Marcus	A recording of a song commemorating a big win for the local football club in the 1970s	1975	Song

Figure 52 - Barr na Leice - Themes and audio clips that each group worked on

### 8.6.1. The overall learning trajectories

Máire (4<sup>th</sup> class) wanted to do her story about “nephew mo Mhamó” who was recently ordained as a bishop in England and I had managed to find a recent interview with him in the archives. She brought in some pictures from home that she had gotten from her grandmother and I scanned these for her to use in her story. She used the exemplary sync sheet (Figure 49) to help her fill out her own (Figure 53) while listening to the recording on one of the MP3 recorders.

Am	Pic	Nótaí
0	<sup>3000</sup> P14 mouth	→
07	FasPog Mark	⊕
13	Easpog searmonas	⊕ ←
28	th	⊖
34	easpog dolasgorn	←
43	ot3	⊕
59	th2	⊕ →
1:11	iaraspog agus easpog mark dolasgorn	⊕
1:19	Aideaglais P1ymon	⊖
1:26	th (4)	→
1:32	easpog markao <sup>Salsa 6:00</sup>	←
1:43	mark agus a clann	⊖ ←
1:52	easpog ael conlay na daoine	⊕

Figure 53 - Máire's synchronisation sheet which shows evidence of her sustained listening to the audio as she plans for synaesthetically adding images and effects to it at specific times in the narrative using Photostory

I felt that it was preferable to get the children to work on their sync sheets using the MP3 recorders rather than playing the audio on the computers as there was far less scope for distraction using these compared to the computers. MP3 recorders are solely for working with audio, so this helps keep the focus on audio, particularly when children are working in groups. Once the children had completed their sheets, they then had a self-made scaffold to support their search for images online. In my own teaching experience, learners can lose focus very easily when searching online for images, so the sheet was a valuable tool to keep this focus. It is interesting to note in the Oileán Mór sync sheet<sup>40</sup> that the group added a tick as they added each image to their artefact.

The process of creating the artefacts followed similar social dynamics to Cluain Locha – with children showing great interest in one another’s progress and strong evidence of engagement throughout. By the time the final session arrived, around half the class were still working on completing their multimodal artefacts so that they will be ready to present to their families the following week. The children who had finished in the previous session included Ciarán, Kian and Dara (Oileán Naomh Chiaráin), Pádraic, Odhrán and Marcus (Our Football Club) and Gearóid (Currach Racing in America). Gearóid had been working on his own as Beartla had missed the previous two sessions.

What was particularly noteworthy was that two of the three groups who had finished early had all chosen themes that they didn’t have a strong personal connection with. The exception to this was Gearóid who’s uncle had featured in the clips he was working on, but he had been affected by Beartla not having been in school to work with him. I had suggested that these groups might like to create a second artefact as there was still one session to go, but they chose not to and spent the final session back in the classroom. In contrast, when Tadhg finished his artefact on his late grandfather (see Section 8.6.2), halfway through the final session, he immediately asked if he could do another.

My analysis of the artefacts that had finished early showed that the synchronisation between the audio and the image transitions tended not to follow the narrative structure in the audio as accurately as those that had continued into the final session. This was particularly true of the football club group who had just imported enough images to last for the full length of the audio and left the duration of each picture at the default value of five seconds. The artefact simply comprises of the song accompanied by a montage of random football images from the yearbook. It appears that this group simply wanted to complete the task as quickly as possible. They seemed to enjoy working on it at the time but there was not much identity investment in the audio apart from the link with the local club that they played for. It is unlikely that the football group fulfilled many of the desired outcomes of the intervention. Síle and I discussed the level of engagement of these children in our post-phase interview

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<sup>40</sup> See section 8.6.3

and she suggested that in the case of the football group, they simply chose football as a default option when they weren't sure what to do:

- Síle: ... sin a tharla leis an pheil bhfuil a fhios agat ... ní raibh a fhios acu céard a bhí siad ag iarraidh a dhéanamh so, chonaic siad peil ...*
- Niall: ... peil ... safe option ...*
- Síle: ... bhfuil a fhios agat ... yeah ... agus tá suim agam féin a bheith ... bhfuil a fhios agat ...*
- Niall: ... ach, chonaic mé inniu ansin go raibh siad ag athrú ... cinnte ... bhí siad actually ag cuimhniú ceart ... ó b'fhéidir go mbeadh suim agamsa ... bhfuil a fhios agat ... rud éicint difriúil a dhéanamh ... mo Photostory féin ...*

Post-Phase 2 interview with Múinteoir Síle, Barr na Leice

Perhaps more could have been done to try to ensure that there was a stronger personal connection between these children and the theme that they chose. It was interesting to note that originally six boys had wanted to choose the football club for their theme but gradually three of them switched to more personally engaging themes.

Most of the children who remained for the final session had a personal connection with the audio. Máire was still working on her artefact about “nephew mo Mhamó”, the newly ordained bishop. Siobhan, Róisín and Dónal were working on adding images to an interview that Siobhán recorded with her grandmother about her childhood growing up on a now deserted island, An tOileán Mór. The Oileán Mór’s learning trajectory is described in more detail in Section 8.6.3. Tadhg was working intently on perfecting the synchronisation between an audio clip of his grandfather singing ‘Pota Mór Fataí’ and the humorous images he had chosen to accompany it. His learning trajectory is described in more detail in Section 8.6.2.

Lorcán and Stiofán were searching for images online of a distant relation of Lorcán’s who plays for the Irish women’s soccer team. Lorcán borrowed one of the MP3 recorders and with the help of his parents wrote a script on her soccer career which he then recorded himself and dictated. This audio clip was the basis for the digital story that they were working on. Íde working regularly off her sync sheet (Figure 54) used Snipping Tool to import images of her late great-grandfather from the yearbooks into Photostory to accompany an audio recording of him from the archives speaking about the dancing competitions that he had won when he was a young man. She also added other images that she found online to the story and applied sepia effects to them to make them look older.



Figure 54 - Íde checking timings on her sync sheet as to how long to display the image of a pair of dancing shoes (on screen) as she listens to the audio of her late great-grandfather, Mícheál Jaimsie, a well-known local dancer in his time

### 8.6.2. Participant Narrative: Tadhg – My Grandfather, Peadar Stiofán

Tadhg, an 11 year old boy in 5<sup>th</sup> class chose his *Daideó*, Peadar Stiofán Ó Conghaile, as the topic for his multimodal artefact. Having been a well-known singer in the area, the teacher was convinced that there would be plenty of material in the archive featuring Peadar Stiofán – and she was right. During the extensive listening session (session 2), I provided Tadhg with a number of programmes that featured Peadar Stiofán both in conversation and singing on the stage and in the studio. One particular programme was broadcast as a tribute to him shortly after his death. Tadhg listened intently to this one was particularly taken with a rendition of ‘Pota Mór Fataí’ that his *Daideó* sang over the phone to Máirtín Tom Sheáinín. I suggested some other songs to him with better quality audio but he was very sure that this was the piece that he wanted to use.

In a previous debriefing sessions, Múinteoir Síle had told me that Tadhg wasn’t keen on repetitive tasks – once a task is finished, he prefers to move on to the next thing. While working on his artefacts in sessions 4 to 6, however, he was meticulous in perfecting the synchronisation between the audio and the images that he had chosen. After the fifth session, both myself and Síle had noticed the attention Tadhg had been giving to his artefact:

Síle      ...níor stop sé...ó shuí sé síos ansin ...agus ní hamháin sin...is fear freisin é...má tá rud déanta, tá sé déanta...agus sin, sin...agus imíonn sé ar aghaidh go dtí an chéad rud eile...bhfuil a fhios agat?

Síle      ...ach choinnigh sé ai ...ag dul siar...ag seiceáil an raibh an t-am díreach ceart...ar na pictiúirí ...agus ag athrú má bhí ...má bhí siad amach cúpla soicind nó...like, bhí an oiread...

Niall ...agus bhí an oiread bróid...bhí go leor [bróid]...  
 Síle ...[bród]...sin rud eile...bhí sé ag fiafraí díom...an mbeadh sé in ann é a chur ar USB...mar tá sé ag iarraidh é a thaispeáint sa mbaile...  
 Síle ...tá sé ag iarraidh é a thabhairt...tá sé ag iarraidh é a **bhronnadh** ar a Mhamó, so...bhfuil a fhios agat...

Phase 3, Post-Session 5 Debriefing, Barr na Leice

We also noticed Tadhg repeatedly singing along to the recording in an unselfconscious manner as he worked on synchronising the audio and images in Photostory. In our post-session discussion, Síle spoke of how proud she thought Tadhg was with his completed artefact. She also reported that Tadhg went out the door that day singing *Pota Mór Fataí*, a song, she said, that he hadn't known the words to prior to this:

Síle ...bhí sé ...chomh bródúil as.. agus, mmm...ansin, é á chasadh ag dul amach an doras ...so, tá amhrán pioctha suas aige...amach as freisin...bhfuil a fhios agat an chaoi sin?...mar ní raibh a fhios aige na focla roimhe seo...  
 Niall bhfuil tú i ndáiríre?...  
 Síle .. yeah...no, ní rabhas ...mar d'iarr sé orm na focla ...ar maidin...inniu...  
 ....  
 Síle ...agus fiú Tadhg ansin, bhí sé in ann an t-amhrán a chasadh agus é ag dul abhaile lá amháin ...bhfuil a fhios agat...sin fianaise go raibh go leor foghlamtha aige sin...

Phase 3, Post-Session 5 Debriefing, Barr na Leice

I was very excited by this finding. Tadhg having learned this song from engaging in the synchronisation cycle with this archival recording of his grandfather, illustrated that under certain circumstances, the archives themselves have the potential to effect intergenerational transmission.

Table 10 illustrates the structure of Tadhg's artefact. The cartoon and zany images that Tadhg chose for his artefact show that humour was a very important factor to him. He spent a lot of time searching for these particular images and even longer ensuring that they were synchronised perfectly with the audio.

Time	Transition points in the audio	Image / Image Description <sup>41</sup>	Animation Effect
00:00	the presenter asks Peadar Stiofáin to sing a few verses of 'Pota mór fataí'	[CARTOON IMAGE OF MAN WITH MICROPHONE]	zoom in on the microphone
00:07	the presenter mentions Peadar Stiofáin's name	photograph of his grandfather with his daughter when they were both younger	zoom in on his grandfather
00:10	the presenter asks Peadar Stiofáin to sing a few verses of 'Pota mór fataí'. He agrees and starts to sing ...'Tá pota mór fataí ag Pádraig An Rí, etc.'	[PHOTOGRAPH OF POT OF POTATOES]	zoom out slowly from centre of pot
00:44	... 'Is a bhó, a bhó, a bhó mo lao, srl.'	[PHOTOGRAPH OF A BLACK AND WHITE CALF]	zoom out from calf
00:55	... 'cuirfidh mé cóiste'	[PHOTOGRAPH OF AN OLD WOMAN]	zoom to right
01:06	... 'óra seanphota gliomach'...	[PHOTOGRAPH OF A BABY DRESSED IN A LOBSTER SUIT SITTING IN A LARGE COOKING POT]	zoom out
01:11	... 'Is a bhó, a bhó, a bhó mo lao'...	[PHOTOGRAPH OF A BROWN CALF]	zoom to left
01:20	... 'is mná Muintir Uaithnín ag ól a gcuid tae, ...' [Tadhg interprets this line literally (Uaithnín = Lamb rather than the surname) ]	[CARTOON IMAGE OF A LAMB WITH A TEA POT POURING A CUP OF TEA]	zoom out
01:44	... the song finishes and the sound slowly fades	[PHOTOGRAPH OF TADHG'S GRANDFATHER]	text added using a large red font <b>'Mo Dhaideó: Peadar Stiofán Ó Conghaile'</b>

**Table 10 - Structure of Tadhg's Artefact**

<sup>41</sup> Images that the children sourced online. The researcher was unable to identify the owners of these images and therefore copyright was unobtainable

The selection of images show that there Tadhg may not have appropriated the precise meaning of every word in the song but a teacher trying to ‘correct’ Tadhg could easily upset the positive emotional identity investment that he has made in his artefact. One of the images he was most proud of was the picture of the lamb with the cup of tea for the line “... is mná Muintir Uaithnín ag ól a gcuid tae ...”. If a teacher were to explain that “Muintir Uaithnín” is a family name and he were to change his feelings towards that picture due to this clarification, it may do more harm than good to the nature of his experience. After all, when children learn a song from a family member, it is not usually done by providing the words on paper and misinterpretation of meanings by the child do not prevent them acquiring the song.

Tadhg’s constant listening and relistening to the audio is another exemplification of the synchronisation cycle in action (Figure 22, p.128). Tadhg did not refer as often to his synchronisation sheet as other children or groups did. It was during his engagement with the audio through Photostory that the majority of his repeated listening occurred.

All of the children really enjoyed Tadhg’s artefact. As was common practice in both schools, the children visited one another’s computers to check in on their progress. Both teachers were comfortable with the children having the freedom to move around the class like this which greatly facilitated the children’s social learning and development through peer interaction. During the final session Ultan and Labhrás visited Tadhg and asked him to play his artefact a second time because they found his choice of image so funny (Figure 55).



**Figure 55 - Ultan (left) and Labhrás (right) enjoying Tadhg's (centre) multimodal artefact. The line “seanphota gliomaigh” from the song is currently playing as Tadhg’s picture of a child dressed as a lobster is currently on screen (far left)**

During the focus group, Tadhg asked if I would play it to the group and the children were all eager to see it once again with Lorcán stating “Tá ceann Tadhg go maith”. When it started to play, the

children pushed in towards my laptop to get a closer view (Figure 56) and Tadhg started to sing along once again with his grandfather and the other children .



Figure 56 - Children gather in closer to view Tadhg's artefact

### 8.6.3. Group Narrative: Oileán Mór Group working with Siobhán's recording of her Mamó

According to Síle, two of the girls, Siobhán and Róisín, were excited about the project even before I arrived in the school. Their grandmothers are sisters who grew up on a local island, An t-Oileán Mór, that was subsequently abandoned. As soon as they heard about the theme of the project, they knew straight away that they wanted to work on creating an artefact on the theme of growing up on t-Oileán Mór.

Siobhán	Niall	... bhfuil muid in ann ceann a dhéanamh faoin saol ar an oileán ... like daoine a mbíodh ina gcónaí ar an oileán ...
Niall	Siobhán	... cinnte ... bhfuil tú ag smaoineamh ar an Oileán Mór nó rud éicint mar sin ...
Siobhán	Niall	... yeah ...
Niall	Siobhán	... yeah b'fhéidir go bhfuil mise in ann píosaí a fháil ...
Róisín	Niall	... bhí mise agus Siobhán ...
Siobhán	Niall	... ag smaoineamh ar ... ár Mamó ...
Niall	Both girls	... ó ... iontach ...
Siobhán	Niall	... mar tá Mamó mise, Dara, Dónal agus Róisín ón Oileán Mór,
Niall	Siobhán	... ok ...
Siobhán	Niall	... [Doiléir] ...
Síle	Siobhán	... bheadh neart scéalta freisin ag Mamó nach mbeadh? ...
Siobhán	Síle	... yeah ...

Phase 3, Session 2, Barr na Leice

They then presented me with several pages of notes that they made having asked their grandmothers about life on the island. I was elated when I saw how engaged they were and asked them if they would like to read them out to the class. They asked me to do this as it appeared as if they were



too shy to do this themselves. I was happy to do this but soon got into difficulty as I found it hard to understand their writing. They both wrote with a strong oral slant. The individual words were also written phonetically. I reflected afterwards that:

... in parts it was quite difficult to read her ... her writing ..... eh ... and ...mmm ... she was writing phonetically ... and and ... again it just shows you the ... privileging of the written word in ... in Gaeltacht areas is, is, ... is not helping ... eh ... the language ... mmm ... in many respects ... I mean you wonder could the language almost bypass ... eh ... the written word ... in some respects in terms of ... their creativity ... because the ... they have no problem speaking the language ...

Researcher Reflection after Session 2, Barr na Leice

Rather than interpreting these texts simply as evidence of the children's developing literacy, I found that the texts were attempts by the children to instantiate their vernacular in written form and that they were at a great remove from the written standard. This was further evidence of the vernacular/standard tension and my reflection shows that I could envision how working exclusively with audio and visual data could bypass this tension and enable Gaeltacht children to successfully create texts in the much broader sense of the term that aren't problematic in terms of meaning-making nor in terms of 'correctness'. The teacher and I also discussed how engaged the girls were with the theme that they had chosen based on a strong personal connection:

Niall ... yeah ... tá na cailíní seo mighty ...  
Sile ... ó ... yeah, yeah ... tá an oiread suim acub ...  
Niall ... Róisín agus Siobhán ...  
Sile ... ach sin ... mar gheall go bhfuil ... a Mamó ... an ceangal sin ...

Phase 3, Session 2, Post-Session Debriefing, Barr na Leice

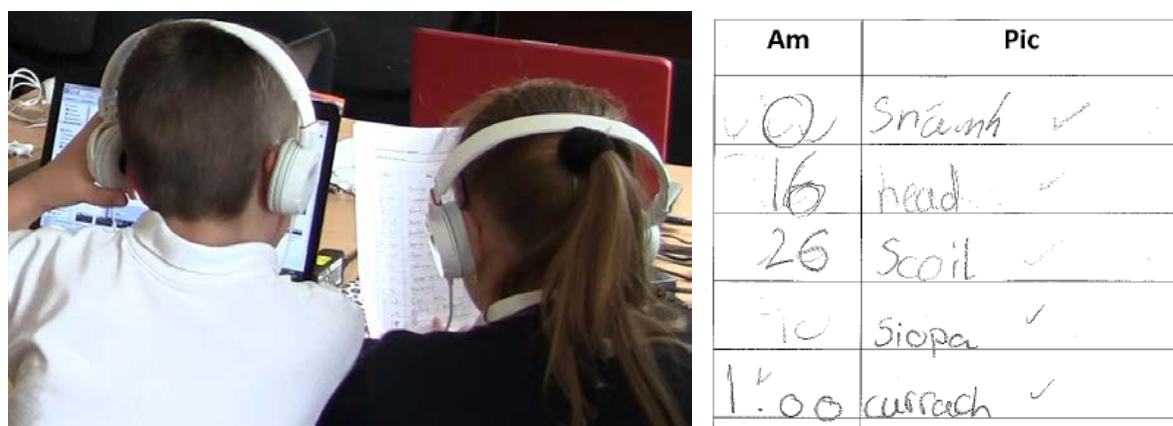
On several occasions over the course of the intervention they would volunteer updates of new information that they had found out about An t-Oileán Mór – they were researching at home about all of the family names that lived there. They were also avidly listening to the programmes that I was uploading to the cloud relating to the island, so I was sure that they would have no problem in selecting a clip from the selection that I was making available to base their artefact on.

It was both to my surprise and delight when Siobhán announced during the third session that she was going to interview her grandmother about life on the island and that they were going to base their artefact on that recording. Although I had offered the MP3 recorders to the class should anyone want to make a home recording, I was doubtful as to whether anyone would, based on my experience in Cluain Locha. Following Siobhán's announcement, three other children (Liam, Beartla and Íde) asked to borrow recorders too. In the end, Liam was the only other child to make a recording for his artefact – a recording of himself reading a script he had prepared at home with the help of his parents.

To ensure that the home recordings went smoothly, I provided some extra tuition for these children in how to operate the MP3 recorders including explaining how to set the recording levels, where to place the recorders during an interview. I also coached them in interview skills and asked them to prepare a set of questions that the teacher and I could check in advance to ensure that they got the best possible result from the interview.

The interview that Siobhán made with her grandmother is wonderful. It is almost six minutes long. Siobhán's tone throughout the interview is one of fascination as she finds out about the games children played, how they had to take a boat to go to school and to the shops, how not having electricity and therefore a fridge meant that milk would have to be kept in cold water in the summer, that they ate a lot of fish and that when they wanted meat that her father would have to kill something for their dinner, for example a chicken or a rabbit. Siobhán's recording shows that life was very hard growing up on the island but that her grandmother was very happy there.

Dónal, who is also their cousin and a grandson of Maimí (the lady in the recording) decided to abandon the football club group to join his cousins working on this artefact. The group worked diligently on their sync sheet to identify possible transitions in the dialogue and add suggestions for images to match these transitions (Figure 57). They then used the sheet to search for images in the yearbooks and online which they then added to Photostory.



**Figure 57 – Siobhán and Dónal from the Oileán Mór group using their synchronisation sheet as they work on timings between the images and the audio and an excerpt from their synchronisation sheet showing their planned images to add to the audio. They added a tic after each image was found and added to the artefact.**

The following sections demonstrate how the first minute of the audio was coded on their sync sheet and subsequently translated to Photostory. It is another example of two iterations of the synchronisation cycle in action – firstly enacting conceptual synaesthesia using the synchronisation sheet and secondly enacting material synaesthesia using Photostory. The following is a transcript of the first minute of Siobhán's interview with her grandmother:

Siobhán Céard a rinne sibh le haghaidh spraoi ar an Oileán Mór?

Mamó ... eh ... bhuel, bhíodh muid ag snámh ... bhíodh muid ag déanamh spraoi ar an trá ... agus amuigh ag imirt peil ... agus séard a bhíodh muid a' dhéanamh sa samhradh, bhíodh muid ag tóraíocht neadrachaí éanachaí ... agus bhíodh an-spórt againn ag breathnú ar na héiníní beaga ... ach ní déanfadh muid tada orthub ... sin a bhíodh muid a' dhéanamh ...

Siobhán ... agus ... bhfuil a fhios agat, an raibh aon scoil ar an oileán ... nó? ...

Mamó ... bhuel, bhí scoil ann fadó ... ach ní raibh aon scoil ann nuair a bhí mise ag éirí aníos ...

Siobhán ... agus, mmm, ... cén fáth go ndeachaigh ... bhfuil a fhios agat na múinteoireachaí amach ar an Aoine? ... agus thugadh siad ar ais maidin Dé Luain? ...

Mamó ... bhuel ... téadh siad abhaile ... mar ba ón mórthír iad ...

Siobhán ... yeah ...

Mamó ... agus thagaidís ar ais maidin Dé Luain ...

Siobhán ... just, siopa ar an oileán nó céard a rinne sibh? ...

Mamó ... siopa? ... ní raibh chaithfeadh muid dul amach go dtí an Máimín i gcurrach nó amach go dtí Barr na Leice. Bhí siopa i Caladh na gCarógaí freisin. Bhíodh muid in ann siúl go Caladh na gCarógaí ... teach amach ar an trá agus isteach arís ...

Transcript of the first minute of Siobhán's interview with her grandmother

The sync sheet was of great value to the children and they referred to it constantly as they worked on the computer (Figure 57). They revised their original plans slightly and the images that the group actually chose for the extract differed slightly from the sync sheet (Figure 58). For instance, they chose to show an image of the island as the title picture and didn't show an image of the local shop until later in the artefact. On the whole, though, the finished artefact largely follows the plan that the group laid out on the sheet.

Am	I	
10	Snámh	
16	head	
26	Scoil	
10	Siopa	
1.00	currach	

Figure 58 – The images that the Oileán Mór group used compared to their synchronisation sheet. The image of the currach is taken from one of the local yearbooks and features a local man returning to visit An t-Oileán Mór<sup>42</sup>

One major issue that they encountered was that they lost a lot of work when Photostory crashed on them during the penultimate session.

<sup>42</sup> Permission to reproduce these images has been granted by the publishers. Two of the images were sourced online and it proved impossible to identify the copyright holders



Figure 59 – The reaction of Siobhán when she realises that they’ve lost a lot of work due to Photostory crashing

Up to that point, they had been sourcing most of their own images online and in the yearbooks, but as time began to catch up with them, they began to make use of the candidate images that I had uploaded to their project folder. In the focus group Sinéad talked about how useful it was to have these images to tap into if and when required:

*Siobhán: Amantaí ní bheadh a fhios againn céard a bheadh muid ceaptha a dhéanamh ceart ag oscailt ... mura mbeadh a dhóthain am againn bheadh tusa in ann é a dhéanamh uaidh an ...*

*Niall: ... so ceapann sibh ... rinne mé iarracht chomh mór agus is féidir go mbeadh rogha agaibh ... ar thug sibh faoi deara ... ‘neadracháí éanachaí’... bhí trí nó ceithre nead ...*

Post-Phase 3 Focus Group 2, Barr na Leice

My reply to her illustrates how conscious I was that they retained a large degree of agency – by offering them a number of images to choose from. In the focus group, I also asked Siobhán if it was strange setting up a recorder to talk to her grandmother:

*Siobhán ... No, just an rud a rinne mé ... bhfuil a fhios agat ... níor thug mé aon suntas air ... just dúirt mé ... is cuma má tá sé ann ... just abair leat féin nach bhfuil sé ann ... agus just mar go bhfuil tú ag caint le do Mhamó ...*

Post-Phase 3 Focus Group 2, Barr na Leice

This group’s work showed an instance of the ideal learning trajectory that I had envisaged from the outset of the design. The success of other trajectories through use of the archives had shown that there were a number of valuable routes that could be taken to reach the desired outcomes.

#### 8.6.4. Community Celebration

The community celebration was held on the last day of the school year. Several of the children who had been working on artefacts featuring relations, were anxious for me to check their stories that morning to make sure that everything was perfect for the presentation. Many of the children intimated

that they were nervous about standing in front of an audience to present their artefacts. Síle and I tried to reassure them but most of them asked me to introduce their piece on their behalf. Three of the groups did stand up to present – these were the football group (Figure 60), the Oileán Naomh Chiaráin group and Lorcán and Ultan who used Lorcán’s home recording for their artefact.



Figure 60 – One of the groups who was courageous enough to present their artefact at the community celebration was An Grúpa Peile (the football group): Pádraig, Odhrán, Máirtín

## 8.7. The Views of the Children

I conducted two focus groups with the children in Barr na Leice. The first focus group was with the group of children who had finished one session early. The football group (Pádraic, Odhrán and Marcus) who had engaged the least in the project had very little to say during the focus group. The second focus group was conducted with the children who stayed working on their artefacts on the final day.

I asked the second group about the reasons that they had chosen the theme that they had. They all noticed that each one of them (with the exception of Ultan who was working with Liam) had a strong personal connection with the person in the recording. They all stated that they had really enjoyed the experience but that having a personal connection with the recording had increased their enjoyment even further. They told me that they had done a previous project on the local area :

*Siobhán: ... yeah ... ach ag scríobh a bhí muid ... ní dhearna muid tada ar na ríomhairí*

*Niall: ... agus céard atá difriúil faoi ceann a dhéanamh ... agus tú ag scríobh?*

*Lorcán: ... tá sé níos éasca ... agus tú ag scríobh ...*

*Niall: ... an bhfuil? ...*

*Lorcán: .... mar bhí mise ag déanamh dearmad ar an rud an chéad uair a rinne mé é ... so bhí sé níos éasca ... nuair a bhí sé scríofa síos agam ...*

*Siobhán: ... bíonn na ríomhairí níos éasca ... mar tá tú in ann a bheith i ngrúpaí ... agus ní chaithfeadh just duine amháin a bheith ag déanamh an obair uilig ...*

*Íde:* ... ach uaireanta briseann na ríomhairí síos ...  
*Niall:* ... bhuel, ... thar éinne Íde ... tá mé ag ceapadh go raibh mí-ádh ceart ort nach raibh? ... bhí lá amháin gur éirigh leat ar éigean tada a dhéanamh, nach raibh? ...  
*Íde:* ... yeah ...  
*Niall:* ... cé acu ab fhearr leatsa, ar fearr leat tionscnamh scríobh ar pháipéar nó ar fearr leat rud ar na ríomhairí? ...  
*Íde:* ... mmm ... níl a fhios agam ... is dóigh ba mhaith liom na Photostories ach just, [DOILÉIR] an laptop bhí sé i gcónaí briste ...  
*Niall:* ... so, dá mbeadh sé ag obair níos fearr? ...  
*Íde:* ... yeah ...

Post-Phase 3 Focus Group 2, Barr na Leice

Lorcán's observation related to the fact that he was making a voice recording at home speaking about a relation who plays soccer and that it was easier to write out what he wanted to say than try to remember what to say without some written guidance. The fact that Íde's story was one of the best in terms of synchronisation and the effects that she added was a testament to the passion that she showed towards the subject of her artefact – a recording of her late great-grandfather. She did this with great persistence and stoicism having encountered a myriad of technical problems that she refers to in the above extract.

Focus Group 1 all agreed that they liked working in groups. The Oileán Naomh Chiaráin group suggested that this was because they all had different opinions about what pictures to use with certain parts of the audio and that it improved the story by having to compromise on this. They suggested that if they had worked individually, they might not have been able to interpret the story as well as a group could because they each knew about different features of the theme that contributed to the overall process. All of children in the group agreed that the audio splitters were a crucial piece of equipment in facilitating their progress.

*Niall* ... cén rudaí a cheap sibh a bhí úsáideach? ...  
*Ciarán* ... iad seo ... iad seo go mór ... *holding a splitter*  
*All:* ... yeah ...  
*Niall* ... céard a thaitin libh faoi na rudaí beaga glasa?  
*Kian:* ... bhí go leor daoine in ann a bheith ag éisteacht ...  
*Ciarán:* ... yeah ... ag an am céanna ...  
*Kian:* ... ní bheidh chuile dhuine ag troid ...  
*Ciarán:* ... yeah ... ní bheadh mórán troid ann ...

Post-Phase 3 Focus Group 2, Barr na Leice

The group agreed that clips relating to the local area than were of much greater interest to them than clips that originated elsewhere.

*Ciarán:* ... tá siad sách suimiúil ...  
*Kian:* ... go maith ...  
*Ciarán:* ... ní cheapadh tú go mbeadh an méid sin faoin gceantar é féin ann ...

*Kian ... yeah ...*

Post-Phase 3 Focus Group 1, Barr na Leice

These were recordings of their people speaking in their vernacular:

*Ciarán: ... bhuel an bealach a labharfadh daoine ... bhí sé ... ní raibh tada aisteach faoi mar go rabhadar uilig ... níos mó acub ... ón gceantar agus rugadh iad sa gceantar ..*

Post-Phase 3 Focus Group 1, Barr na Leice

I asked them to compare traditional writing-centred projects with the multimodal work that we had been doing with Photostory and Ciarán observed that given the amount of time that they had, it would have been impossible to make the same amount of progress in creating a text-based version of the Photostory.

*Ciarán: ... leis an méid ama a bhí againn freisin, ní bheadh leath de na rudaí bhí déanta le iris ná le leabhar ná tada freisin ...*

*Kian: ... yeah ...*

*Ciarán: le Photostory, bhí a ndóthain am againn le haghaidh cuimhniú céard a bhí muid dul a dhéanamh agus é sin a dhéanamh*

Post-Phase 3 Focus Group 1, Barr na Leice

I asked the children if they'd prefer to create a traditional Photostory, speaking into a mic themselves or to use clips from the archive, they all replied "píosáí ón raidió":

*Kian: ... mar gheall ... tá sé go deas éisteacht le daoine, abair, seandaoine ag caint faoi ... abair, cosúil le Oilean Naomh Chiaráin, tá sé ann le tamall ... tá sé go maith a bheith ag éisteacht le seandaoine ag caint faoi ...*

*Ciarán: ... agus tá níos mó eolas acu faoi ...*

*Kian: ... yeah ... agus níl mórán eolas againne ...*

*Ciarán: .... i bhfad níos mó ná mar atá againne ...*

Post-Phase 3 Focus Group 1, Barr na Leice

They all stated that they had learned something new from the process – not necessarily new language but stories about the locality, something that they highly valued:

*Marcus: ... ní raibh a fhios agam faoi "scéal an hata" ...*

*Ciarán: ... yeah, mise ach an oiread ...*

Post-Phase 3 Focus Group 1, Barr na Leice

I asked the second focus group about what their families had thought about the project and Siobhán said that their families were happy that they were learning new things about the local area. They all stated that they were similarly interested in each other's artefacts because they might find out something new about the local area and about people from the area. I asked them to consider the difference between working with audio on its own and working with pictures on their own and what the benefits were of stitching them together:



*Siobhán: ... bíonn sé i bhfad níos fearr ...*  
*Róisín: .. yeah ...*  
*Siobhán: ... because bíonn a fhios agat céard atá ag tarlú níos fearr ...*  
*Róisín: .. yeah ...*  
*Siobhán: ... mar gheall ar ... mara bhfuil ann ach fuaime níl really pictiúr maith agat*  
*... ach mara bhfuil ann ach, eh, pictiúr níl a fhios agat, really, an fuaime*  
*ceart ... ach le chéile, tá a fhios agat chuile shórt ...*

Post-Phase 3 Focus Group 2, Barr na Leice

The children in both focus groups were grateful for the images that I had made available in their project folders and preferred the option of choosing among these pictures than having to search online for pictures. They had noticed that there was still a choice of image available (e.g. I had uploaded several images of birds' nests for 'neadracha éanacha'). They were aware that they were free to search online if the images that I had made available didn't match their intentions on their sync sheets. I asked them about searching online and they stated that they had found it difficult to find images to match the audio. It seemed as if they were sometimes searching for very literal interpretations of what was in the audio, something that would indeed prove difficult to match:

*Siobhán: Thriail muide ceann a fháil go ... b'fhéidir, like ... dá mbeadh triúr i mbád*  
*nó ceathrar agus bhí sé crua ceann a fháil mar gheall ... b'fhéidir gur bád*  
*difriúil a thiocfadh aníos ná currach ... so bhí sé sin cineál ...*  
*Niall: ... mmm ...*

Post-Phase 3 Focus Group 2, Barr na Leice

The first focus group agreed that it was difficult to find pictures online:

*Kian: ... ní raibh mórán pictiúir ... bhuel ...*  
*Ciarán: ... bhí pictiúirí ann ach ní raibh an méid sin, let's say faoi ... céard a bhí*  
*muid ag cuartú le haghaidh ...*

Post-Phase 3 Focus Group 1, Barr na Leice

Some of the children in the first focus group reported that they had difficulties accessing the cloud drive on tablets at home:

*Ciarán: ... chuaigh mé ag cuardú é ar an App Store ... ach ní raibh mé in ann é a*  
*fháil in aon áit ...*  
*Niall: le haghaidh an tablet? ... Android atá agatsa ab ea? ...*  
*Ciarán: ... yeah ...*  
*Niall: ... ok ... tá app ann Google Drive, but ...*

Post-Phase 3 Focus Group 1, Barr na Leice

This was a problem that I hadn't anticipated. I had tested the Google Drive app on both iOS and Android devices while in Cluain Locha and the resources were easily available via the apps on both platforms and the children in Cluain Locha had not reported any problems accessing the resources at home either. The robust infrastructure had been successful but there is an issue relating to access at

home that would need to be solved in a subsequent iteration of the design. I reminded them that their families would get a chance to view their artefacts at the celebration in the school at the end of the project.

When I asked the second focus group about what they would change if the intervention was being run again in their school or in another school, the only suggestion made related to making sure that the technology worked properly.

*Íde: ... just na ríomhairí ... bhris siad go leor uaireanta ...*

*Niall: ... yeah ...*

*Siobhán: ... b'fhéidir cúpla spare a bheith agat ...*

*Íde: ... ní raibh na rudaí ag obair ...*

*Niall: ... tharla sé sin daoibhse freisin ... chaill sibh ...*

*Grúpa: ... [GÁIRE] ...*

*Niall: ... roinnt ... nár chaill? ...*

*Grúpa: ... [GÁIRE] ... yeah ...*

Post-Phase 3 Focus Group 2, Barr na Leice

## 8.8. The Views of the Teacher

Early in the intervention, the teacher mentioned several times how interested she was in finding out about the history and customs of the local area as she is from another part of Conamara and only recently started working in the school. Like Múinteoir Bríd in Cluain Locha, she became very familiar with the audio clips which was of huge benefit to the children when she was supporting their listening and engagement. The teacher showed her curiosity throughout the intervention asking the children about local people and places that arose in conversation over the course of the project. As she isn't from the locality, in a later interview, she expressed her own sense of duty to find out as much as she could about the locality and its traditions so that she could engage to a greater degree with the children's and the community's interests.

*Síle: ceapaim gur feall é a dhéanfainn ar na gasúir ... mura bhfoghlaimíonn mé níos mó faoin gceantar*

Post-Phase 3 Interview with Múinteoir Síle, Barr na Leice<sup>43</sup>

She stated that one of her aims when she started working in the school was to build a store of resources to support language enrichment

*Síle: ... sin é ... just ba mhaith liom stór stuif a bhailiú ... do na hardranganna ó thaobh saibhriú teanga ... mmm ... fiú na traidisiúin áitiúil agus an fhoclaíocht a bhaineann leis an fharraige nó leis an ... leis an bportach ... nó an aimsir ... bhfuil a fhios agat ... na sean- ... I suppose ... nathanna nó*

<sup>43</sup> The remainder of the quotes from Múinteoir Síle in this section are from this interview unless otherwise stated

*fiú ... na pisreoga nó na creidiúintí a bhí acub ó thaobh an aimsir de ...  
agus rudaí mar sin*

She stated that she was delighted that these requirements were met when the opportunity arose to work on this project. One of the reasons that she saw as her duty to do this, is that she sees that the knowledge of local traditions and folklore aren't as strong right across the community and that the school, therefore has a duty to ensure that children are made aware of their local language, heritage and culture. Fascinated by this, I asked her to elaborate

*Síle Déarfaimid ... b'fhéidir go bhfuil gasúr ag cónaí sa gceantar ... nach ... as an gceantar dá muintir fiú ... nó .. mm. b'fheidir gur as duine amháin ... nó ... go labhraítear Béarla sa mbaile fiú ... agus nach gcloisfeadh siad ... b'fhéidir cuid de na scéalta bainteach leis an gceantar ... nó na traidisiúin ... nó an fhoclaíocht bainteach le roinnt de na traidisiúin sa gceantar ... [pause] ... mura ndéantar sa scoil é ...*

I asked her if she feels that the attachment to the language and traditions in the area are still strong

*Síle ... mmm ... déarfainn go bhfuil ... [thinking] ach cosúil le aon cheantar eile ... táimid ag cailleadh roinnt den ... tá na traidisiúin ag imeacht ... fiú ... [2 sec] le mo linnse ... táimid ag cailleadh roinnt den fhoclaíocht mar gheall nach mbíonn muid ag déanamh an stuif sin níos mó... bhfuil a fhios agat ... ní bhíonn muid fiú ag dul ar an bportach agus rudaí .... níl a fhios agam an dtéann mórán de na gasúir ar an bportach anois ... ach le mo linnse gabhfadh muid uilig ar an bportach ...*

One of the sessions that created the greatest impressions on Síle was the extensive listening in session 2 when the children were totally engaged in listening to programmes about the local area and repeatedly identifying connections between the people in the audio and the children themselves

*Síle ... like, ní raibh focal astu an lá sin ... bhfuil a fhios agat... an t-aon focal a bhí astu ná ... "tá gaol agamsa leis sin" ... nó ... "sin é do chol ceathrar" ... nó ... "sin col ceathrar le ..." ...*

When Múinteoir Síle witnessed how the cloud/local solution worked in practice for the first time, she remarked on the value of having all these resources stored together in one place. She reiterated this point In our final formal interview, when I asked her opinion of the radio archive and related resources she expressed great pleasure at having these being made available to the school for the project and also how this connected with her vision for the school to have a bank of resources future use:

*Síle ... tá sé iontach, iontach ... like ... tá mé fein fíor riméideach ... tá sé seo ráite agam [claps hands, laughing] ... leat 10 n-uair leat má tá sé ráite uair amháin ... [laughing] go bhfuil an stuif sin ar fáil againn anois sa scoil ... mmm ..... is áis a bheas ann ar feadh blianta fada ag teacht ... rud ar bith ... a d'fhéadfadh muid a bheith ag déanamh staidéar air sa rang ... bhfuil a fhios agat ... stair ... an stair áitiúil nó daoine áitiúla nó cibé rud é*

*féin ... b'fhéidir go mbeadh muid in ann dul ag an stuif sa gcartlann ... le haghaidh é a tharraingt isteach sa rang ...*

We then started to discuss issues around children's agency, something that she had thought a lot about when she was studying for her Master's degree in education and she recalled vividly the advice that a lecturer (not the researcher) had given her about giving children as much choice as possible within an invisible structure that the teacher had constructed in the background:

*Síle ... "tá tú ag tabhairt ... cineál rogha dóibh ach taobh thiar dó sin tá sé uilig socraithe suas agatsa nuair a théann siad i dtreo na roghanna seo" ... so, I do chloigeann tá cineál barúil agat cá bhfuil sé ag dul ar bhealach ... an dtuigeann tú ... agus tá tú ... ar nós a bhí déanta agat ... cineál ... agus tá tú réitithe dhó sin .. in áit ligint dhóibh dul amach agus rud ar bith ... bhfuil a fhios agat ...*

She also emphasised the importance of group formation and that structured agency should also inform the way that groups are formed. She noted that Ciarán, who was the strongest personality in the Oileán Naomh Chiaráin group, had done most of the work of the group and that the assignment of roles within the groups would have ensured that all children had an opportunity to contribute equally to their artefact. Group dynamics, she suggested, was also one of the reasons why the football group had not engaged as much as they could have in the project:

*Niall ... thug mé faoi deara le ceann na peile ... níl a fhios agam ar mharaigh siad iad féin ...*  
*Síle ... no, no, no, ... níor mharaigh ...*  
*Niall ... tá mé ag ceapadh gur just "caith suas an méid pictiúir agus is féidir ... agus ansin" ...*  
*Síle ... "agus beimid críochnaithe ..." ....*  
*Niall ... "agus beimid críochnaithe ... agus nílmid ag iarraidh ceann eile a dhéanamh" ....*  
*Síle ... no, níor mharaigh siad iad fein ..... ach, níl a fhios agam a b'shin an dinimic a bhí sa ngrúpa freisin ... bhfuil a fhios agat ... na buachaillí ... agus scaití teastaíonn duine éicint le ... a tharraingeodh ar aghaidh é ...*

Despite some of the children finishing their artefacts early, Síle felt that they had all been motivated to engage deeply with the intervention:

*Síle ... mmm ... [4] ... bhuel ... just .... I suppose ... chomh spreagtha agus a bhí na gasúir ... bhfuil a fhios agat ... bhí siad an-spreagtha an bealach ar fad thríd ... b'fhéidir ag an deireadh ... bhfuil a fhios agat ... bhí cuid acub ...*

She also intimated that she felt that the third session had been a slightly lost session. I was hoping that the children would choose their clip during this session, but not all of the children had done this. She suggested that the exemplary artefact with the exemplary sync sheet were key factors in scaffolding the children's understanding of the goal of the intervention and that it might have been better to show these at the start of the third session rather than at the start of the fourth. In relation to the exemplary artefact she stated:

*Síle ... yeah ... agus ... is ag an bpointe sin a chonaic tú iad ag rá ... [tone of 'now I understand'] "Áááá ... OK" ... bhfuil a fhios agat ... tá mé ag ceapadh fós nach raibh siad ró-chinnt eárd é an deireadh a bheadh leis go dtí gur thaispeáin mé sin ... agus ... teastaíonn na samplaí sin ... go háirithe ag an aois sin ... just ... I suppose nuair nach raibh aon taithí acu le Photostory ach an oiread, bhí ... b'fhéidir gur theastaigh níos mó am ... idir rud éicint a bheith pioctha acub ... la, la, la ... sásta leis ... agus ansin thosaigh an stuif sin a fháil agus ansin dul isteach sa ríomharlann ... just ceapaim gur theastaigh níos mó am ... mar a deir mé, b'fhéidir go raibh an locht ormsa ag athrú seisiúin thart freisin ...*

The last line of dialogue references one of the main reasons that this had happened – for scheduling reasons the second and third sessions had happened in the same week which had not given me enough time to generate the exemplary artefact. The main point of the teacher's argument is valid and we both agreed that that children should have clarity about their choice of clip and the target of the activity (through the exemplary artefact) by the end of session 3. We also agreed that the schedule should ensure that sessions cannot occur in quick succession.

Síle also suggested that that end of the school year is not the ideal time for such an intervention. She felt that she would have had more time to put into the intervention had it been earlier in the year. Having said that, she emphasised the importance of the resources that had been gathered from the archives and that both the children and their parents recognised this value, particularly after the community event that was held in the school:

*Síle ... mar fiú, ... chonaic tú féin, tháinig an t-uafás amach an oíche a raibh an taispeántas againn ... bhí an-suim acub ann ... agus tá mé ag ceapadh gur tháinig sé sin ó na gasúir féin ... agus ... mar a deir mé an oíche sin, tá an stór seo anois againn ... like tá mé ag ceapadh ... bhfuil a fhios agat ... go dtuigeann siad an saibhreas atá ann anois leis an stuif ón gcartlann ...*

In relation to the technology that was used during the intervention, Síle felt that it was at the right level for the ages of the children. She saw them learn how to use it faster than she did but still felt comfortable with all aspects of it. She, like the children in the focus groups, had particular praise for the audio splitters as she saw how they enabled all of the children to work simultaneously on the computers despite there not being one computer per child. She also praised the fact that the cloud/local solution had made the resources available on all of the school's computers as well as at home:

*Síle ... iontach ... is cinnte go mbeimid ag úsáid an áis sin sa scoil... bhfuil a fhios agat ... mmmm ... ó thaobh a bheith ag stóráil rudaí agus ... tá sé just iontach ... [laughs] nach gcaithfidh tú suí ag an ríomhaire céanna le haghaidh an rud a fháil ... bhfuil a fhios agat ... rud fíor-bhunúsach ... ach bhfuil a fhios agat ... yeah ... is áis an-mhaith, an-mhaith ...*

When we discussed whether she felt that the level of the language was right for the children, she indicated that in general she felt that it was at the right level for some children and possibly one

step above for others. This was something she was very happy about as she felt that this was what the school should be aiming for. It also agrees with Krashen's theory of language acquisition (1982), that comprehensible input should be one level above a learner's current level of ability. We both discussed instances of the children's engagement with the resources sparking their interest in interpreting the meaning of new words and phrases. Síle had noticed how the act of synchronisation using Photostory was facilitating a process of repeated exposure to rich language:

*Síle ... bhí orthu ... I suppose, ón gcaoi go bhfuil an Photostory socraithe ... tá ort éisteacht leis cúpla uair agus is cinnte ... gur mó seans go mbeidh sé agat ansin tar éis an méid sin ...*

Síle went as far as to suggest that their engagement with language through Photostory was evidence that the intervention was promoting language enrichment:

*Síle ... is fianaise láidir é sin go bhfuil siad ag stopadh agus tú a cheistniú ar fhocal ... bhfuil a fhios agat ... go bhfuil an saibhriú seo ag tarlú ... nó ... go bhfuil ... go bhfuil suim acub ann ...*

She concluded by stating that she felt that an intervention such as this has great potential to support language enrichment and that she would be drawing on the rich resources that were mined for the project for this purpose in the future. She also recommended a similar approach to Gaeltacht schools wanting to support language enrichment:

*Síle ... eh ... agus **just an deis atá ann le haghaidh an saibhriú teanga** [emphasises] ... like ... níl aon dabht agamsa nach bhfuil ... deis iontach ... le haghaidh an saibhriú teanga sa stuif sin ata curtha ar fáil agat ...*  
*Síle ... so, eh ... [1] ... agus go bhfuil mé féin ... ag súil le ... bheith ag oibriú leis amach anseo ... so, ní bheadh aon dabht agamsa rud mar seo a mholadh in aon scoil Ghaeltachta eile ... bhfuil a fhios agat ...*

## 8.9. Reflections

Phase 3 of the intervention was overall a great success. The teacher was extremely pleased with the progress that the children had made and also with the acquisition of a bank of rich language resources, something that she had planned on assembling even before I had approached her (see previous section). She identified some minor refinements that could be implemented in future iterations of the design. These were mostly about tightening up the schedule of sessions and that greater care should be taken around group formation. Her conclusion that she had seen evidence of language enrichment during the intervention was extremely encouraging.

My own analysis of the children's interactions and their artefacts largely agreed with the teacher's opinions. All of the children had actively engaged with the process but the children who had chosen audio that they had a personal connection with were deeply invested in the process and their

repeated listening to their clip as they worked on perfecting the synchronisation with the images that they had chosen exemplified the synchronisation cycle of engagement. The children had greatly enjoyed participating in the intervention. They had expressed a preference for working with technology using audio and image over the written word for this type of project, recognising the rapid progress that they had achieved in a short space of time. Like in Cluain Locha, their only complaint related to the problems with technology that they had encountered which was the only real challenge that the implementation of the intervention in Barr na Leice had to deal with.

The school, like Cluain Locha had a poor broadband connection which was constantly dropping. Síle reported that every time the phone rang, the connection seemed to drop. Thankfully, having the local application for the cloud drive installed on all of the computers protected the intervention from the problems that were encountered in the early stages at Cluain Locha. There were still several incidents that caused difficulties. Computers need to be turned on for the synchronisation between the cloud and the locally installed application to occur. The computers in the computer room were generally turned off between sessions, so in the case of one or two sessions, new files that I had made available in the cloud only started to synchronise once I had arrived in the school and turned on the computers for that day's session. This meant that not all files were immediately available on all computers at the start of the session. The solution to this problem was simply to ask Múinteoir Síle to turn the computers on the day before or the morning of a session to ensure that all of the computers were updated with the latest files.

The addition of the sync sheet was a key improvement to the design as the children were now able to go through the synchronisation cycle conceptually with the sheet and then materially with Photostory, increasing their repeated exposure to the audio and facilitating two different synaesthetic experiences. Having copies of the children's sync sheets also helped in the implementation of structured agency as I was able to identify images to upload to their folders based on their interpretations of the audio rather than my own, increasing their agency and ensuring that they were leading the development of the artefacts.

The community celebration with which the intervention concluded was, like in Cluain Locha, a very affirming occasion that gave the children the opportunity to show their families and loved ones what they had achieved when engaging with the rich cultural resources in their local community. Múinteoir Síle concluded the celebration with a very positive and gratifying message:

*Síle: Ba mhaith liom buíochas a ghabháil le Niall ... ní hamháin go ndearna sé an obair seo le na gasúir ... ach bhfuil a fhios agat an stuif ar fad ... na píosaí ar fad atá ag dul siar na blianta faoin gceantar seo ... chuir sé iad ar na ríomhairí ... so, beidh fáil againne sa scoil ar feadh blianta amach anseo ... mar a deir sé ag an tús ... is ceantar láidir Ghaeltachta í seo agus*

*... bhfuil a fhios agat ... tá an saibhreas sin ... mmm ... agaibh sa mbaile ...  
ag Mamó is Daideó ... agus fiú muintir a tháinig roimhe sin ... agus beidh  
fáil againne sa scoil ar na píosaí ón raidió sin de bharr an méid a rinne  
Niall linn ...*

Múinteoir Síle speaking at community celebration in Scoil Bharr na Leice



## Chapter 9 – Review of the Design Across the Three Phases

### 9.1. Introduction

This chapter traces the design trajectory of the intervention across the three phases of its implementation. It first briefly reviews the context-based design requirements that articulated the constraints of the design. It then presents the current state of the design – at the end of Phase 3. As in chapter 5, a conjecture map is presented to illustrate the embodiment of the research aims in the refined design of the intervention and the type of refined evidence that was sought to investigate whether the refined desired outcomes were achieved. A narrative is then presented that follows the structure of the map summarising the key refinements, main findings and breakdowns for each element in the map.

The remaining sections describe the contribution of the research to both theory and practice – key outputs from design-based research (Barab and Squire 2004, Gravemeijer and Cobb 2006, Barab 2014). The theoretical contributions of the research, which have been implicitly implemented in the design are teased out in a discussion on how the desired outcomes were achieved via the theoretically salient features of the mediating processes that were the subject of analysis. The chapter concludes with my own brief reflections on the implementation of the intervention.

### 9.2. Review of the Design Requirements

The design requirements are the context-based constraints based on my experience of working with Gaeltacht teachers and on visits to Gaeltacht schools during the iTunesU project<sup>44</sup>. This section describes how they influenced the design over the course of the three phases of the research.

- **Transformative requirement:** The teachers in both schools were acutely aware of the precarious nature of the language. They both cited this as one of the reasons that they wanted to participate in the research in the first place. Much of our discussions during our post-session debriefing sessions and post-phase interviews revolved around how to increase the intervention's focus on language and cultural development
- **Skills requirement:** The intervention showed that simpler intuitive hardware and software suited the skills of both the teachers and the children of this age group. Using multimodal software in a manner that bypasses writing can lead to the rapid development of rich language resources. This also avoids the having to deal with vernacular/written standard tensions

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<sup>44</sup> See Section 5.3

- **Compatibility requirement:** Compatibility was an issue with some of the software that crossed the home-school divide. Cloud-based software worked well on the school side of this divide but further efforts are needed to support access at home due to the myriad of devices in the home
- **Cost requirement:** All software that was chosen was freely available which meant that there were no licensing issues or payments to be negotiated when I visited the schools to install the software. It also meant that the children would be able to install the software in the form of applications or apps on their devices at home without their parents having to pay for them.
- **Safety requirement:** The requirement of ensuring no image of a child appeared in any artefact was applied but in discussions with both teachers, they felt that this was unnecessary and that they could not see any problem (or parents having any problem) in images of the children (still or moving) appearing in their artefacts as long as they were not being made public. This requirement should be updated for future designs.
- **Language requirement:** The recommendations of the iTunesU committee were followed by using the iTunesU collection as the audio resources of the intervention. Their recommendations in relation the type of language remained valid, but what emerged over the course of the intervention is that authenticity is relative to the listener and resources should be sought where possible that the listener has a personal connection with. This factor was addressed in the design itself.

### 9.3. Revisiting the Conjecture map

The following section includes the revised conjecture map (Figure 61) showing how the design of the intervention has changed compared to the initial conjecture map (see Section 5.4). The changes are italicised (following Wozniak 2015). The subsequent narrative briefly traces the refinements to the embodiment, mediating processes and desired outcomes across the three phases of the intervention in both schools. These refinements are discussed in more detail within the narratives relating to each phase (Chapters 6-8).

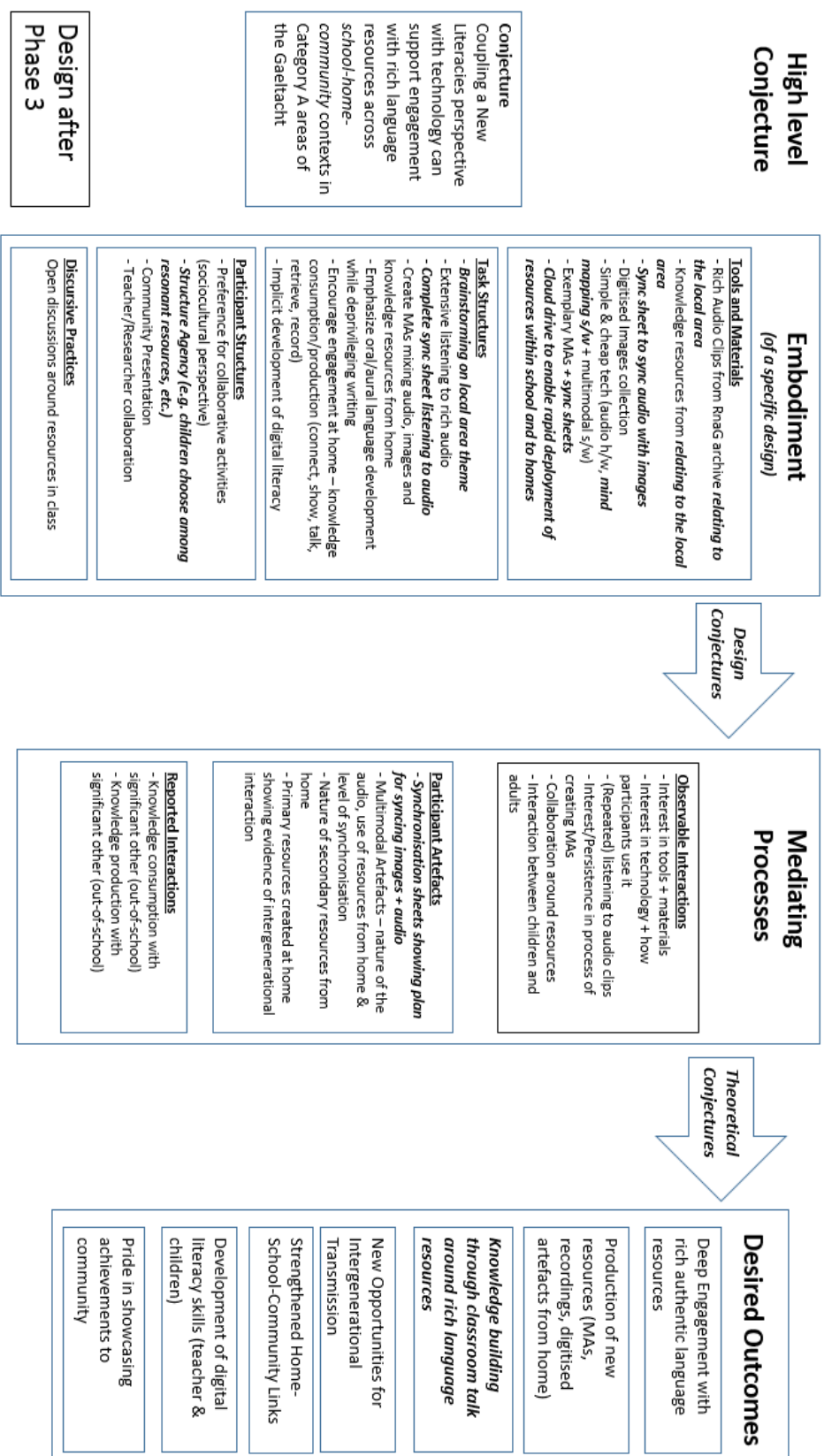


Figure 61 - Refined Conjecture Map after completion of Phase 3

### 9.3.1. High-level Conjecture

The high-level conjecture is an abridged form of the research aims and states that “coupling a New Literacies perspective with technology can support engagement with rich language resources across school-home-community contexts in Category A areas of the Gaeltacht”.

### 9.3.2. Embodiment of the Design

This section describes how the embodiment of the design (tools and materials, task structures, participant structures and discursive practices) evolved over the course of the three phases of the intervention.

#### 9.3.2.1. Tools and Materials

##### *Refinements*

The main refinements to the tools and materials relate to the introduction of the local area theme (Phase 1b), a sync sheet to scaffold plans for synchronisation prior to starting work on the multimodal artefact and an exemplary sync sheet to accompany the exemplary artefact (Phase 3), an online mind-mapping tool to support brainstorming (Phase 3), and the replacement of the wiki by a cloud drive with local synchronisation to the school’s computers (Phase 2).

##### *Main Findings*

The hardware that was used – the MP3 recorders, audio splitters, headphones and microphones were all well received and intuitive to use. The audio splitters received a special mention in feedback from both teachers and from the children in how they transformed the nature of collaborative listening<sup>45</sup> and also the collaborative creation of the multimodal resources.

The simplicity of Photostory and its capability to allow images to be synchronised while repeatedly listening to the audio made it an ideal tool for deep engagement and the production of multimodal artefacts. The fact that Bríd, in Cluain Locha, had gone on to use Photostory in other contexts<sup>46</sup> was a testament to its utility to the school.

The Raidió na Gaeltachta archives proved to be a vital source of rich language resources but not as originally envisaged. The lack of engagement in the iTunesU collection instigated the introduction of the local area theme. When the children were reluctant to make recordings at home, the archive breached the gap by providing rich recordings that often had personal meaning for many of the children. These were almost like surrogate clips that functioned in many ways as I envisaged recordings made at

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<sup>45</sup> See Section 7.2.3

<sup>46</sup> See Section 7.2.6

home would have done. In many cases, the greater the personal connection between the child and the recording, the greater the interest and investment made in creating a multimodal artefact based on the clip. Four children in Phase 3 did volunteer to make home recordings with two actually following through. The one of most significance was Siobhán's interview with her grandmother<sup>47</sup> which she and her cousins then used to build an artefact around.

The yearbooks, which were the principal artefacts that the children brought in from home also proved to be a vital source of local images to support the creation of the artefacts. When the children were short on images, the teacher and I would make a selection of images available in their project folders for them to choose from.

The replacement of the wiki by the cloud/local solution for the home-school link saw the frequency of technical problems decrease and the overall progress of the intervention rapidly increase<sup>48</sup>.

The use of an online mind-mapping tool was very useful in scaffolding the children's brainstorming<sup>49</sup> in relation to the local area theme as was the use of online geographical maps and a street view of the area in triggering their prior knowledge to identify topics of interest that were then used as an index to search the radio archive database with.

The sync sheet<sup>50</sup> became a key tool in scaffolding the children's activities in creating multimodal artefacts. The sheet also supports the theoretical concept of the synchronisation cycle which stimulates repeated listening to a chosen audio clip.

An exemplary artefact was prepared in each school to scaffold the children's understanding of Photostory's capabilities<sup>51</sup>. Phase 3 introduced an accompanying exemplary sync sheet<sup>52</sup>. This incorporated images from the local yearbooks, online archives and cartoon images. Both teachers saw this as an important step in clarifying the ultimate goal of the children's activities.

### *Breakdowns*

- Lack of engagement with the iTunesU clips<sup>53</sup>
- Reluctance from the children to make recordings at home (phase 1b)<sup>54</sup>

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<sup>47</sup> See Section 8.6.3

<sup>48</sup> See Section 7.2.1

<sup>49</sup> See Section 7.2.2

<sup>50</sup> See Section 8.4.1

<sup>51</sup> See Section 7.2.4

<sup>52</sup> See Section 8.4.2

<sup>53</sup> See Section 6.3.1

<sup>54</sup> See Section 6.4.2

- Failure of the wiki due to its written nature and technical problems (phase 1b)<sup>55</sup>
- Technical problems, particularly related to poor Internet connection in both schools and some of the computer hardware being out of date<sup>56</sup>

### 9.3.2.2. *Task Structures*

#### *Refinements*

The main refinements to the task structures relate to the introduction of the local area theme (Phase 1b), refocusing the design towards language development (Phase 2), brainstorming relating to the local area theme (Phase 2), the removal of the wiki (Phase 2), and the completion of a sync sheet to scaffold plans for synchronisation prior to starting work on the multimodal artefact (Phase 3).

#### *Main Findings*

The theme of the local area was introduced to create opportunities for interaction between the children and older generations. It was felt that the theme would increase the chances of the children being exposed to rich language through these interactions. The intervention got bogged down, however, in a mire of technical problems towards the end of the exploratory phase (1b) and the real focus on language development was only brought about by Múinteoir Bríd's key observation at the end of the exploratory Phase 1b – that the intervention's initially central focus on language had been moved to one side due to the introduction of too many technologies that were taking up too much of the intervention's time. The consequent re-assessment of the design resulted in a much simpler and efficient learning trajectory for the children.

The local area theme became the central focus of activity in Phase 2 starting with the brainstorming activity of the first session which draws on the work of Moll and Whitmore (1993). This activity was key in giving them agency at the start of the new learning programme and provided me with the terms of reference with which to search the radio database with.

The sync sheet activity<sup>57</sup> required the children to carefully listen to their clip and to note the time codes when they identified a change in the narrative. They then had to note the type of image that they imagined would suit that segment of the narrative and whether they might need to add any effect to that segment in the software. This was a key activity in increasing their engagement in listening and relistening to their rich audio clip.

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<sup>55</sup> See Section 6.4.7

<sup>56</sup> See Section 6.4.9

<sup>57</sup> See section 8.4.1

The activity of creating the multimodal artefacts changed over the course of the phases. The artefacts from Phase 1a<sup>58</sup> resulted in deep engagement with the themes that the children chose (wrestling, soccer and Nelson Mandela) and in many ways these resembled the construct of identity texts (following Cummins and Early 2011). These were not sufficient, however, to develop or enrich the children's language. The construct of identity texts needed to be extended so that rich language could be incorporated in the children's creations. This was finally facilitated through the use of clips from the archives chosen by the children themselves in Phase 2<sup>59</sup>. There was evidence of sustained and deep engagement with the resources – instantiations of the synchronisation cycle – in these activities.

The principal factor that influenced the depth of the children's engagement in the process was the existence of a personal connection between the child or the group with the audio clip. Other factors that contributed to increased engagement included the themes of the resources (e.g. humour or drama increased engagement) and the dynamics within a group (e.g. enthusiastic, focused, etc. v. passive, unfocused).

The children were encouraged during all phases of the intervention to engage in knowledge consumption or production at home. The children reported that they were interacting with family members around the yearbooks, the radio clips and it was clear from the knowledge that they were bringing into both classrooms that they were highly engaged at home in finding out more about their local history and culture.

The intervention developed the children's digital literacy skills in both schools. Under the refined programme, children in both schools learned how to create multimodal artefacts based on archival audio clips in Photostory, how to search for images online and understand the importance of image resolution, how to take screenshots using Snipping Tool, basic file and folder management techniques and how to manipulate resources in the cloud.

### *Breakdowns*

- Lack of contextual knowledge affected the completion of tasks that required the unearthing and manipulation of knowledge extracts from various sources of data (primarily from the radio programmes and yearbooks to re-assemble on the wiki)<sup>60</sup>
- Technical problems affected the children's progress in all three phases<sup>61</sup>

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<sup>58</sup> See section 6.3.1

<sup>59</sup> See section 6.4.6

<sup>60</sup> See Section 6.4.8

<sup>61</sup> See Section 6.4.9

### 9.3.2.3. Participant Structures

#### *Refinements*

Implementing a more structured form of agency instead of trying to maximise it

#### *Main Findings*

The existence of a culture of learning through social interaction was of huge benefit to the research in both schools. The children were used to having permission to talk to one another, to volunteer suggestions and to visit one another's desks to view each other's progress. In several instances, older children assisted younger children with the activities which was of great assistance to the teacher. Without these practices being part of the existing culture of the school, these exchanges may not have been permitted to the great loss of the intervention. This intervention would therefore transfer best to schools with a similar perspective on learning.

Overall the children worked well in groups but in several cases the group dynamics affected their progress. I had allowed groups to be formed around themes without regard to their likely dynamics, not knowing the children. This is unlikely to be repeated in future iterations with the teacher fully in charge of such situations.

Structured agency<sup>62</sup> manifested itself most in the adult-facilitated brainstorming activity, in the researcher choosing a selection of audio clips and candidate images for the children to choose from. It was still very important to emphasise that the children were still making choices and that the themes that they were working on were based on their suggestions during the brainstorming.

As was planned from the outset, both interventions culminated in a presentation of the children's work to the local community<sup>63</sup> which resulted in positive affirmation of the children's engagements in rich language and in local culture. The post-session debriefings and post-phase interviews were extremely productive and their pedagogical and curricular insights were extremely important to the improvements that were made to the design over the course of the intervention.

#### *Breakdowns*

- Group dynamics (too passive in one case and a dominant personality in the other) hampered the progress of two groups in Barr na Leice

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<sup>62</sup> See Section 6.4.8

<sup>63</sup> See Sections 7.2.7 and 8.6.4



#### 9.3.2.4. *Discursive Practices*

##### *Refinements*

Removal of the reference to online discussions.

##### *Main Findings*

Talk turned out to be a key conduit for knowledge transfer. It was through the conversations that were sparked off by personal connections being identified in the rich language resources that prior knowledge was drawn upon, traded and built upon<sup>64</sup>. An important factor in the success of these discussions in both schools was the teacher's familiarity with the resources and their ability to weave the conversation around the children's prior knowledge, their natural curiosity and the richness of the language within the resources themselves. There were also instances where the teachers saw opportunities to connect the resources with the wider curriculum, such as when Bríd started a discussion on history around the audio clip of the War of Independence.

##### *Breakdowns*

None

#### 9.3.3. **Mediating Processes**

This section describes the mediating processes (observable interactions, participant artefacts and reported interactions) that were evident across the three phases of the intervention. The original desired outcomes were not all evidenced during Phase 1a and Phase 1b, but the refinements to the design of Phases 2 and 3 did result in the desired outcomes being achieved.

##### 9.3.3.1. *Observable Interactions*

##### *Refinements*

None

##### *Main Findings*

The vast majority of the children in both schools were highly engaged throughout the sessions with almost all of the activities. They seemed to be particularly motivated by the technology, and the audio hardware (the headphones, MP3 recorders and the audio splitters), in particular.

Their engagement was powered by their prior knowledge and great interest in the local community. This resulted in regular discussions relating to clips from radio archive and the yearbooks

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<sup>64</sup> See section 6.4.5

that the children had brought in to be digitised. These discussions were expertly facilitated by both teachers thanks to the value that they placed on encouraging affirming social interaction in the classroom. This talk coupled with the audio clips themselves were scaffolding the whole class in knowledge building around rich language resources. This process also helped the children in identifying the clips that they would like to work with.

During the process of creating the multimodal artefacts, the biggest factor in ensuring a sustained, deep engagement with the audio was the presence of a personal connection with the audio. This deep engagement was manifest in the repeated listening that was observed as the children completed their sync sheets. It was also observed in other sessions as they worked with Photostory importing images, importing the audio and once again repeatedly listening to the audio as they perfected the synchronisation between the two modes.

There was evidence in all three phases of the intervention of the vernacular/Official Standard tension in relation to the written word in Gaeltacht schools.<sup>65</sup> This manifested itself in occasional written work that the children presented to me but was particularly pronounced while working on the wiki<sup>66</sup>. Progress was noticeably ponderous during the wiki sessions and it was only through the use of technologies such as Photostory, that were able to bypass the written word, that the speed of development increased rapidly.

#### *Breakdowns*

- Slow progress in activities that were connected to the written word<sup>67</sup>

#### *9.3.3.2. Participant Artefacts*

##### *Refinements*

The removal of analysis of the wiki from after Phase 1b and the addition of the analysis of the children's sync sheets in Phase 3.

##### *Main Findings*

In relation to the sync sheets, many of the children in Phase 3 used them correctly (i.e. adding appropriate time codes, listing intended images and noting software effects that they wished to add to their artefacts). The children who had chosen audio clips that they had a personal connection with were more likely to spend more time listening and relistening to their clip as they filled out their sync sheet and the timings marked on the sync sheet tended to match with changes in the audio narrative which

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<sup>65</sup> See section 2.5.4

<sup>66</sup> See section 6.4.7

<sup>67</sup> See section 2.5.4

were often followed through on in the completed artefacts. This illustrated the utility of the sync sheets in scaffolding the children's synchronisation and in encouraging them to repeatedly listen to the audio. Having a copy of each sync sheet also proved useful to me in identifying candidate images that I could upload to their project folders.

In relation to the artefacts, deep engagement was evidenced in them in the level of synchronisation between the audio and the images – images appearing in direct response to changes in the narrative and pictures that matched the topic of the narrative. This was related to the amount of time that the children spent working on their artefacts and it was the children who had personal connections with the audio who spent the most time working on them.

Their multimodal artefacts were sedimented with the identities of the subject of the audio and with their own identities through their activity in re-representing the audio in multimodal form (following Kress 2003, Rowsell and Pahl, 2010 and Kalantzis *et al.* 2010). A future refinement to the design would therefore try to ensure that children suggest themes during the brainstorming stage that might uncover radio programmes with content that they have a personal connection with. Basing multimodal artefacts on extracts from such programmes would likely be a form of identity investment, similar to the identity investment made in identity texts (following Cummins and Early 2011), but with the addition of ensuring that the child is deeply engaging with rich language resources.

The children's age was another factor that affected their choice of image and the level of synchronisation within the artefact. Younger children (third and fourth class) who received regular scaffolding from the teacher or the researcher during the creation of their artefacts evidenced greater levels of accuracy in synchronisation and in more cogent narratives in terms of choice of image.

As well as the multimodal artefacts that were created by the children, each school's participation in the intervention resulted them obtaining a large collection of rich language resources relating to the local area (Section 7.2.7). Through the robust cloud-based infrastructure these were available locally on all of the school's computers and in the children's homes through the cloud.

Two of the high-points of the intervention occurred in Phase 3 in Barr na Leice. Firstly, there was Tadhg's artefact based on a recording of his grandfather singing a song that Tadhg appeared to acquire over the course of his engagement with it<sup>68</sup>. Secondly, there was Siobhán's interview with her grandmother about her life growing up on An t-Oileán Mór and the special artefact that she and her cousins created from it.<sup>69</sup> Both of these examples illustrate the potential of the intervention for

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<sup>68</sup> See section 8.6.2

<sup>69</sup> See section 8.6.3

language development and acquisition when audio clips can be identified that resonate greatly with children.

#### *Breakdowns*

- The sync sheets and artefacts of some children who were less engaged in the multimodal activity were less synchronised as a result (only a minor breakdown)

#### *9.3.3.3. The Reported Interactions*

There were no refinements made to the reported interactions that were being analysed over the course of the intervention. Most of the reported interactions from the children were positive with many reports of the children interacting with family members – for example, viewing yearbooks together or listening to radio programmes together.

### **9.4. Theoretical conjectures substantiated through reaching the desired outcomes**

The desired outcomes are a measure of the success of a designed intervention and how the mediating processes produced these outcomes are the theoretical conjectures of the research (Sandoval 2014, pp.22-24). The following narrative therefore, outlines the theoretical contribution of the research.

Only one refinement was made to the desired outcomes. This reflects the change from trying to get the children to collaboratively build knowledge in an online writing-based platform (the wiki) to explicitly supporting the collaborative knowledge that was already happening naturally in the classroom through their discussions around the rich language resources.

Preliminary Phase 1a of the intervention implemented a prototype of the design to enable me to familiarise myself with the children, the teacher and the environment. It helped to identify tools and materials (the iTunesU collection) as well as certain task structures (recording at home) that were unlikely to be productive in achieving the desired outcomes.

Exploratory Phase 1b of the intervention showed evidence of the potential of certain tools and activities to achieve the desired outcomes while others showed less potential and were abandoned. Photostory was used in a conventional manner with the children recording themselves reading from pre-prepared materials from the Logainm Áitiúil project. Some of them were observed struggling at times to read the script and the completed artefacts showed evidence of a stilted nature to the narrative. This process did lead to repeated dictation by some of the children as they made mistakes and were prompted to re-read the script. This was a form of engagement with a rich language resource

but was caused by the presence of error in the children's own reading ability which may have led to some language development but was not of the same level had the children been engaging with rich authentic audio resources.

Deep Engagement with rich authentic language resources was achieved by most of the children in both schools during Phase 2 in Cluain Locha and Phase 3 in Barr na Leice when the refined programmes based on creating multimodal artefacts using audio clips from the archives was implemented. In Phase 2, the children were observed repeatedly listening to their clips as they synaesthetically synchronised their audio clip and with their choice of images in Photostory. This was also evidenced in their final artefacts by the level of accuracy in their choice of image and its synchronisation to the narrative transitions in the audio. Several children in Phase 3 also made home recordings. This was set as an early target in resource production in the initial design but efforts to achieve this were set aside in Cluain Locha due to a reluctance by the children to record family members at home. Its considerable success in Barr na Leice justified it having been set as a target and efforts should be continued to be made in future interactions of the design.

An extra cycle was added to the theoretical construct of the synchronisation cycle in Phase 3, through the use of the synchronisation sheet. This required the children to note the times of transitions in the audio narrative on their sheet and then to imagine the type of image that matched each segment of narrative – a conceptual form of synaesthesia to precede its material instantiation in Photostory – resulting in a dual synchronisation cycle (Figure 67).

A tool that was employed to achieve the desired outcome of collaborative knowledge building was the wiki. The wiki did not work on many levels but the fundamental error in the initial design was to choose a tool which has writing as its primary mode for compiling content, when the literature informing the design highlighted the tension that the written word creates in the language development of native speakers in the Gaeltacht. The children were also too young to have the contextual knowledge to manipulate and combine various forms of knowledge from different sources into coherent ensembles and their keyboard skills were not sufficiently developed. This desired outcome was never fully reached despite much time and effort being spent trying to encourage engagement with it both at school and at home.

The wiki did facilitate the achievement of two other desired outcomes, however – it did prove that technology can indeed create new opportunities for intergenerational transmission and also strengthen home-school-community links. The children were viewing the yearbooks and listening to radio programmes with members of their family. When I was encountering problems with getting the

children's artefacts to play on the wiki in Cluain Locha, the children were regularly asking me when they would be ready as they wanted to show their creations to family members at home.

These goals were better served by the introduction of the robust infrastructure of the cloud drive. The retirement of the wiki also led to the refinement of the knowledge building goal to "knowledge building through classroom talk around rich language resources". This acknowledged the importance of the rich discussions that were occurring in every session in drawing on the children's prior knowledge about the local area and their hunger to find out more about this engaging theme.

The intervention developed the children's digital literacy skills in both schools. The children in Cluain Locha learned more sophisticated skills such as wiki and sound editing and meta-data tagging, than the children in Barr na Leice. This was due to their participation in the exploratory phase as well as the refined programme phase.

Under the refined programme, children in both schools learned how to create multimodal artefacts based on archival audio clips in Photostory, how to search for images online and understand the importance of image resolution, how to take screenshots using Snipping Tool, basic file and folder management techniques and how to manipulate resources in the cloud.

One of the lessons learned from the exploratory phase was that the children were too young to have the contextual knowledge to be able to isolate their own knowledge extracts from longer sequences e.g. extract coherent audio clips from full radio programmes, or extract useful nuggets of information from a yearbook and re-assemble them as a wiki page. This was far too ambitious an expectation but perhaps a project that might suit a Gaeltacht secondary school.

Finally, the children in both schools showed great pride in presenting their artefacts to both of their communities. Both occasions were very special and gave the children an opportunity to receive positive feedback and an affirmation of their efforts in producing artefacts that were steeped in the local culture, displaying images of the local areas that were mixed with the voices local people speaking in the children's vernacular.

## **9.5. Researcher Reflections**

My own reflections on the process are that overall it was a very successful and personally fulfilling experience. The two schools where I conducted the research were incredibly welcoming and facilitated the process in every way possible. The teachers willingly gave up huge amounts of their own time after school to collaborate on the design and were extremely insightful in their recommendations of possible refinements. The intervention was massively improved thanks to their input. The children in both schools were wonderful and very enthusiastic and helpful throughout the intervention. Their

motivation and curiosity in relation to their local community helped to drive the spirit of endeavour throughout the phases in both schools. The other teachers who worked with me during the earlier iTunesU project were also incredibly generous with their time and counsel.

There were also plenty of times when I felt that what I was trying to achieve was far too ambitious and that some of my expectations were too great in relation to what children from third to sixth class could achieve. My inexperience in teaching young children meant that I was swamped at times with requests and amazed by the amount of energy that the children had and realised that if I didn't have something ready for a child to do, that they would find something else to do very quickly.

I made mistakes in offering the children too much agency in the early sessions. This left them, at times, with no clear vision of what they were trying to achieve. Sometimes I lost sight of the goals of the intervention, particularly during Phase 1b when it became mired in technical issues that I had to solve while still trying to concentrate on implementing the design. I also did not pay enough attention to an important task structure in the original design which was to “emphasize oral/aural language development while deprivileging writing”. The early design explorations in Phase 1b of the intervention did not stick rigidly to this recommendation to the detriment of the process. The use of the wiki was particularly problematic in this regard but there was evidence in all phases of the intervention of the vernacular/Official Standard tension in relation to the written word in Gaeltacht schools.

The key moment in the whole intervention from my perspective and possibly what ultimately saved it from failure was Múinteoir Bríd's observation at the end of Phase 1b that the intervention had become very tech-focused and not as focused on language as she thought it would be. This was the wake-up call that I needed at that moment. I had been introducing a number of more sophisticated technologies that I was used to using but the children's capacity to absorb further information had probably reached its limit.

The intervention needed a transformative solution to challenge the dominance of the written word and the design needed to return to the notion of 'deprivileging writing'. It had become clear to me that by focusing on the development of multimodal texts that mixed rich oral language resources with visual images, the written word could be bypassed, creating a more equal playing field for all children to develop artefacts.

Thankfully, Bríd's verbal intervention may have saved the pedagogic intervention and we both set about redesigning a learning programme of six sessions for Phase 2 that resulted in the desired outcomes being achieved. It was this programme that was then transferred successfully to another school – Barr na Leice in Phase 3 – an important measure of the worth of a DBR intervention.

As the children reassembled images, voices and texts rooted their local culture and community, I came to realise that my own role in writing this research was quite similar in weaving their personal narratives into a coherent story that rings with the promise that voices from their past can help to create opportunities to maintain our culture and our language safe for generations to come.

## **9.6. Summary**

This chapter discussed the design trajectory of the three phases of the intervention. The context-based design requirements were reviewed and were largely seen to have been fit for purpose. This was followed by a review of the implementation of the design, illustrated by a refined conjecture map and accompanying narrative that reviewed the refinements of the design over the course of the three phases. The theoretical contribution of the research was then described in terms of how the theoretical conjectures achieved the desired outcomes. The chapter concludes with some brief reflections by the researcher on his participation in the intervention.



## Chapter 10 – Overall Contributions and Recommendations

### 10.1. Introduction

It has been shown that the Gaeltacht is currently in a state of accelerated language shift. In Category A areas<sup>70</sup> although the majority of young people use Irish in their home networks, the vast majority of them do not speak Irish with their peers (Ó Giollagáin *et al* 2007). Young people are finding it harder to access local target varieties (Ó hIfearnáin and Ó Murchadha 2011, p.103). This is resulting in the disappearance of local dialects (Ó Curnáin 2007). In parts of the Gaeltacht, this decline is so rapid that young people are starting to struggle to understand their own grandparents (Ní Chonchúir 2012).

The aim of this research was to investigate how pedagogical interventions that draw on a new literacies perspective, and which are supported by technology, can be designed to support young learners' engagement with rich language resources in Category A areas of the Gaeltacht.

The research has demonstrated, in two separate schools, how children in Gaeltacht classrooms can be encouraged to engage deeply with rich language resources from the RTÉ Raidió na Gaeltachta archive through a designed pedagogic intervention that views learning as a social practice and that is supported by multimodal technologies. The audio resources that were identified were based on suggestions made by the children relating to the theme of 'mo cheantar féin' (my local area). The children also brought resources in from home that were digitised and used in the process of creating multimodal artefacts based on their choice of audio clips. Several children also made audio recordings at home. The children who engaged with the activities at the deepest level were ones that chose resources that had a personal resonance for them.

This final chapter examines the contributions that the research has made to both theory and practice, the twin goals of design-based research (DBR), which was the pragmatic research approach followed (Barab and Squire 2004, McKenney and Reeves 2013, etc.). Figure 62 presents a version of McKenney and Reeves's generic model for DBR (the original of which was discussed in chapter 4) that has been adapted by Thompson Long and Hall (2015) to specify a more detailed breakdown of the outputs of a DBR project.

There were three cycles to this intervention. The preliminary/exploratory phase (Phase 1) in Cluain Locha informed the refined design of the learning programme (Phase 2). This was then implemented in a second context in Barr na Leice (Phase 3) to ensure that the intervention was

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<sup>70</sup> defined as areas where over two thirds of the community still speak Irish on a daily basis (See Section 2.4)

transferable to other schools in Category A areas of the Gaeltacht (following McKenney and Reeves emphasis on the implementation and spread of a designed intervention – see upper part of Figure 62).

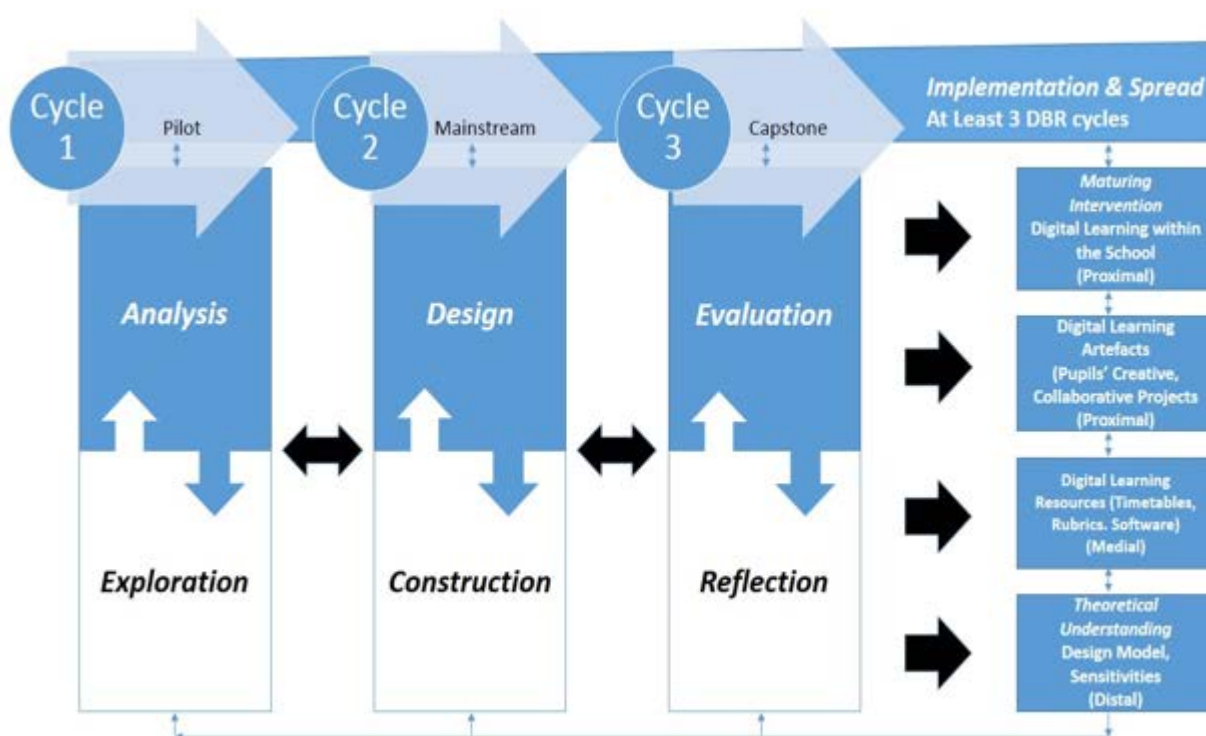


Figure 62 - Generic Model for Design Research, adapted by Thompson Long and Hall (McKenney and Reeves 2013, p.76)<sup>71</sup>

Long and Hall (2015) specify three types of output. The distal outputs refer to the theoretical contributions of the research. This research makes three such contributions which are described in Section 10.2. The medial outputs refer to resources that are readily transferable for use by practitioners in other contexts. These include resources that were used during the research as well as resources prepared retrospectively specifically for practitioners. Three transferable contributions have been prepared based on the research that draw on the key components of the design including the hardware, software and pedagogic materials and activities. These contributions are described in Section 10.3. The proximal refers to the practical outputs of the intervention which include both the maturing intervention and the learning artefacts that have been produced by the intervention. The two schools that participated in this research benefitted from the learning experiences of the children across the home-school divide as well as the professional development of the teachers in the use of the various tools, materials and practices. They also benefitted from the robust technical infrastructure that enabled the artefacts or resources that were produced as part of the intervention to be shared between the school and the home. Chapters 6-9 of this thesis discuss these outputs in detail. Finally, the chapter

<sup>71</sup> Permission to reproduce this image has been granted by the authors

makes some recommendations in relation to how the intervention could be implemented on a wider basis.

## **10.2. Theoretical (distal) contributions**

The following section presents three theoretical contributions of the research. Firstly, the concept of ‘resonance’ is introduced. This attempts to underline the importance of identifying rich language resources that evoke affective connections for the learners in the context of the enrichment of an endangered language. Secondly, the concept of synaesthetic synchronisation is discussed and how it can encourage deep engagement and repeated listening with rich language resources, particularly if they have resonance for a learner or group of learners. Thirdly, I explain how the concept of identity texts (Cummins and Early 2011) has been extended to incorporate the needs of native speakers of an endangered language.

### **10.2.1. Resonance**

There are countless examples in the interactions in both classrooms that show how certain resources spark a much greater engagement from one or more pupils than others. These responses are often caused by the identification of personal connections between the resources themselves or between the resources and children in the class. This, as I have argued earlier<sup>72</sup>, has similarities to the notion of authenticity being relative to the learner (following Rost 2013), but in my analysis across the three phases of the research, I would find it difficult to categorise some of the passionate responses and engagements that I have witnessed in terms of authenticity and its complexities as a concept. I therefore suggest that “resonance” is a more useful categorisation of the concept relating to the affective responses that certain resources elicit among certain learners. Resonance is defined as

The quality in a sound of being deep, full, and reverberating; The power to evoke enduring images, memories, and emotions.

(Oxford English Dictionary [online] 2016)

A feeling, thought, memory, etc. that a piece of writing or music makes you have, or the quality in a piece of writing, etc. that makes this happen.

(Cambridge English Dictionary [online] 2016)

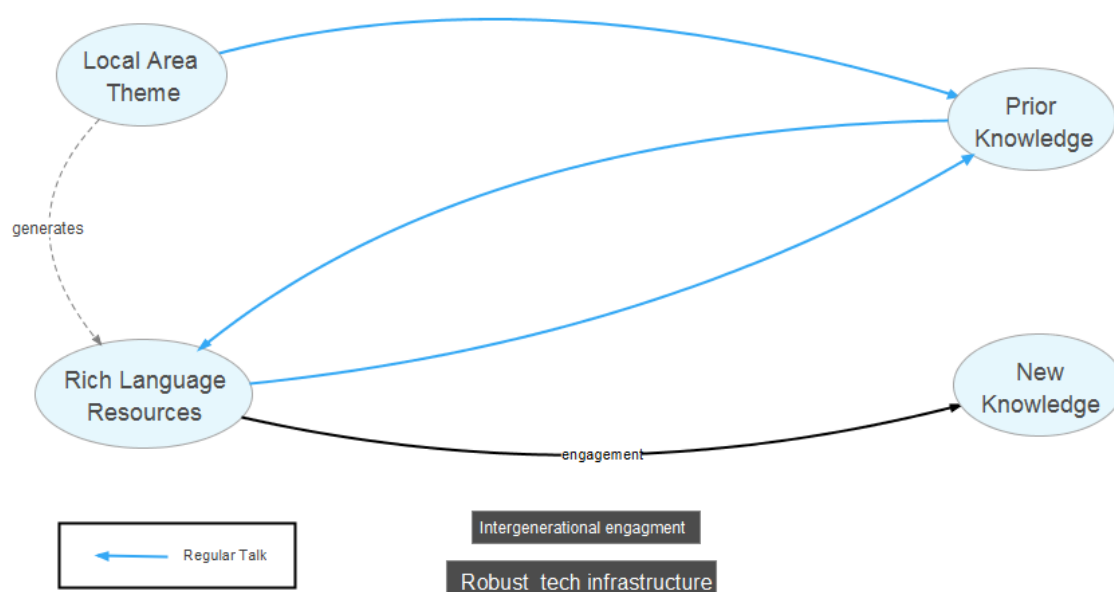
In the context of this research, I’m defining resonance as a reflexive affective relationship between a learner and a learning resource. A rich language resource that can evoke a strong or passionate emotional response from a learner can resonate much longer than a resource that evokes

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<sup>72</sup> See section 3.4

little or no emotional response. A resonant resource has the potential to engage a learner or group of learners in deeply engaging activities. Should that resource elicit a similar response from members of older generations, the potential exists for deeply meaningful intergenerational transmission in interactions relating to that resource. Warschauer (1999) noticed such a response from native Hawaiian learners who “had a deep interest in their topics for personal, cultural, familial, or spiritual reasons” and were working to publish their work on the Web – “this feeling of pride motivated them to pay close attention to both the text and the overall design and layout of their pages, fostering an intensive and rewarding learning experience” (Warschauer 1999, p.161).

Figure 64 and Figure 63 are both high-level illustrations of the types of activity around rich language resources that were implemented in this intervention. They both show how rich language resources that have been generated from the local area theme can trigger prior knowledge and result in engagement in the process of creating new knowledge in the form of multimodal artefacts. Both rely on a robust technological infrastructure that links the school with the home and both encourage intergenerational engagement at home around the local area theme and the rich language resources.

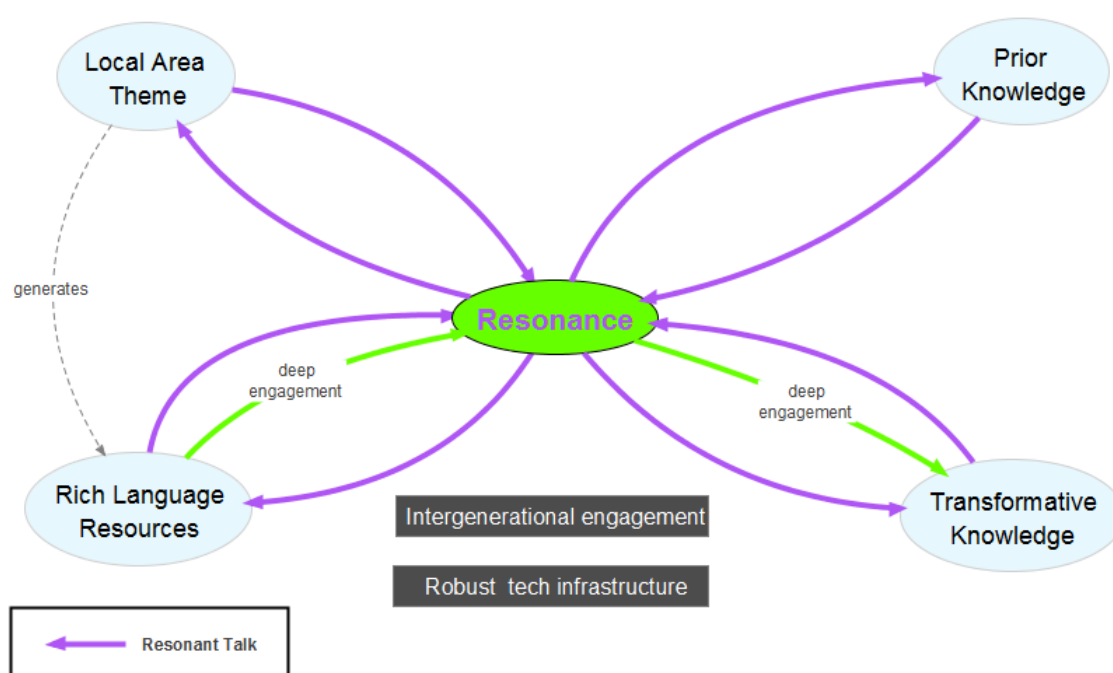


**Figure 63 – An activity that promotes engagement with rich language resources based on the theme of the local area. The production of new knowledge in the form of a multimodal artefact is the likely outcome of such an activity**

The differences between the two diagrams are illustrative of the types of engagement that were evidenced in both schools in Phases 2 and 3 of the intervention. Figure 63 illustrates how a learner or group of learners would typically engage with a rich language resource which has no particular resonance for them. The blue arrows are suggestive of the regular type of talk that would be elicited from the children during the activity resulting in engagement in the creation of new knowledge and

artefacts based on those resources. These types of activities will expose learners to comprehensible input in a collaborative environment and likely aid language acquisition. The smaller rectangle used for “intergenerational engagement” in this figure suggests that the level of engagement around the resource at home would be less than if it had resonance for the learner.

Figure 64 adds the presence of resonance as a property of the activity. This illustrates how resonance has the potential to improve the quality of the learning experience for the learner and increase the likelihood of intergenerational engagement at home. The double arrows illustrate that the affective connections that are identified through ‘resonant talk’ can generate further ‘resonant talk’ in a positive affective cycle. The thicker arrows illustrate the increased importance of the ‘resonant talk’ to the learner(s) due to the presence of an affective connection with the resource or resources. Activities based on resonant resources are likely to lead to deeper engagement and to transformative knowledge, particularly if these activities produce new artefacts that are likely to be sedimented with deep affective meaning for the learner(s) (drawing on Pahl and Rowsell (2010, 2011)).



**Figure 64 - An activity that promotes engagement with *resonant* rich language resources based on the theme of the local area. Resonance (a personal/emotional connection with a resource) results in a likely deep engagement with that resource producing transformative knowledge and a resonant multimodal artefact for the learner/group.**

The field of the New Literacies Studies suggests that marginalised children can be supported by building bridges between out-of-school literacies and school literacies. Out-of-school literacies in this context often refer to popular culture. Themes around popular culture, however, may be less likely to lead to language development in Irish. If anything, they may encourage more use of English in the classroom. In their work on artifactual literacies, Pahl and Rowsell suggest that marginalised children in

an English support class “need reasons why English is relevant to them and to their lives” and that they can be encouraged by drawing on “their strong ties to family and to their community as a source of inspiration” (Pahl and Rowsell 2010, p.77). This thesis is making a similar argument with Irish and has tried to give native speaking children reasons to develop their language by identifying language-rich resources that resonated with them.

### 10.2.2. Synaesthetic Synchronisation

Chapter 3 identified synaesthesia, as a creative learning process that is constantly : “shifting between modes and re-representing the same thing from one mode to another” (Kalantzis *et al.* 2010, p.67). The original design of the intervention as set out in chapter 5 identified a **synchronisation cycle** as a key theoretical construct in the intervention (Figure 65). This identifies the synchronisation of audio and images within multimodal software as an opportunity for the learner to engage in a synaesthetic activity that also promotes repeated listening to the audio text.

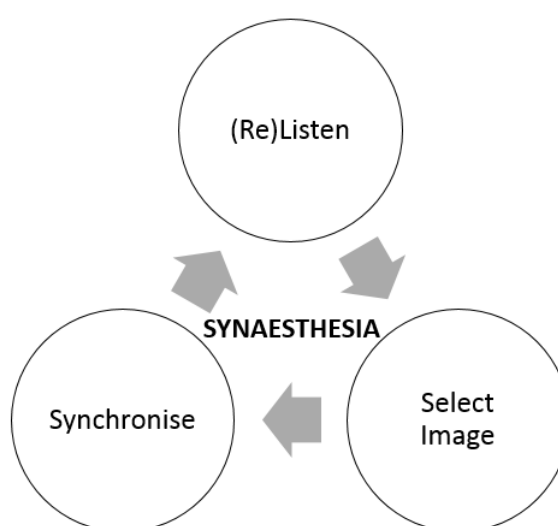
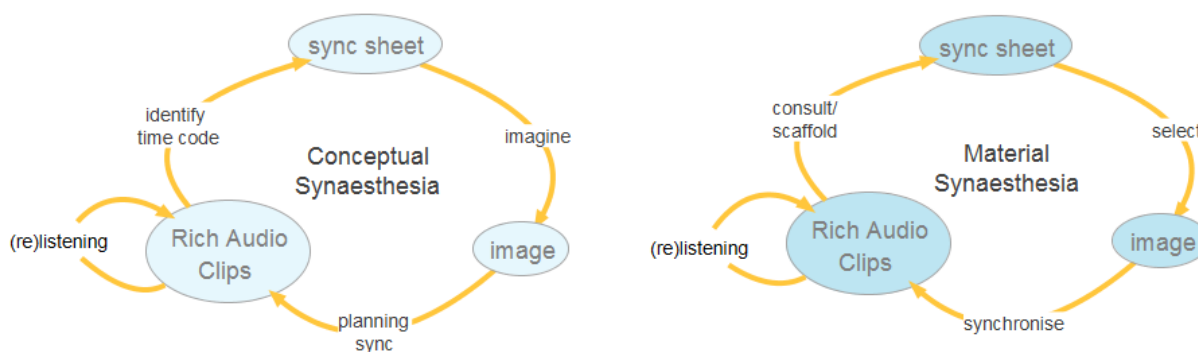


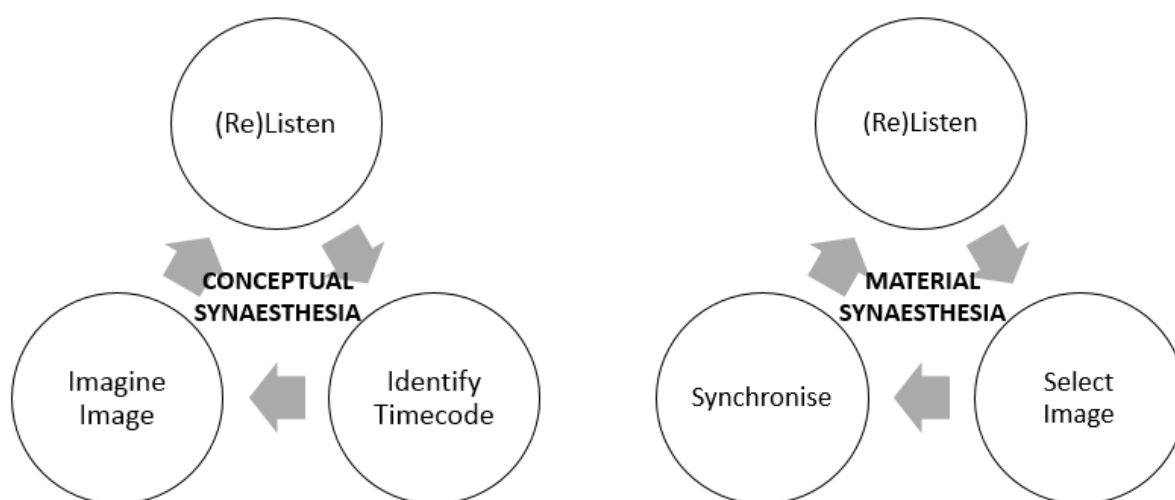
Figure 65 - The synchronisation cycle (original version in chapter 5)

The introduction of a synchronisation sheet in Phase 3 of the intervention, added a second synchronisation cycle of synaesthetic activity. The sync sheet activity invokes more of a conceptual form of synaesthesia where the learners commit to paper what they imagine their artefacts will look and sound like. They then proceed to engage in a material form of synaesthesia as they use technology to search for material images and perform the synchronisation activity using multimodal software (Figure 66).



**Figure 66 - The dual synchronisation cycle** - The first activity (left) is the creation of the synchronisation sheet in a cycle of listening and relisting as the learner/group of learners imagine what images suit each identified segment of the audio narrative. The second activity creates the multimodal artefact using the sync sheet as a scaffold and invokes a further cycle of listening and relisting as the learner/group of learners synchronise the images with the audio using multimodal software

This dual synchronisation cycle is illustrated in terms of its activities in Figure 67. Both cycles are instances of synaesthetic meaning-making processes (following Kress 2003). Both require repeated intensive listening which Rost (2013, p.184) defines as – “an intensive aspect of permanent language acquisition”.



**Figure 67 - The dual synchronisation cycle**

### 10.2.3. Extension of Identity Texts for use in endangered language contexts

Much of Cummins’s work in supporting marginalised children has been in the context of children from minority communities attending school where a majority language is the medium of instruction in that school and writing is often a privileged code that these children can struggle to decipher. This valuable work encourages these children to bring their home cultures and languages into the school to affirm their identities and competencies. Identity texts in this context encourage identity investment in text making often using the children’s L1 and where the definition of a ‘text’ is interpreted

in a broad manner, incorporating a multiliteracies view of texts as multimodal. The goals of their research are literacy engagement and literacy attainment with written texts (Cummins and Early 2011). Their research was extremely helpful in informing the design of this intervention.

The tension that exists between the written standard in Irish and native-speaking children's vernacular<sup>73</sup> and also the dearth of suitable written resources for native speakers<sup>74</sup> meant that it was necessary to extend Cummins and Early's construct of identity texts (2011) for promoting language development in an endangered language such as Irish. The extension has bypassed writing by using audio and visual modes to promote language acquisition by combining rich audio resources and visual images in multimodal artefacts.

To enable the identity investment that is crucial to the success of identity texts, these language resources should have resonance for the learner. Examples of such resources include extracts from audio archives of people who the learner has a personal connection with, audio recordings made by the learners themselves of members of their family or local community or images of people and places that have personal meaning for the learner. The intervention outlined in this thesis is one such implementation of this extension of identity texts.

### **10.3. Transferable (medial) contributions**

The following three sections describe the transferable, medial contributions of the research. The first output describes a set of design criteria that were adapted from Cummins et al. (2007) for evaluating technology-supported instruction for endangered language speakers. The second output describes the cloud-based infrastructure that was implemented in both schools. It would be of use to any small school wishing to share digital resources such as school photos and children's work with the children's families while improving access to those resources across the school's own computing facilities. Its implementation is also designed to improve efficiencies for schools with poor Internet connections – a feature of many small rural schools in Ireland, including Gaeltacht areas. The third output describes an eight-week learning programme that implements an intervention similar to those described in Phases 2 and 3 of this research. This would be of interest to schools in Category A areas of the Gaeltacht in particular.

#### **10.3.1. Revised design criteria**

Chapter 5 introduced the adapted version of Cummins et al's (2007) design criteria for evaluating technology-supported instruction that focuses on developing the listening and speaking skills

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<sup>73</sup> See section 2.5.4

<sup>74</sup> See section 2.5.6



of endangered language learners. This was a useful rubric throughout the intervention to evaluate the various technologies used and the criteria are reproduced here as an output that would likely be a useful evaluation tool for both teachers and policy-makers:

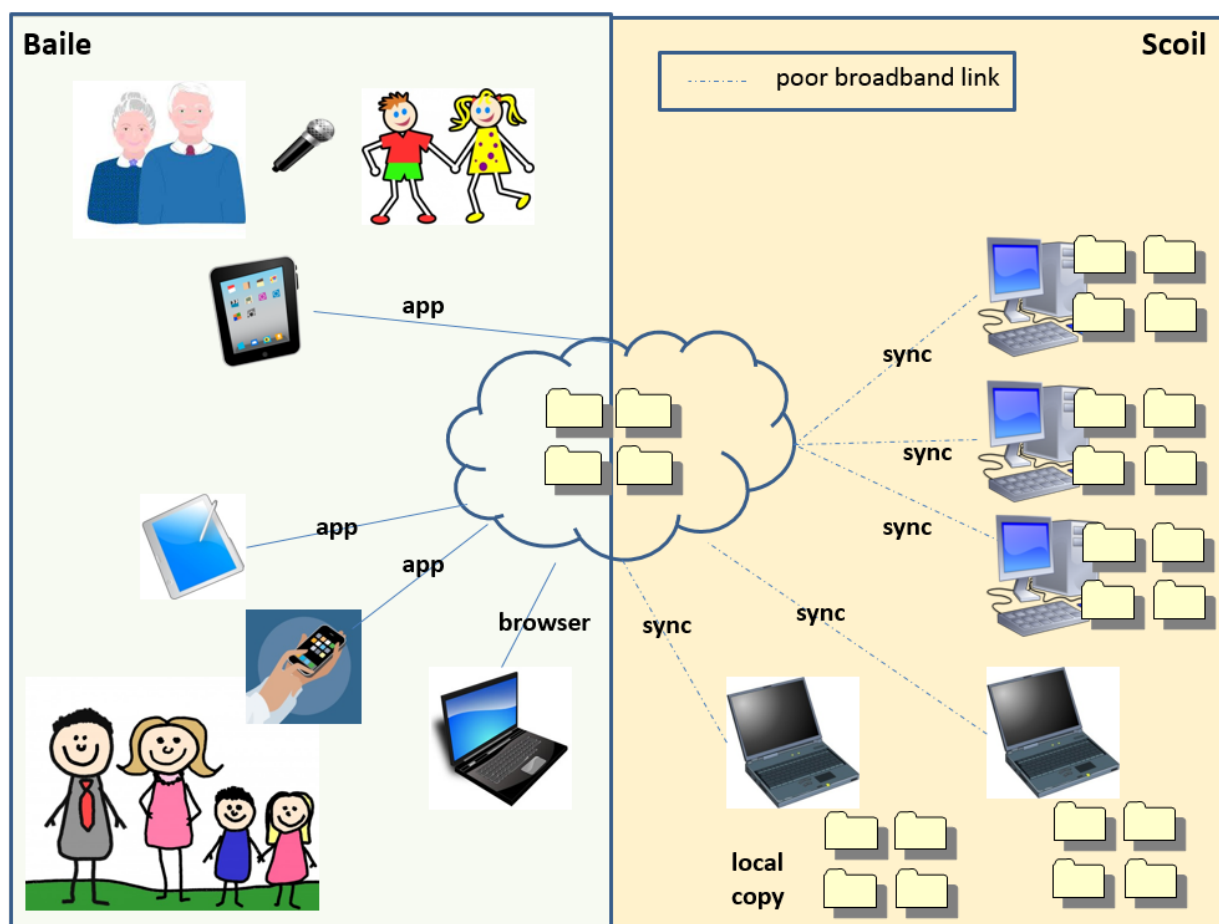
Does the technology-supported instruction:

- provide cognitive challenge and opportunities for deep processing of meaning?
- relate instruction to prior knowledge and experiences derived from students' homes and communities?
- promote active self-regulated collaborative inquiry?
- *promote extensive engaged listening and speaking using rich language resources?*
- *help students develop strategies for effective listening, speaking and learning?*
- promote affective involvement and identity investment on the part of students?
- *provide an inclusive approach to differentiated language provision based on multi-grade contexts that include both L1 and L2 speakers?*

(adapted from Cummins et al 2007 pp.109-110, emphasis added)

### **10.3.2. A robust cloud-based infrastructure to support Home-School activities in small rural schools**

The design of a robust cloud-based infrastructure for home-school resource sharing for small rural schools was only more formally realised prior to the deployment of Phase 3 of the intervention in Scoil Bharr na Leice. An infrastructure based in the cloud can enable technology-based classroom work using shared resources proceed efficiently irrespective of the presence of an internet connection. This role would normally be fulfilled by the school's Local Area Network (LAN), but in my experience very few schools that I have visited use their LAN properly to share resources. Resources are usually stored on the local hard drives of individual computers meaning that children need to sit at the same computers each time to access their work. This becomes complicated when mobile devices such as laptops and tablets are in use as the child must then identify the device based on other characteristics rather than its position in the classroom.

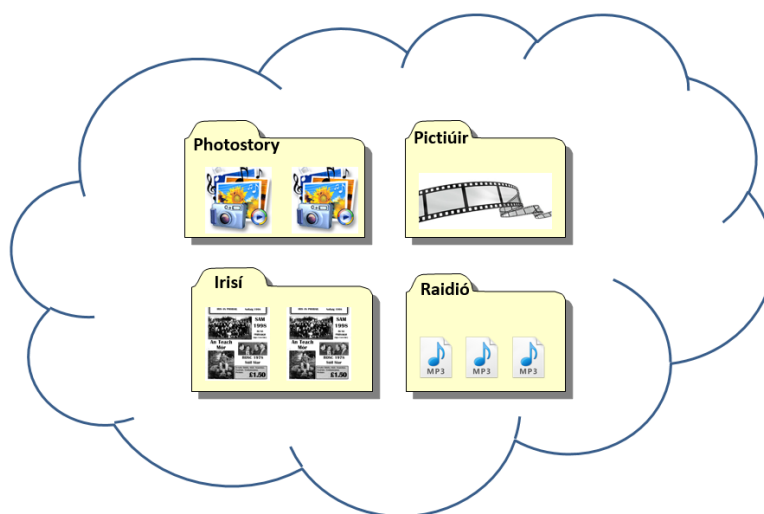


**Figure 68 - A Robust Technical Infrastructure with Resources Stored Locally and in the Cloud**

Figure 68 illustrates how this infrastructure should be set up in the context of a small rural school. The right side of the figure illustrates a typical technical setup in a small rural school – various computers running various operating systems connected to one another via a rudimentary LAN and connected to the Internet via a slow, unreliable link. By employing a cloud-based account in the school that has a local back-up facility, poor quality broadband should be less of an issue when accessing school resources via the cloud as a local copy of all of the resources will be synchronised with the hard drives on each of the computers in the school.

This solution also reduces the school's reliance on its LAN which often requires specialist support (e.g. when a new computer is to be connected to it). Irrespective of this, a LAN only makes resources available within the school, while a cloud-based account enables resources to be shared with homes. A basic account with most providers is free and provides sufficient storage space to enable the service to get up and running. If the school has an existing account for administrative purposes, it should consider creating a new account for the sole purpose of resource sharing with the home/community and should ensure that the cloud drive is not used as the primary storage medium for any file (i.e. all data should be stored and backed-up using other solutions). The desktop software is also free and

should be installed on each machine in the school using the login credentials of the cloud account. A root folder will be created on each machine which is where shared resources and student work should be stored.



**Figure 69 - A typical folder structure for a cloud account to facilitate school-home sharing of resources**

A folder structure should then be set up within the root according to the needs of the school (Figure 69). A common structure would be to have parent folders according to resource type and subfolders according to some other criteria (date-based, teacher-based, project-based, etc.). In relation to the children's work, in a small school, a parent folder containing a subfolder per child in the school would suffice. In larger schools, a parent folder for year of entry containing a subfolder per child would be more common. Little or no training is required once the software has been installed. Once resources are being stored within the folder structure, they should be automatically synchronised with the cloud and then populated to the other machines running the desktop software. The embedded nature of a cloud drive can render it almost entirely invisible and it can immediately become integrated not only into the implementation of the intervention but also into the day-to-day workings of the teacher which were outside the scope of the project.

Múinteoir Bríd centralised the storage of the school's digital image collection to the cloud drive which meant that parents had access to pictures of school trips and other events. She also realised the efficiencies in having access to the children's work for corrections, etc. In my final interview with Múinteoir Bríd, we discussed how the cloud drive replaced the Wiki and she suggested that a Wiki might be better suited to a secondary school. In concurring with her, I suggested that the cloud drive satisfied most key requirements:

*Niall: ... yeah but, aontaím leat faoin Wiki agus ar bhealaí nuair a socraíodh suas an Google Drive sílimse gur shásaigh sé an chuid is mó de na rudaí ....*

*Bríd: ... ó, rinne sé difríocht mór millteach ... feictear domsa ... sa suim freisin .. agus sa méid a bhí siad in ann taispeáint sa mbaile ... cheap mé go raibh an Google Drive **thar barr** ... táimid fós ag úsáid an Google Drive ...*

Post-Phase 2 interview with Múinteoir Bríd, Cluain Locha

A cloud drive was implemented from the beginning in Phase 3, Barr na Leice and by the end of the second session, Múinteoir Síle could see the huge benefit of it

*Síle: ... agus fiú an stuif sin a bheith againn in aon áit amháin ... tá sé iontach ... yeah ... tá ...*

Post-Session 2 debriefing with Múinteoir Síle, Barr na Leice

I was able to remotely upload resources to the cloud both from the radio archives and resources that the children had brought in. The teacher, the children and family members at home were then able to access these resources. The children were also occasionally uploading their own pictures to support the creation of their digital artefacts. These kind of interactions proved far more cumbersome to achieve with the wiki.

### **10.3.3. An Eight-week Programme for Engagement with Rich Language Resources**

Hoadley suggests that the outcome of design-based research “is the intervention” (Hoadley 2006). To encourage transferability of an intervention to other contexts, it is important that practitioners have a clear view of how this might be done. The following eight week programme for engagement with rich language resources (Figure 70) is therefore an attempt to do this drawing on the largely successful refinements to Phase 2 and its subsequent deployment in a second school in Phase 3.

It is imperative that Gaeltacht schools nurture the emerging school-based identities of native speaking children. Schools must ensure that a halt be brought to the decline in children’s Irish upon entering the Gaeltacht education system. This can be achieved by valuing the local vernacular and by making use of resources in the local vernacular featuring local speakers (and writers). The personal connection that often exists between the children and the speakers can be harnessed to deeply engage the children.

The resources can be sourced either from archival material such as the Raidió na Gaeltachta archive or from local sources that the children should be encouraged to identify and participate in bringing into the school. An exemplary source of the local vernacular would be a recording made by a child of a relation such as a grandparent. Other artefacts from the home which can be digitised (and returned) can also contribute to a collection of resources

The children can then act as curators of this collection of resources and with the aid of digital technologies, prepare new resources invested with their identities and based on their interests. These

can then form the basis of exhibitions (either physical or virtual) which can be presented to the local community resulting in an affirmation of identity and its association with the local language and culture.

The theme of the intervention is the local area. Assuming that a school had agreed to take part in such a programme, it would need to be visited by a technologist to set up the software and the cloud drive account. Initial trawls of the archive could begin before the start of the programme and the population of the cloud drive could begin remotely. The teacher could also request resources from home before commencement. A technologist would then need to visit the school to collect and digitise the resources and make them available in the cloud several times during the early weeks of the programme. The children should be made aware from the outset that they will be presenting their finished artefacts to family and friends at the end of the programme.

The first session (brainstorming) could be run by a trained teacher trying to encourage the children to suggest themes or people from the local area that they would like to discover more about in the radio archives. The teacher should be made conscious of the importance of identifying potential connections between the children and the archive. The teacher should try to find out if there was (or is) anyone in the family who was well known (e.g. a singer, storyteller, dancer, sportsman/woman, etc.) and this name should be a product of the brainstorming. The children should also be given the option of recording a rich audio clip with a family member at home – this has the potential to produce particularly engaging audio for these children. Training will need to be provided to children who choose this option.

The product of this session, a digital mind map, would be made available to a technologist to use as a basis for searching through the archives and extracting a range of clips matching as many of the criteria as possible and ensuring that a portion of the clips contain a level of language that is more suited to non-native speakers. A longer gap is needed between the first two sessions to enable resources to be located and made available.

The second session is focused on groups listening extensively to the range of resources made available with the aim of children identifying clips that they would like to build a multimodal artefact with. Collaborative listening can be facilitated by providing each child with a set of headphones and each group with an audio player and an audio splitter. Typical audio splitters can facilitate up to five sets of headphones. Groups of no more than four children are recommended. This also enables one port to be left free in the splitter to enable the teacher to plug in his/her headphones to support comprehension.

The third session involves the children browsing the digitised resources from home and selecting a definite clip that they are going to work with. The teacher needs to be fully familiar with all

of the clips by now as he/she should guide the children towards clips that are at a suitable level of language for them. Having older children mix with younger children in groups can be of great benefit to the teacher in terms of scaffolding of language and of digital literacy skills. Once a clip has been selected the children can start to search for general resources based on it and also engage people at home with the theme.

In the fourth session, the children will be shown an exemplary artefact with an accompanying synchronisation sheet that specifies the timecodes, images and effects that were applied over the course of the playing of the artefact. The children can then plan for their artefacts (preferably away from the computers on a simple MP3 player), following this model, by listening intently to their own clip while working with a synchronisation sheet, writing down time codes for the transitions in the narrative that they identify and noting the type of image that they wish to accompany each segment in the narrative. They can also note the type of software effect that they wish to apply (if any) to each image.

In the fifth and sixth sessions, the children are working on the computers, implementing their planned artefacts, working off their synchronisation sheets. The teacher and learning technologist should try to scaffold their search for images by uploading a selection of candidate images to their project folders based on their synchronisation sheets. Once the artefacts are complete, the technologist can publish them to DVD and the children can prepare to present them at an event for families/the community in the school.

Throughout the programme, the children should be encouraged to engage with people at home using the resources. The teacher should also consider asking older children in the classroom to support their younger classmates in using the technology (searching for images, with synchronisation and adding effects to the artefact).

Wk	Title	Teacher Activity	Researcher Activity	Children's activity
0	Preparation	Tell children about intervention, & encourage them to gather artefacts from home. Distribute parental consent forms	Set up cloud account; install software in school; initial search for radio programmes on the area.	Seek parental consent; search for artefacts at home; think about contribution to local area theme
1	<b>Session 1. Introduction &amp; brainstorming on local area theme &amp; request for resources from home</b>			
	Interim activities	Access cloud, become familiar with resources, encourage artefacts from home.	Trawl archive for programmes based on mind map; Listen for suitable extracts; Upload;	Access cloud at home; gather artefacts and information
2	<b>NO SESSION</b>			
3	<b>Session 2. Extensive Listening / familiarising with resources</b>			
	Interim activities	Encourage intergenerational interactivity at home. Offer option to record audio at home	Digitise artefacts & OCR on text items; extract audio clips; Upload	Share resources at home; gather information
4	<b>Session 3. Children browsing new resources and selecting themes for their artefacts</b>			
	Interim activities	Help children decide on a theme for their artefact; Form groups; Encourage intergenerational interactivity at home	Further digitisation; Prepare exemplary artefact and synchronisation sheet to scaffold learning	Decide on a theme for artefact; Share resources at home; gather information
5	<b>Session 4. Planning for artefacts: Show exemplary artefact and accompanying sync. sheet, Choosing an audio clip, work on sync. sheet and plan for sync. sheet</b>			
	Interim activities	Discuss artefacts in class; Encourage intergenerational interactivity at home	Search for candidate images to support artefacts and upload	Share resources at home; gather information
6	<b>Session 5. Working on artefacts - gathering images, working with Photostory</b>			
	Interim activities	Discuss artefacts in class; Encourage intergenerational interactivity at home	Search for candidate images to support artefacts and upload	Discuss progress at school and at home
7	<b>Session 6. Completing artefacts</b>			
	Interim activities	Prepare children to present their artefacts. Advertise community event and prepare school	Prepare DVD for community event.	Encourage parents and significant others to attend community event
8	<b>Community Event</b>			

Figure 70 - An eight week programme for technology-supported engagement with rich language resources in Gaeltacht schools

## 10.4. Recommendations

### 10.4.1. Recommendations for implementation and spread

The type of intervention that was implemented in both schools would not have been possible without the presence of the researcher who has many years' experience working with technology in classrooms, lecture halls and computer laboratories. The learning programme that was described in the previous section (Figure 70) highlights the responsibilities that the researcher had over the course of the intervention. To enable such a learning programme be implemented in other Gaeltacht schools, a suitable support structure would need to be in place. The details of such a structure would need to include:

- training and professional development of teachers and other key staff (e.g. cúntóirí teanga)
- technical support for Gaeltacht schools (setting up technology in the school and in the cloud, advice on the purchase of audio equipment, troubleshooting, backup of resources, supporting access to the resources at home, etc.)
- searching and extracting audio clips from the Raidió na Gaeltachta archive in a timely manner based on children's requirements
- school visits to collect material brought in from the home to be digitised
- curation of resources to support children's creation of multimodal artefacts
- creation of exemplary resources for schools as scaffolds for learning

These responsibilities could be shared by several stakeholders – e.g. RTÉ Raidió na Gaeltachta, NUI Galway, etc. A key factor in terms of cost is that the most important resources – the rich audio clips – are already in existence, they just need to be identified and extracted. The radio archive is so comprehensive that there are many hours of broadcasting relating to every Gaeltacht school district in the country, so schools could have access to rich language resources in their own local vernacular. This addresses a problem that is unfortunately becoming more common – the decreasing availability of target varieties in the local community and the subsequent loss of dialects (Ó hlfearnáin and Ó Murchadha 2011).

Ideally, over time, the radio database would be brought up to a standard whereby schools could query the contents themselves and even access programmes of interest to the children. The archive database would first need to be updated to a proper relational database structure and, if the needs of schools were to be incorporated in such an update, metadata would need to be added relating to the level of difficulty of language spoken within the programmes.



Another benefit of implementing a learning programme such as this across the Gaeltacht regions is that it would result in schools amassing a bank of rich language resources that they could re-use to support the future language development and learning needs of children right across the curriculum, just as both teachers in the research have started doing.

#### **10.4.2. Recommendations for further research**

The research outlined in this thesis illustrates how a pragmatic research approach can make a real difference to the lives of children in Category A Gaeltacht schools. The contributions of the research as outlined in this chapter have the potential to enable the implementation of similar interventions in other Gaeltacht schools. In the context of how serious the situation is in the Gaeltacht in relation to the retention of Irish as a community language, it is imperative that other researchers interested in this area consider pragmatic approaches that can make a real difference to people's lives. Design-based research is one such approach that is interventionist and pragmatic and yet generates theory that can then inform future research. Although challenging to implement as a single researcher, it was extremely rewarding to collaborate with two teachers and two classes of wonderful children in designing the intervention. There are countless other interventionist-style research projects that could be adopted to support the under-researched area of supporting native-speaking children's language development.

### **10.5. Conclusion**

The newly published Policy for Gaeltacht Education (ROS 2016) offers hope that the type of educational reform that has long been called for may finally be on the way but the situation is far too precarious for a wait-and-see approach in relation to its implementation. The State's previous poor record in relation to its commitment to the Gaeltacht also gives good reason to be circumspect. Action is required immediately. Should these reforms prove to support the types of action recommended in this research, it may offer opportunities for the more rapid implementation and spread of the types of intervention recommended here, but it would be possible to run the type of programme outlined in this thesis through the ad hoc funding model that has been funding language-support initiatives in the Gaeltacht in the past.

## Bibliography

- 'Adhmhaidin' (2015) *Athmhaidin - Athbhreithniú ar an Oideachas Gaeltachta*. 6/5/2015. Radio.
- Ahlstrom, D. (2010) Education Sector Allocated €4bn [online], *The Irish Times*, available: <http://www.irishtimes.com/news/education-sector-allocated-4bn-1.861599> [accessed 16 Apr 2016].
- Amanti, C. (2005) 'Beyond a beads and feathers approach', *Funds of knowledge: Theorizing practices in households, communities, and classrooms*, 131–41.
- Andersen, C., Johns, A. (2005) 'Labrador Inuttitut: Speaking into the future', *Études/Inuit/Studies*, 187–205.
- AOG (2013) Cainéal iTunesU Forbartha Ag Acadamh Na hOllscolaíochta Gaeilge [online], *Acadamh na hOllscolaíochta Gaeilge*, available: <http://www.acadamh.ie/iTunesU/> [accessed 27 Sep 2015].
- Ash, D. (2007) 'Using video data to capture discontinuous science meaning making in nonschool settings', in Goldman, R., Pea, R.D., Barron, B. and Derry, S.J., eds., *Video Research in the Learning Sciences*, Routledge: New York, 207–226.
- Augar, N., Raitman, R., Zhou, W. (2004) 'Teaching and learning online with wikis', in *Beyond the Comfort Zone: Proceedings of the 21st ASCILITE Conference, Perth, 5-8 December*, ASCILITE, 95–104, available: <http://dro.deakin.edu.au/view/DU:30005482> [accessed 7 Oct 2014].
- Baldauf Jr, R.B. (2006) 'Rearticulating the case for micro language planning in a language ecology context', *Current Issues in Language Planning*, 7(2–3), 147–170.
- Banister, P. (1995) *Qualitative Methods in Psychology: A Research Guide*, McGraw-Hill Education (UK).
- Bannan-Ritland, B. (2003) 'The Role of Design in Research: The Integrative Learning Design Framework', *Educational Researcher*, 32(1), 21–24.
- Barab, S. (2006) 'Design-Based Research: A Methodological Toolkit for the Learning Scientist.', in Sawyer, R.K., ed., *The Cambridge Handbook of The Learning Sciences*, Cambridge University Press: Cambridge, MA, available: <http://psycnet.apa.org/psycinfo/2006-07157-010> [accessed 15 Nov 2013].
- Barab, S. (2014) 'Design-Based Research: A Methodological Toolkit for the Learning Scientist.', in Sawyer, R.K., ed., *The Cambridge Handbook of the Learning Sciences, Vol. 2.*, Cambridge University Press: Cambridge, MA, 233–270.
- Barab, S., Squire, K. (2004) 'Design-based research: Putting a stake in the ground', *The Journal of the learning sciences*, 13(1), 1–14.
- Barab, S., Thomas, M., Dodge, T., Carteaux, R., Tuzun, H. (2005) 'Making learning fun: Quest Atlantis, a game without guns', *Educational Technology Research and Development*, 53(1), 86–107.
- Barron, B. (2007) 'Video as a tool to advance understanding of learning and development in peer, family, and other informal learning contexts', in Goldman, R., Pea, R.D., Barron, B. and Derry, S.J., eds., *Video Research in the Learning Sciences*, Routledge: New York, 159–187.
- Barron, B., Pea, R., Engle, R.A. (2012) 'Advancing understanding of collaborative learning using data derived from video records<sup>1</sup>', in Hmelo-Silver, C.E., Chinn, C.A., O'Donnell, A.M. and Chan, C., eds., *The International Handbook of Collaborative Learning*, Routledge: New York.
- BERA (2004) 'Revised Ethical Guidelines for Educational Research', available: <http://www.bera.ac.uk/guidelines.html> [accessed 2 Jul 2009].
- Bigum, C. (2002) 'The knowledge producing school: Rethinking computing and communication technologies in schools', *Professional Voice*, 2(2), 1–3.
- Bigum, C. (2003) 'The knowledge-producing school: Moving away from the work of finding educational problems for which computers are solutions', *Computers in New Zealand Schools*, 15(2), 22–26.
- Bigum, C. (2012) 'Schools and computers: Tales of a digital romance', in *Transformative Approaches to New Technologies and Student Diversity in Futures Oriented Classrooms*, Springer, 15–28, available: [http://link.springer.com/chapter/10.1007/978-94-007-2642-0\\_2](http://link.springer.com/chapter/10.1007/978-94-007-2642-0_2) [accessed 23 Feb 2012].
- Bouvier, R. (2010) 'Good Community Schools are Sites of Educational Activism', in Clandfield, D. and Martell, G., eds., *The School as Community Hub: Beyond Education's Iron Cage*, Canadian Centre for Policy Alternatives: Ottawa, Canada, 169–184, available:

<http://www.easywebdesignsolutions.com/EATORONTO/SchoolasCommunityHub%20.pdf#page=169> [accessed 18 May 2015].

- Brown, A.L. (1992) 'Design experiments: Theoretical and methodological challenges in creating complex interventions in classroom settings', *The Journal of the Learning Sciences*, 2(2), 141–178.
- Brown, A.L., Metz, K.E., Campione, J.C. (1996) 'Social interaction and individual understanding in a community of learners: The influence of Piaget and Vygotsky', in Tryphon, A. and Vonèche, J., eds., *Piaget-Vygotsky: The Social Genesis of Thought*, Lawrence Erlbaum Associates: Mahwah, NJ, 145–170, available: <https://books.google.com/books?hl=en&lr=&id=7-6X0UB6hgwC&oi=fnd&pg=PA145&dq=brown+and+campione+1996&ots=rWVHlvC1Fh&sig=KI85PxjiCdQpPD-iVHlylagkKVs> [accessed 10 Nov 2016].
- Brown, D., Nicholas, G. (2012) 'Protecting indigenous cultural property in the age of digital democracy: Institutional and communal responses to Canadian First Nations and Māori heritage concerns', *Journal of Material Culture*, 17(3), 307–324.
- Brown, J.S., Collins, A., Duguid, P. (1989) 'Situated cognition and the culture of learning', *Educational researcher*, 18(1), 32–42.
- Browne, D.R. (1992) 'Radio na Gaeltachta: revival, preserver or swan song of the Irish language?', *European Journal of Communication*, 7(3), 415–433.
- Cambridge English Dictionary [online] (2016) 'resonance', *Cambridge English Dictionary*, available: <http://dictionary.cambridge.org/dictionary/english/resonance> [accessed 6 Sep 2016].
- Canagarajah, S. (2002) 'Reconstructing local knowledge', *Journal of Language, Identity, and Education*, 1(4), 243–259.
- Chambers, N.A. (2015) 'Language Nests as an Emergent Global Phenomenon: Diverse Approaches to Program Development and Delivery', *The International Journal of Holistic Early Learning and Development*, 1, 25–38.
- Cobb, P., Confrey, J., diSessa, A., Lehrer, R., Schauble, L. (2003) 'Design Experiments in Educational Research', *Educational Researcher*, 32(1), 9–13.
- COGG (2005) *Tuairisc Ar Úsáid Shéideán Sí Sna Naíonáin Bheaga Agus Sna Naíonáin Mhóra*, An Chomhairle um Oideachas Gaeltachta agus Gaelscolaíochta, Baile Átha Cliath.
- COGG (2014) iTunes U | COGG [online], available: <http://www.cogg.ie/itunes-u/> [accessed 27 May 2014].
- COGG (2016) About Us | COGG [online], available: <http://www.cogg.ie/en/about-us/> [accessed 12 Apr 2016].
- Coimisiún na Gaeltachta (1926) *Tuarascáil Choimisiún Na Gaeltachta*, Oifig an tSoláthair: Baile Átha Cliath.
- Coimisiún na Gaeltachta (2002) *Tuarascáil an Dara Choimisiún Na Gaeltachta*, Oifig an tSoláthair: Baile Átha Cliath.
- Collins, A. (1992) 'New Directions in Educational Technology', in Scanlon, E. and O'Shea, T., eds., *Toward a Design Science of Education*, Springer: New York.
- Collins, A. (2006) 'Design-based research collective (interview)', *AERA International Convention*, available: <http://dbr.coe.uga.edu/expertinterview.htm> [accessed 20 May 2011].
- Collins, A., Joseph, D., Bielaczyc, K. (2004) 'Design Research: Theoretical and Methodological Issues', *Journal of the Learning Sciences*, 13(1), 15–42.
- Collins, J. (2009) Group Concerned by €233m Broadband Plan's Limitations [online], *The Irish Times*, available: <http://www.irishtimes.com/news/group-concerned-by-233m-broadband-plan-s-limitations-1.697101> [accessed 7 Jun 2016].
- Cope, B., Kalantzis, M., New London Group (2000) *Multiliteracies Literacy Learning and the Design of Social Futures* [online], Routledge: London; New York, available: <http://public.eblib.com/choice/publicfullrecord.aspx?p=241994> [accessed 21 May 2015].
- 'Cormac ag a Cúig' (2015) *Cormac ag a Cúig - Athbhreithniú ar an Oideachas Gaeltachta. 6/5/2015. Radio.*
- Cormack, M. (2013) 'Concluding remarks: Towards an understanding of media impact on minority language use', in Jones, E.H.G. and Uribe-Jongbloed, E., eds., *Social Media and Minority Languages: Convergence and the Creative Industries*, Multilingual Matters: Bristol, UK, 255–265.

- Cosgrove, J., Butler, D., Leahy, M., Shiel, G., Kavanagh, L., Creaven, A.-M. (2014) *The 2013 ICT Census in Schools—Main Report*, Educational Research Centre: Dublin.
- Cotter, C. (2001) 'Continuity and Vitality - Expanding Domains through Irish-language Radio', in Hinton, L. and Hale, K., eds., *The Green Book of Language Revitalization in Practice*, Academic Press: London, 301–311.
- Cowan, K. (2013) 'Multimodal transcription of video: examining interaction in Early Years classrooms', *Classroom Discourse*, 5(1), 6–21.
- Crystal, D. (2004) 'Creating a world of languages', in *Introductory Speech Presented at the 10th Linguapax Congress, Barcelona, FIPLV (International Federation of Language Teacher Associations), World News*, 22–35, available: [http://www.fundacioforum.org/b04/b04/www.barcelona2004.org/esp/banco\\_del\\_conocimiento/docs/PO\\_35\\_EN\\_CRYSTAL.pdf](http://www.fundacioforum.org/b04/b04/www.barcelona2004.org/esp/banco_del_conocimiento/docs/PO_35_EN_CRYSTAL.pdf) [accessed 29 May 2015].
- Cuban, L. (2001) *Oversold and Underused: Computers in the Classroom*, Harvard University Press: New York.
- Cummins, J. (1996) *Negotiating Identities: Education for Empowerment in a Diverse Society*, California Association for Bilingual Education: Ontario, Canada.
- Cummins, J. (2000) *Language, Power, and Pedagogy: Bilingual Children in the Crossfire*, Multilingual Matters: Clevedon, UK.
- Cummins, J., Brown, K., Sayers, D. (2007) *Literacy, Technology, and Diversity: Teaching for Success in Changing Times*, Pearson Boston, MA.
- Cummins, J., Early, M. (2011) *Identity Texts: The Collaborative Creation of Power in Multilingual Schools.*, Trentham Books: Stoke-on-Trent, UK.
- Cushman, E. (2013) 'Wampum, Sequoyan, and Story: Decolonizing the Digital Archive', *College English*, 76(2), 124.
- Daniels, H. (2007) 'Pedagogy', in Daniels, H., Wertsch, J.V. and Cole, M., eds., *The Cambridge Companion to Vygotsky*, Cambridge University Press: Cambridge, UK, 307–331.
- Daniels, H., Wertsch, J.V., Cole, M. (Eds.) (2007) *The Cambridge Companion to Vygotsky*, Cambridge University Press: Cambridge, UK.
- Day, R. (2001) 'The Irish language and radio: A response', in Kelly-Holmes, H., ed., *Minority Language Broadcasting: Breton and Irish*, Multilingual Matters: Clevedon, UK, 73–82.
- DCCAE (2015) *National Broadband Plan: Connecting Communities (Updated Strategy)*, Department of Communications, Climate Action and Environment: Dublin.
- DCCAE (2016a) "'The National Broadband Plan will be the most significant investment in rural Ireland since electrification" - Denis Naughten TD', available: <http://www.dccae.gov.ie/news-and-media/en-ie/Pages/PressRelease/National-Broadband-Plan-in-rural-Ireland.aspx> [accessed 6 Jun 2016].
- DCCAE (2016b) 'Private Members Business Motion on Rural Broadband - Minister Denis Naughten T.D.', available: <http://www.dccae.gov.ie/news-and-media/en-ie/Pages/Speech/Minister-Naughten-on-Rural-Broadband-Motion.aspx> [accessed 6 Jun 2016].
- DCENR (2012) *Delivering a Connected Society. A National Broadband Plan for Ireland*, Department of Communications, Energy and Natural Resources: Dublin.
- DCENR (2013) *Doing More with Digital: National Digital Strategy for Ireland. Phase 1 - Digital Engagement*, Department of Communications, Energy and Natural Resources: Dublin.
- Delap, B. (2008) 'Irish and the media', in Nic Pháidín, C. and Ó Cearnaigh, S., eds., *A New View of the Irish Language*, Cois Life: Baile Átha Cliath, 152–163.
- Denzin, N.K., Lincoln, Y.S. (2005) *The Sage Handbook of Qualitative Research*, Sage: New York.
- Derry, S.J., Pea, R.D., Barron, B., Engle, R.A., Erickson, F., Goldman, R., Hall, R., Koschmann, T., Lemke, J.L., Sherin, M.G., Sherin, B.L. (2010) 'Conducting Video Research in the Learning Sciences: Guidance on Selection, Analysis, Technology, and Ethics', *Journal of the Learning Sciences*, 19(1), 3–53.
- DES (1997) *Schools IT 2000: A Policy Framework for the New Millennium.*, Department of Education and Science: Dublin.
- DES (2008a) *Investing Effectively in Information and Communications Technology in Schools, 2008-2013*, Department of Education and Science: Dublin.

- DES (2008b) *ICT in Schools: Inspectorate Evaluation Studies*, Department of Education and Science: Dublin.
- DES (2009) *Smart Schools = Smart Economy*, Department of Education and Science: Dublin.
- DES (2011) *Literacy and Numeracy for Learning and Life: The National Strategy to Improve Literacy and Numeracy among Children and Young People 2011 - 2020*, Department of Education and Skills: Dublin.
- DES (2015) *Digital Strategy for Schools - 2015-2020. Enhancing Teaching, Learning and Assessment*, Department of Education and Skills: Dublin.
- Design-Based Research Collective (2003) 'Design-Based Research: An Emerging Paradigm for Educational Inquiry', *Educational Researcher*, 32(1), 5–8.
- Dewey, J. (1915) *The School and Society* [online], University of Chicago Press, available: <https://archive.org/stream/schoolsociety00dewerich#page/n7/mode/2up>.
- Dicker, J., Havens, J., Dunbar, E., Johns, A. (2009) 'Developing Intermediate Language Learning Materials A Labrador Inuttitut Story Database', in Reyhner, J. and Lockard, L., eds., *Indigenous Language Revitalization: Encouragement, Guidance & Lessons Learned*, Northern Arizona University: Flagstaff, Arizona, 155–166, available: <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.206.4177> [accessed 1 Oct 2013].
- Dillenbourg, P. (2013) 'Design for classroom orchestration', *Computers & Education*, 69, 485–492.
- Dołowy-Rybińska, N. (2013) 'Kashubian and modern media: The influence of new technologies on endangered languages', in Jones, E.H.G. and Uribe-Jongbloed, E., eds., *Social Media and Minority Languages: Convergence and the Creative Industries*, Multilingual Matters: Clevedon, UK, 119–129.
- Dorian, N.C. (1981) *Language Death: The Life Cycle of a Scottish Gaelic Dialect*, University of Pennsylvania Press.
- Dorian, N.C. (1982) 'Defining the Speech Community to include its working margins', in Romaine, S., ed., *Sociolinguistic Variation in Speech Communities*, Arnold: London, 25–33, available: [http://www.academia.edu/download/31062859/Dorian\\_1982\\_Defining\\_the\\_speech\\_community.pdf](http://www.academia.edu/download/31062859/Dorian_1982_Defining_the_speech_community.pdf) [accessed 7 Oct 2016].
- Dyson, L.E., Hendriks, M.A.N., Grant, S. (Eds.) (2007) *Information Technology and Indigenous People*, Information Science Pub. (an imprint of Idea Group Inc.): Hershey, PA.
- Eagraíocht na Scoileanna Gaeltachta (2013) *Tionchar an Fhógra Buiséad 2012 Ar Uimhreacha Ceapacháin Na Múinteoirí Ranga Ar Bhunscoileanna Beaga Gaeltachta* [online], available: <http://www.oireachtas.ie/parliament/media/committees/educationandsocialprotection/CUR-I-LATHAIR--Presentation.pdf> [accessed 5 Apr 2016].
- Edelson, D.C. (2002) 'Design research: What we learn when we engage in design', *The Journal of the Learning sciences*, 11(1), 105–121.
- Engle, R.A., Conant, F.R., Greeno, J.G. (2007) 'Progressive refinement of hypotheses in video-supported research', in Goldman, R., Pea, R.D., Barron, B. and Derry, S.J., eds., *Video Research in the Learning Sciences*, Routledge: New York, 239–254.
- Erickson, F. (1986) 'Qualitative Methods in Research on Teaching', in Wittrock, M.C., ed., *Handbook of Research on Teaching*, Macmillan: New York, 119–161.
- ESG (2013) *Teimpléad Do Pholasáí Gaeilge Do Bhunscoil Ghaeltachta*, Eagraíocht na Scoileanna Gaeltachta: Baile Bhuirne.
- Finan, S. (2016) Low Target for Rural Broadband Speeds Are Short-Sighted and Unacceptable [online], *Independent.ie*, available: <http://www.independent.ie/opinion/comment/low-target-for-rural-broadband-speeds-are-shortsighted-and-unacceptable-34769170.html> [accessed 17 Jun 2016].
- Fishman, J.A. (1991) *Reversing Language Shift: Theoretical and Empirical Foundations of Assistance to Threatened Languages*, Multilingual matters: Bristol, UK.
- Fishman, J.A. (2001) *Can Threatened Languages Be Saved: Reversing Language Shift, Revisited: A 21st Century Perspective*, Multilingual Matters: Bristol, UK.
- Fishman, J.A. (2004) 'Language Maintenance, Language Shift, and Reversing Language Shift', in Bhatia, T.K. and Ritchie, W., C., eds., *The Handbook of Bilingualism*, 406–436.

- Forte, A., Bruckman, A. (2006) 'From Wikipedia to the classroom: Exploring online publication and learning', in *Proceedings of the 7th International Conference on Learning Sciences*, International Society of the Learning Sciences, 182–188, available: <http://dl.acm.org/citation.cfm?id=1150061> [accessed 15 Sep 2015].
- Freire, P. (1970) *Pedagogy of the Oppressed*, Bloomsbury Publishing.
- Frost, D., Ireland, Western Development Commission (2012) *Connecting the West: Next Generation Broadband in the Western Region*, WDC: Ballaghaderreen, Co. Roscommon.
- gaelpport.com (2012) Gardener Gagged by the State [online], available: <http://www.gaelpport.com/default.aspx?treeid=37&NewsItemID=8390> [accessed 26 Mar 2016].
- Gaelscoileanna Teo. (2009) Feachtas Chun Tacú Le COGG : Gaelscoileanna – Irish Medium Education [online], available: <http://www.gaelscoileanna.ie/news/feachtas-chun-tacu-le-coggcampaign-supporting-cogg/> [accessed 26 Apr 2016].
- Gaelscoileanna Teo. (2013a) *Ár bPolasaí Gaeilge: Polasaí Na Gaeilge Do Ghaelscoileanna*, Gaelscoileanna Teo.: Baile Átha Cliath.
- Gaelscoileanna Teo. (2013b) 'ESG le scor : Gaelscoileanna – Irish Medium Education', available: <http://www.gaelscoileanna.ie/news/school-stories/esg-le-scor/> [accessed 10 Nov 2015].
- Gaelscoileanna Teo. (2016) 'Polasaí Oideachais Gaeltachta geallta roimh dheireadh na bliana agus i bhfeidhm Meán Fómhair 2017 : Gaelscoileanna – Irish Medium Education', available: <http://www.gaelscoileanna.ie/news/media/polasai-oideachais-gaeltachta-geallta-roimh-dheireadh-na-bliana-agus-i-bhfeidhm-mean-fomhair-2017/> [accessed 28 Sep 2016].
- Galla, C. (2009) 'Indigenous language revitalization and technology from traditional to contemporary domains', in Reyhner, J. and Lockard, L., eds., *Indigenous Language Revitalization: Encouragement, Guidance & Lessons Learned.*, Northern Arizona University: Flagstaff, Arizona, 167–182, available: <http://s3.amazonaws.com/photo.goodreads.com/documents/1250675882books/6720388.pdf#page=175> [accessed 1 Oct 2014].
- Gee, J.P. (2004) *Situated Language and Learning: A Critique of Traditional Schooling*, Routledge: London ; New York.
- Gee, J.P. (2008) *Social Linguistics and Literacies: Ideology in Discourses*, Routledge: London.
- Geertz, C. (1973) *The Interpretation of Cultures: Selected Essays*, Basic books.
- Girard, B. (2003) *The\_One\_to\_Watch: Radio, New ICTs and Interactivity* [online], available: [http://www.amarc.org/documents/books/FAO-The\\_One\\_to\\_Watch.pdf](http://www.amarc.org/documents/books/FAO-The_One_to_Watch.pdf) [accessed 22 Mar 2016].
- Glynn, T., Ó Laoire, M., Berryman, M., May, S. (2009) 'Transformative pedagogy and language learning in Maori and Irish contexts', in *Refereed Conference Proceedings and Keynotes*, Presented at the 2nd International Conference on Language, Education and Diversity, The University of Waikato, Hamilton, New Zealand, available: <http://researchcommons.waikato.ac.nz/handle/10289/3237> [accessed 25 Jan 2015].
- Goldman-Segall, R. (1997) *Points of Viewing Children's Thinking - A Digital Ethnographer's Journey*, Psychology Press: Hove, UK.
- González, N., Moll, L.C., Amanti, C. (2005) *Funds of Knowledge: Theorizing Practices in Households, Communities, and Classrooms*, Routledge: London.
- Gravemeijer, K., Cobb, P. (2006) 'Design research from a learning design perspective', *Educational design research*, 17–51.
- Hale, K. (2001) 'Irish', in Hinton, L. and Hale, K., eds., *The Green Book of Language Revitalization in Practice*, Academic Press: London, 299–300.
- Hanks, W.F. (1991) *Foreword to Situated Learning: Legitimate Peripheral Participation. Edited by J. Lave and E. Wenger*, Cambridge: Cambridge University Press.
- Harrison, B. (2005) 'The Development of an Indigenous Knowledge Program in a New Zealand Maori-Language Immersion School', *Anthropology & Education Quarterly*, 36(1), 57–72.
- Hatano, G. (1993) 'Commentary: Time to merge Vygotskian and constructivist conceptions of knowledge acquisition.', in Forman, E.A., Minick, N.E. and Stone, C.A., eds., *Contexts for Learning: Sociocultural Dynamics in Children's Development.*, Oxford University Press: Oxford, UK.

- Hermes, M., Bang, M., Marin, A. (2012) 'Designing indigenous language revitalization', *Harvard Educational Review*, 82(3), 381–402.
- Hermes, M., Cash, P.C., Donaghy, K., Erb, J., Penfield, S. (2016) 'New Domains for Indigenous Language Acquisition and Use in the USA and Canada', in Coronel-Molina and McCarty, T., eds., *Indigenous Language Revitalization in the Americas*, Routledge: New York, 269–287.
- Hermes, M., King, K.A. (2013) 'Ojibwe language revitalization, multimedia technology, and family language learning', *Language Learning and Technology*, 17(1), 125–144.
- Hickey, D.T., Kindfield, A.C., Horwitz, P., Christie, M.A.T. (2003) 'Integrating curriculum, instruction, assessment, and evaluation in a technology-supported genetics learning environment', *American Educational Research Journal*, 40(2), 495–538.
- Hindley, R. (1990) *The Death of the Irish Language: A Qualified Obituary*, Routledge: London.
- Hinton, L. (2001) 'The use of linguistic archives in language revitalization: The Native California Language Restoration Workshop', in *The Green Book of Language Revitalization in Practice*, Brill, 419–428.
- Hinton, L., Hale, K. (Eds.) (2001) *The Green Book of Language Revitalization in Practice*, Brill.
- Hoadley, C. (2006) 'Interview at AERA International Convention', available: <http://projects.coe.uga.edu/dbr/expertinterview.htm> [accessed 15 Feb 2011].
- Hoadley, C., Van Haneghan, J.P. (2012) 'The Learning Sciences: Where They Came From and What It Means For Instructional Designers', in Reiser, R.A. and Dempsey, J.V., eds., *Trends and Issues in Instructional Design and Technology (3rd Ed.)*, Pearson: London, 53–62, available: <https://www.steinhardt.nyu.edu/scmsAdmin/uploads/006/742/Hoadley-VanHaneghan-draft.pdf> [accessed 11 Dec 2013].
- Hoadley, C.P. (2002) 'Creating context: Design-based research in creating and understanding CSCL', in *Proceedings of the Conference on Computer Support for Collaborative Learning: Foundations for a CSCL Community*, International Society of the Learning Sciences, 453–462, available: <http://dl.acm.org/citation.cfm?id=1658679> [accessed 10 Feb 2015].
- Hope, C. (2016) Rural Homeowners Told to Wait for Three Years for 'Minimum' Broadband Speeds - Telegraph [online], *The Telegraph*, available: <http://www.telegraph.co.uk/news/earth/countryside/12120912/Rural-homeowners-told-to-wait-for-three-years-for-minimum-broadband-speeds.html> [accessed 6 Jun 2016].
- Hornberger, N.H., King, K.A. (1996) 'Language revitalisation in the Andes: Can the schools reverse language shift?', *Journal of Multilingual and Multicultural Development*, 17(6), 427–441.
- Hughes, J.E., Narayan, R. (2009) 'Collaboration and learning with wikis in post-secondary classrooms', *Journal of Interactive Online Learning*, 8(1), 63–82.
- Hughes, M., Greenhough, P. (2006) 'Boxes, bags and videotape: enhancing home-school communication through knowledge exchange activities', *Educational Review*, 58(4), 471–487.
- Hymes, D. (1972) 'On communicative competence', in Pride, J.B. and Holmes, J., eds., *Sociolinguistics: Selected Readings*, Penguin: London, 269–293, available: <http://seas3.elte.hu/coursematerial/KormosJudit/appling4.pdf> [accessed 10 Sep 2016].
- Ireland, Department of Children and Youth Affairs (2012) *Guidance for Developing Ethical Research Projects Involving Children.*, Department of Children and Youth Affairs: Dublin.
- 'Iris Aniar' (2015) *Iris Aniar - Athbhreithniú ar an Oideachas Gaeltachta. 6/5/2015. Radio.*
- Jenkins, H. (2001) Convergence? I Diverge. [online], *MIT Technology Review*, available: <https://www.technologyreview.com/s/401042/convergence-i-diverge/> [accessed 21 Sep 2014].
- Jewitt, C. (2005) 'Multimodality, "reading", and "writing" for the 21st century', *Discourse: studies in the cultural politics of education*, 26(3), 315–331.
- Jewitt, C. (2008) 'Multimodality and literacy in school classrooms', *Review of research in education*, 32(1), 241–267.
- Johns, A., Sherkina-Lieber, M. (2012) 'Strengthening the Bench: Improving Existing Language Skills in Nunatsiavut', *Linguistic and Cultural Encounters in the Arctic*, 63.
- Jones, E.H.G., Uribe-Jongbloed, E. (Eds.) (2013) *Social Media and Minority Languages: Convergence and the Creative Industries*, Multilingual Matters: Bristol, UK.

- Kalantzis, M., Cope, B., Cloonan, A. (2010) 'A multiliteracies perspective on the new literacies', *New literacies: multiple perspectives on research and practice*, 61–87.
- Kelly, A. (Eamonn) (2004) 'Design Research in Education: Yes, but is it Methodological?', *Journal of the Learning Sciences*, 13(1), 115–128.
- Kelly, A.E. (2013) 'When is Design Research Appropriate?', in Plomp, T. and Nieveen, N.M., eds., *Educational Design Research Part A: An Introduction.*, Slo: Enschede, 134–151.
- Kelly-Holmes, H. (2001) *Minority Language Broadcasting: Breton and Irish*, Multilingual Matters: Bristol, UK.
- Kennedy, E.B. (2016) Can Broadband Plan End Our 'digital Apartheid'? [online], *The Irish Times*, available: <http://www.irishtimes.com/business/technology/can-broadband-plan-end-our-digital-apartheid-1.2668691> [accessed 6 Jun 2016].
- Kenner, C., Ruby, M., Jessel, J., Gregory, E., Arju, T. (2007) 'Intergenerational learning between children and grandparents in East London', *Journal of Early Childhood Research*, 5(3), 219–243.
- Kincheloe, J.L. (2001) 'Describing the bricolage: Conceptualizing a new rigor in qualitative research', *Qualitative inquiry*, 7(6), 679–692.
- Knobel, M., Lankshear, C. (2008) 'Remix: The art and craft of endless hybridization', *Journal of Adolescent & Adult Literacy*, 52(1), 22–33.
- Koschmann, T. (1996) 'Paradigm shifts and instructional technology: An introduction', in Koschmann, T., ed., *CSCL: Theory and Practice of an Emerging Paradigm*, Lawrence Erlbaum Associates: Mahwah, NJ, 1–23, available: <http://books.google.com/books?hl=en&lr=&id=jwn3nYTq5sMC&oi=fnd&pg=PA1&dq=koschmann+1996&ots=AdL83kcSfy&sig=w9Ktf-wohmlBgikxUOCUL-mbvck> [accessed 12 May 2015].
- Koschmann, T. (2002) 'Dewey's contribution to the foundations of CSCL research', in *Proceedings of the Conference on Computer Support for Collaborative Learning: Foundations for a CSCL Community*, 17–22, available: <http://dl.acm.org/citation.cfm?id=1658618> [accessed 27 Nov 2013].
- Krashen, S. (1981) *Second Language Acquisition and Second Language Learning*, Pergamon: New York.
- Krashen, S. (1982) *Principles and Practice in Second Language Acquisition*, Pergamon: New York.
- Kress, G. (1997) *Before Writing: Rethinking the Paths to Literacy*, Routledge: London.
- Kress, G. (2003) *Literacy in the New Media Age*, Psychology Press: Hove, UK.
- Kress, G., Van Leeuwen, T.V. (2001) *Multimodal Discourse: The Modes and Media of Contemporary Communication*, Oxford University Press: New York.
- Kuipers, J.C. (2004) 'Ethnography of language in the age of video: "Voices" as multimodal constructions in some contexts of religious and clinical authority', *Discourse and technology: Multimodal discourse analysis*, 167.
- Lankshear, C., Knobel, M. (2011) *New Literacies: Everyday Practices and Social Learning*, McGraw-Hill International.
- Larusson, J.A., Alterman, R. (2009) 'Wikis to support the "collaborative" part of collaborative learning', *International Journal of Computer-Supported Collaborative Learning*, 4(4), 371–402.
- Lave, J. (1988) *Cognition in Practice: Mind, Mathematics and Culture in Everyday Life*, Cambridge University Press: Cambridge, MA.
- Lave, J., Wenger, E. (1991) *Situated Learning: Legitimate Peripheral Participation*, Cambridge university press: Cambridge, MA.
- Lemke, J. (2002) 'Becoming the village: Education across lives', *Learning for Life in the 21st Century: Sociocultural Perspectives on the Future of Education*, 34–45.
- Lenoach, C. (2012) 'An Ghaeilge Iarthraidisiúnta agus a Dioscúrsa', in *An Chonair Chaoch - An Mionteangachas Sa Dátheangachas*, Leabhar Breac: Indreabhán, Co. na Gaillimhe, 19–109.
- Little, D., Devitt, S., Singleton, D. (1994) 'The communicative approach and authentic texts', *Teaching modern languages*, 43–47.
- Mac Con Iomaire, T.R. (2006) 'Seirbhís Raidió ag Seirbhísiú Pobail', *Léacht Bhord na Gaeilge, OÉG*.
- Mac Donnacha, S. (2005) *Staid Reatha Na Scoileanna Gaeltachta - Léargas Ó Na Príomhoidí, Na Múinteoirí Agus Na Tuismitheoirí*, An Chomhairle um Oideachas Gaeltachta agus Gaelscolaíochta, Baile Átha Cliath.



- Mac Donnacha, S., Ní Chualáin, F., Ní Shéaghdha, A., Ní Mhainín, T. (2004) *Staid Reatha Na Scoileanna Gaeltachta/A Study of Gaeltacht Schools*, An Chomhairle um Oideachas Gaeltachta agus Gaelscolaíochta, Baile Átha Cliath.
- Mac Uidhilin, N. (2013) 'Technology: Pedagogic Opportunities for Minority Languages', in Jones, E.H.G. and Uribe-Jongbloed, E., eds., *Social Media and Minority Languages: Convergence and the Creative Industries*, Multilingual Matters: Bristol, UK, 146–158.
- Marsh, J. (2006) 'Emergent Media Literacy: Digital Animation in Early Childhood', *Language and Education*, 20(6), 493–506.
- Mavers, D. (2012) 'Transcribing video', *NCRM Working Paper. (Unpublished)*, available: <http://eprints.ncrm.ac.uk/2877/> [accessed 8 Jun 2014].
- McGreevy, R. (2015) Ireland's Broadband Black Spots [online], *The Irish Times*, available: <http://www.irishtimes.com/life-and-style/ireland-s-broadband-black-spots-1.2103169> [accessed 7 Sep 2016].
- McKenney, S., Kirschner, P.A., Voogt, J. (2012) 'Design research in early literacy within the zone of proximal implementation', Presented at the the annual meeting of the International Society of the Learning Sciences, Sydney, Australia, available: <http://lnx-hrl-075v.web.pwo.ou.nl/handle/1820/4670> [accessed 15 Nov 2013].
- McKenney, S., Nieveen, N., van den Akker, J. (2006) 'Design research from a curriculum perspective', *Educational design research*, 67–90.
- McKenney, S., Reeves, T. (2013) *Conducting Educational Design Research*, Routledge: London.
- Mercer, N. (2003) 'Developing Dialogues', in Wells, G. and Claxton, G., eds., *Learning for Life in the 21st: Sociocultural Perspectives on the Future of Education.*, Blackwell: Oxford, UK.
- Mercer, N., Fernandez, M., Dawes, L., Wegerif, R., Sams, C. (2003) 'Talk about texts at the computer: Using ICT to develop children's oral and literate abilities', *Reading*, 37(2), 81–89.
- Merchant, G. (2009) 'Web 2.0, new literacies, and the idea of learning through participation', *English Teaching*, 8(3), 107.
- Moll, L.C., Amanti, C., Neff, D., Gonzalez, N. (1992) 'Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms', *Theory into practice*, 31(2), 132–141.
- Moll, L.C., Whitmore, K.F. (1993) 'Vygotsky in classroom practice: Moving from Individual Transmission to Social Transaction', in Forman, E.A., Minick, N.E. and Stone, C., eds., *Contexts for Learning: Sociocultural Dynamics in Children's Development.*, Oxford University Press.
- Mor, Y. (2011) 'Design narratives: an intuitive scientific form for capturing design knowledge in education', in *The 6th Chais Conference on Instructional Technologies Research*, 57–63, available: <https://hal.archives-ouvertes.fr/hal-00588276/> [accessed 10 Feb 2015].
- Muintearas (2016) Muintearas, An Togra Oideachas Gaeltachta [online], available: <http://www.muintearas.com/> [accessed 26 Aug 2016].
- Nelson, M.E. (2006) 'Mode, meaning, and synaesthesia in multimedia L2 writing', *Language Learning & Technology*, 10(2), 56–76.
- New London Group (1996) 'A pedagogy of multiliteracies: Designing social futures', *Harvard educational review*, 66(1), 60–92.
- Ní Chonchúir, A. (2012) 'Feasacht Sochtheangeolaíochta agus Riachtanais Siollabais Chainteoirí Dúchais na Gaeltachta', in Lenoach, C., Ó Giollagáin, C. and Curnáin, B.Ó., eds., *An Chonair Chaoch: An Mionteangachas Sa Dátheangachas*, Leabhar Breac: Indreabhán, Co. na Gaillimhe, 144–170.
- Ní Ghallachair, A. (2008) 'Teaching and learning Irish today', in Nic Pháidín, C. and Ó Cearnaigh, S., eds., *A New View of the Irish Language*, Cois Life: Baile Átha Cliath, 191–201.
- Ní Ghearáin, H. (2012) 'An Caighdeánú agus Caighdeánú na Gaeilge', in Ó hIfeárnáin, T. and Ní Neachtain, M., eds., *An tSochtheangeolaíocht: Feidhm Agus Tuairisc*, Cois Life: Dún Laoghaire, 195–224.
- Ní Neachtain, M. (2000) 'Competence and minority language broadcasting: A response', *Current Issues in Language & Society*, 7(2), 155–158.
- Ní Neachtain, M. (2009) 'An Spás Poiblí a Dheimhniú don Ghaeilge', in Ó Catháin, B., ed., *Sochtheangeolaíocht Na Gaeilge*, Léachtaí Cholm Cille, An Sagart: Maigh Nuad, Éire, 6–15.

- Ní Shéaghdha, A. (2010) *Taighde Ar Dhea-Chleachtais Bhunscoile I Dtaca Le Saibhriú/Sealbhú Agus Sóisialú Teanga Do Dhaltáí Arb Í an Ghaeilge a gCéad Teanga*, An Chomhairle um Oideachas Gaeltachta agus Gaelscolaíochta: Baile Átha Cliath.
- Nic Cionnaith, P. (2012) 'Loiceadh Córaia: Léargas Tuismitheoirí ar an gCóras Oideachais sa Ghaeltacht', in Lenoach, C., Ó Giollagáin, C. and Curnáin, B.Ó., eds., *An Chonair Chaoch: An Mionteangachas Sa Dáttheangachas*, Leabhar Breac: Indreabhán, Co. na Gaillimhe, 144–170.
- Nic Fhlannchadha, S., Hickey, T.M. (2016) 'Minority language ownership and authority: perspectives of native speakers and new speakers', *International Journal of Bilingual Education and Bilingualism*, 1–16.
- Ó Béarra, F. (2007) 'Late Modern Irish and the Dynamics of Language Change and Language Death', in Tristram, H.L.C., ed., *The Celtic Languages in Contact*, 260–269.
- Ó Béarra, F. (2009) 'An Ghaeilge Nua agus Triail na Gaeilge', in Mac Craith, M. and Ó hÉalaí, P., eds., *Diasa Díograise: Aistí I Gcuimhne Ar Mháirtín Ó Briain*, 257–276.
- Ó Bróithe, É. (2012) 'Scéim Labhairt na Gaeilge: Feidhm agus Mífheidhm', in Lenoach, C., Ó Giollagáin, C. and Curnáin, B.Ó., eds., *An Chonair Chaoch: An Mionteangachas Sa Dáttheangachas*, Leabhar Breac: Indreabhán, Co. na Gaillimhe, 237–268.
- Ó Caollaí, É. (2014) Thousands March for Language Rights [online], *The Irish Times*, available: <http://www.irishtimes.com/news/social-affairs/thousands-march-for-language-rights-1.1693607> [accessed 21 Sep 2015].
- Ó Catháin, M. (2016) Géarchéim Ar an Tairseach Ag Bunscoileanna Iarthar Chonamara [online], *Tuairisc.ie*, available: <http://tuairisc.ie/gearcheim-ar-an-tairseach-ag-bunscoileanna-iarthar-chonamara/> [accessed 7 Sep 2016].
- Ó Curnáin, B. (2007) *The Irish of Iorras Aithneach County Galway*, Institute for Advanced Studies: Baile Átha Cliath.
- Ó Curnáin, B. (2009) 'Mionteangú na Gaeilge', in Ó Catháin, B., ed., *Sochtheangeolaíocht Na Gaeilge: Léachtaí Cholmcille 39*, An Sagart: Maigh Nuad, Éire, 90–153.
- Ó Curnáin, B. (2012) 'An Chanúineolaíocht', in Ó hIfearnáin, T. and Ní Neachtain, M., eds., *An tSochtheangeolaíocht: Feidhm Agus Tuairisc*, Cois Life: Dún Laoghaire, 83–110.
- Ó Duibhir, P. (2009) 'Múinteoirí sásta le Séideán Sí', *InTouch Magazine*, (39).
- Ó Duibhir, P., Ní Chuaig, N., Ní Thuairisg, L., Ó Brolcháin, C. (2015) *Soláthar Oideachais Trí Mhionteangacha: Athbhreithniú Ar Thaighde Idirnáisiúnta*, An Roinn Oideachais agus Scileanna: Baile Átha Cliath.
- Ó Flatharta, P. (2007a) *Struchtúr Oideachais Na Gaeltachta*, COGG: Baile Átha Cliath.
- Ó Flatharta, P. (2007b) *Struchtúr Oideachais Na Gaeltachta: Achoimre / A Structure for Education in the Gaeltacht: Summary*, COGG: Baile Átha Cliath.
- Ó Giollagáin, C. (2009) Drastic Steps Needed to Save Native-Spoken Irish [online], *The Irish Times*, available: <http://www.irishtimes.com/opinion/drastic-steps-needed-to-save-native-spoken-irish-1.795904> [accessed 22 Sep 2015].
- Ó Giollagáin, C. (2012) 'An Antraipeolaíocht Teanga', in Ó hIfearnáin, T. and Ní Neachtain, M., eds., *An tSochtheangeolaíocht: Feidhm Agus Tuairisc*, Cois Life: Dún Laoghaire, 15–32.
- Ó Giollagáin, C. (2014a) 'Unfirm ground: A re-assessment of language policy in Ireland since Independence', *Language Problems and Language Planning*, 38(1), 19–41.
- Ó Giollagáin, C. (2014b) Early Exposure to English Is Damaging the Standard of Irish among Gaeltacht Young [online], *The Irish Times*, available: <http://www.irishtimes.com/news/education/early-exposure-to-english-is-damaging-the-standard-of-irish-among-gaeltacht-young-1.2025774> [accessed 2 May 2015].
- Ó Giollagáin, C., Charlton, M. (2015) *Nuashonrú Ar an Staidéar Cuimsitheach Teangeolaíoch Ar Úsáid Na Gaeilge Sa Ghaeltacht: 2006–2011*, Údarás na Gaeltachta: Na Forbacha, Co. na Gaillimhe.
- Ó Giollagáin, C., Mac Donnacha, S., Ní Chualáin, F., Ní Shéaghdha, A., O'Brien, M. (2007) *Staidéar Cuimsitheach Teangeolaíoch Ar Úsáid Na Gaeilge Sa Ghaeltacht: Príomhthátaí Agus Moltaí*, Oifig an tSoláthair: Baile Átha Cliath.
- Ó Glaisne, R. (1982) *Raidió Na Gaeltachta*, Cló Chois Fharraige: Indreabhán, Co. na Gaillimhe.

- Ó hIfeárnáin, T. (2000) 'Irish language broadcast media: The interaction of state language policy, broadcasters and their audiences', *Current Issues in Language & Society*, 7(2), 92–116.
- Ó hIfeárnáin, T. (2008) 'Endangering Language Vitality through Institutional Development Ideology, Authority, and Official Standard Irish in the Gaeltacht', in King, K.A., Schilling-Estes, N., Fogle, L., Lou, J. and Soukup, B., eds., *Sustaining Linguistic Diversity: Endangered and Minority Languages and Language Varieties*, Georgetown University Round Table on Languages and Linguistics, Georgetown University Press: Washington, D.C.
- Ó hIfeárnáin, T. (2009) 'Irish-speaking society and the state', in Ball, M. and Müller, N., eds., *The Celtic Languages*, Routledge: London, 539–586.
- Ó hIfeárnáin, T. (2012) 'An phleanáil teanga agus an beartas teanga: coincheapa agus feidhm', in Ó hIfeárnáin, T. and Ní Neachtain, M., eds., *An tSochtheangeolaíocht: Feidhm Agus Tuairisc*, Cois Life: Baile Átha Cliath.
- Ó hIfeárnáin, T., Ó Murchadha, N. (2011) 'The perception of standard Irish as a prestige target variety', in Kristiansen, T. and Coupland, N., eds., *Standard Languages and Language Standards in a Changing Europe*, Novus Press: Oslo, Norway.
- Ó Laoire, M. (2000) 'Language policy and the broadcast media: A response', *Current Issues in Language & Society*, 7(2), 149–154.
- Ó Laoire, M. (2004) *Siollabais Chumarsáide Na Gaeilge*, An Aimsir Óg: Baile Átha Cliath.
- Ó Laoire, M. (2012) 'New perspectives on language policy for language revitalisation', *Te Kaharoa*, 5(1), available: <http://tekaharoa.com/index.php/tekaharoa/article/viewArticle/123> [accessed 31 Mar 2016].
- Ó Laoire, M., Harris, J. (2006) *Language and Literacy in Irish-Medium Primary Schools: Review of Literature* [online], NCCA: Baile Átha Cliath, available: <http://www.ncca.ie/uploadedfiles/primary/lang%20lit%20english.pdf> [accessed 6 Nov 2013].
- Ó Murchadha, N.P. (2012) 'Caighdeán, Caighdeánú agus Torthaí ar Chaighdeánú na Gaeilge', in Farr, F. and Moriarty, M., eds., *Language, Learning and Teaching: Irish Research Perspectives*, Peter Lang: Baile Átha Cliath.
- Ó Murchadha, N.P. (2016) 'The efficacy of unitary and polynomic models of codification in minority language contexts: ideological, pragmatic and pedagogical issues in the codification of Irish', *Journal of Multilingual and Multicultural Development*, 37(2), 199–215.
- Ó Riagáin, P. (1997) *Language Policy and Social Reproduction: Ireland 1893–1993*, Oxford: Clarendon Press.
- OECD (2015) *Students, Computers and Learning* [online], PISA, OECD Publishing, available: [http://www.oecd-ilibrary.org/education/students-computers-and-learning\\_9789264239555-en](http://www.oecd-ilibrary.org/education/students-computers-and-learning_9789264239555-en) [accessed 7 Oct 2015].
- OÉG (2005) *Research Ethics Committee Guidance Notes*, Ollscoil na hÉireann Gaillimh: Gaillimh.
- OÉG (2006) *Draft Policy on Data Retention* [online], Ollscoil na hÉireann Gaillimh: Gaillimh, available: [http://www.nuigalway.ie/data\\_protection/](http://www.nuigalway.ie/data_protection/) [accessed 14 Feb 2012].
- Oidhreacht Chorca Dhuibhne (n.d.) *Cuntas an Chúntóra* [online], Oidhreacht Chorca Dhuibhne, available: <http://ancuntoir.ie/knowledgebase/cuntas-an-chuntora/> [accessed 5 Apr 2016].
- Oidhreacht Chorca Dhuibhne (2016) *An Cúntóir Teanga* [online], *An Cúntóir Teanga*, available: <http://ancuntoir.ie/> [accessed 26 Sep 2016].
- O'Rourke, B. (2011) 'Whose language is it? Struggles for language ownership in an Irish language classroom', *Journal of Language, Identity & Education*, 10(5), 327–345.
- O'Rourke, B., Walsh, J. (2015) 'New Speakers of Irish: shifting boundaries across time and space', *International journal of the sociology of language*, 2015(231), 63–83.
- Oxford English Dictionary [online] (2016) 'resonance', *Oxford Dictionaries | English*, available: <https://en.oxforddictionaries.com/definition/resonance> [accessed 6 Sep 2016].
- Pahl, K., Bullivant, D., Escott, H., Hodson, J., Hyatt, D., Hurcombe, M., Pool, S., SteadmanJones, R. (2013) *Language as Talisman*, AHRC Scoping study <http://www.ahrc.ac.uk/FundingOpportunities/Researchfunding/Connected-Communities/Scopingstudiesandreviews/Documents/Language%20as%20Talisman.pdf> (accessed 1 July 2014).

- Pahl, K., Rowsell, J. (2010) *Artifactual Literacies: Every Object Tells a Story*, Teachers College Press: New York.
- Pahl, K., Rowsell, J. (2012) *Literacy and Education*, Sage: London.
- Pahl, K.H., Rowsell, J. (2011) 'Artifactual Critical Literacy: A New Perspective for Literacy Education', *Berkeley Review of Education*, 2(2).
- Peirce, B.N. (1995) 'Social Identity, Investment, and Language Learning\*', *TESOL quarterly*, 29(1), 9–31.
- Penfield, S., Cash, P., Galla, C.K., Williams, T., ShadowWalker, D. (2006) *Technology-Enhanced Language Revitalization* [online], Tucson, AZ: University of Arizona, available: [http://www.academia.edu/download/30379628/draftpt1\\_telr2006.pdf](http://www.academia.edu/download/30379628/draftpt1_telr2006.pdf) [accessed 29 May 2014].
- Penuel, W.R., Bell, P., Bevan, B., Buffington, P., Falk, J. (2016) 'Enhancing use of learning sciences research in planning for and supporting educational change: Leveraging and building social networks', *Journal of Educational Change*, available: <http://link.springer.com/10.1007/s10833-015-9266-0> [accessed 23 Apr 2016].
- Peters, V.L., Slotta, J.D. (2010) 'Scaffolding knowledge communities in the classroom: New opportunities in the Web 2.0 era', in Jacobsen, M. and Reimann, P., eds., *Designs for Learning Environments of the Future*, Springer, 205–232, available: [http://link.springer.com/chapter/10.1007/978-0-387-88279-6\\_8](http://link.springer.com/chapter/10.1007/978-0-387-88279-6_8) [accessed 5 Sep 2015].
- Péterváry, T., Ó Curnáin, B., Ó Giollagáin, C., Sheahan, J. (2014) *Iniúchadh Ar an gCumas Dátheangach: An Sealbhú Teanga I Measc Ghlúin Óg Na Gaeltachta*, COGG: Baile Átha Cliath.
- Potter, J. (2011) 'New literacies, new practices and learner research: across the semi-permeable membrane between home and school', *Lifelong Learning in Europe*, 3(16), 174–181.
- Potter, J. (2012) *Digital Media and Learner Identity: The New Curatorship*, Springer: London.
- Potter, J., Gilje, Ø. (2015) 'Curation as a new literacy practice', *E-Learning and Digital Media*, 12(2), 123–127.
- Rannóg an Aistriúcháin (1958) *Gramadach Na Gaeilge Agus Litriú Na Gaeilge. An Caighdeán Oifigiúil*, Oifig an tSoláthair: Baile Átha Cliath.
- Reeves, T., McKenney, S. (2013) 'Computer-assisted language learning and design-based research: Increased complexity for sure, enhanced impact perhaps', in Rodriguez, J.C. and Pardo-Ballester, C., eds., *Design-Based Research in CALL*, CALICO, available: <http://dSPACE.ou.nl/handle/1820/4992> [accessed 14 Nov 2013].
- Reeves, T.C. (2006) 'Design research from a technology perspective.', in Van den Akker, J., Gravemeijer, K., McKenney, S. and Nieveen, N., eds., *Educational Design Research*, Routledge: London, 52–66.
- Reimann, P. (2011) 'Design-based research', in Markauskaite, L., Freebody, P. and Irwin, J., eds., *Methodological Choice and Design*, Springer: New York, 37–50.
- Renandya, W.A., Farrell, T.S.C. (2011) "'Teacher, the tape is too fast!'" Extensive listening in ELT', *ELT Journal*, 65(1), 52–59.
- Reyhner, J., Cantoni, G., St Clair, R.N., Yazzie, E.P. (1999) *Revitalizing Indigenous Languages. Papers Presented at the Annual Stabilizing Indigenous Languages Symposium (5th, Louisville, KY, May 15-16, 1998).*, ERIC.
- Reyhner, J., Lockard, L. (Eds.) (2009) *Indigenous Language Revitalization: Encouragement, Guidance & Lessons Learned*. [online], Northern Arizona University: Flagstaff, Arizona, available: <http://s3.amazonaws.com/photo.goodreads.com/documents/1250675882books/6720388.pdf#page=175> [accessed 1 Oct 2014].
- Rialtas na hÉireann (1998) *An tAcht Oideachais*, Rialtas na hÉireann: Baile Átha Cliath.
- Rialtas na hÉireann (1999) *Curaclam Na Bunscoile. Teanga: Gaeilge*, Oifig an tSoláthair: Baile Átha Cliath.
- Rialtas na hÉireann (2010) *Straitéis 20 Bliain Don Ghaeilge*, Oifig an tSoláthair: Baile Átha Cliath.
- Rialtas na hÉireann (2012) *Acht Na Gaeltachta*, Oifig an tSoláthair: Baile Átha Cliath.
- Ring, E. (2010) Ireland Boasts Europe's Worst Broadband Speeds | Irish Examiner [online], *The Irish Examiner*, available: <http://www.irishexaminer.com/ireland/politics/ireland-boasts-europes-worst-broadband-speeds-119423.html> [accessed 6 Jun 2016].
- RnaG (2016) RTÉ Raidió Na Gaeltachta Eolas - RTÉ Raidió Na Gaeltachta [online], available: <https://www.rte.ie/rnag/articles/eolas/2013/0418/382239-eolas-fuinn/> [accessed 10 Jun 2016].
- ROE (2007) *An Ghaeilge sa bhunscoil*, An Roinn Oideachais agus Eolaíochta: Baile Átha Cliath.

- ROS (2015a) *Moltaí Polasaí Don Soláthar Oideachais I Limistéir Ghaeltachta*, Roinn Oideachas agus Scileanna: Baile Átha Cliath.
- ROS (2015b) *Tuarascáil Ar an Soláthar Oideachais Trí Mheán Na Gaeilge I Scoileanna Gaeltachta: Cás-Staidéir Bunscoile Agus Iar-Bhunscoile*, An Roinn Oideachais agus Scileanna: Baile Átha Cliath.
- ROS (2015c) *Athbhreithniú Ar an Oideachas Sa Ghaeltacht: Athbhreithniú Ar an Litríocht Náisiúnta*, An Roinn Oideachais agus Scileanna: Baile Átha Cliath.
- ROS (2015d) *Soláthar Scoile I Limistéir Pleanála Teanga Ghaeltachta: Soláthar Reatha Agus Éileamh*, An Roinn Oideachais agus Scileanna: Baile Átha Cliath.
- ROS (2015e) Open Policy Debate on Gaeltacht Education [online], available: <http://www.education.ie/en/Press-Events/Events/Gaeltacht-Education-Policy-Proposals/Open-Policy-Debate.html> [accessed 20 Feb 2016].
- ROS (2015f) *Primary Language Curriculum/Curaclam Teanga Na Bunscoile*, An Roinn Oideachais agus Scileanna: Baile Átha Cliath.
- ROS (2015g) New Language Curriculum for Youngest Primary School Children Announced [online], *An Roinn Oideachas agus Scileanna*, available: <http://www.education.ie/en/Press-Events/Press-Releases/2015-Press-Releases/13-November-2015-New-Language-Curriculum-for-Youngest-Primary-School-Children-Announced.html> [accessed 12 Dec 2015].
- Rost, M. (2013) *Teaching and Researching: Listening*, Routledge: London.
- Rowan, L., Bigum, C. (2010) 'At the hub of it all: Knowledge-producing schools as sites for educational and social innovation', in Clandfield, D. and Martell, G., eds., *The School as Community Hub: Beyond Education's Iron Cage*, Canadian Centre for Policy Alternatives: Ottawa, Canada, 185–203, available: <http://www.easywebdesignsolutions.com/EATORONTO/SchoolasCommunityHub%20.pdf#page=185> [accessed 23 Mar 2015].
- Rowell, J., Pahl, K. (2007) 'Sedimented identities in texts: Instances of practice', *Reading Research Quarterly*, 42(3), 388–404.
- Ruby, M. (2012) 'The role of a grandmother in maintaining Bangla with her granddaughter in East London', *Journal of Multilingual and Multicultural Development*, 33(1), 67–83.
- Saldaña, J. (2009) *The Coding Manual for Qualitative Researchers*, SAGE Publications Ltd: London.
- Sandoval, W. (2014) 'Conjecture Mapping: An Approach to Systematic Educational Design Research', *Journal of the Learning Sciences*, 23(1), 18–36.
- Sandoval, W.A. (2004) 'Developing learning theory by refining conjectures embodied in educational designs', *Educational Psychologist*, 39(4), 213–223.
- Scardamalia, M., Bereiter, C. (1993) 'Computer Support for Knowledge-Building Communities', *The Journal of the Learning Sciences*, 3(3), 265–283.
- Scardamalia, M., Bereiter, C. (2006) 'Knowledge building: Theory, pedagogy, and technology', in Sawyer, R.K., ed., *The Cambridge Handbook of the Learning Sciences*, Cambridge University Press: Cambridge, MA.
- Schwartz, M., Verschik, A. (2013) 'Achieving Success in Family Language Policy: Parents, Children and Educators in Interaction', in Schwartz, M. and Verschik, A., eds., *Successful Family Language Policy*, Springer Netherlands: Dordrecht, 1–20, available: [http://link.springer.com/10.1007/978-94-007-7753-8\\_1](http://link.springer.com/10.1007/978-94-007-7753-8_1) [accessed 24 Sep 2015].
- Scribner, S., Cole, M. (1978) 'Unpackaging literacy', in Dominic, J., Whiteman, M. and Fredericksen, C., eds., *Writing: The Nature, Development, and Teaching of Written Communication*, Lawrence Erlbaum Associates: Mahwah, NJ, 71–87.
- Seely Brown, J., Adler, R.P. (2008) 'Open education, the long tail, and learning 2.0', *Educause review*, 43(1), 16–20.
- Shaffer, D.W., Resnick, M. (1999) "'Thick" Authenticity: New Media and Authentic Learning.', *Journal of interactive learning research*, 10(2), 195–215.
- Shavelson, R.J., Phillips, D.C., Towne, L., Feuer, M.J. (2003) 'On the science of education design studies', *Educational researcher*, 32(1), 25–28.

- Slotta, J.D. (2013) 'Knowledge community and inquiry: New opportunities for scripting and orchestration', *OISE-University of Toronto*.
- Slotta, J.D., Najafi, H. (2013) 'Supporting collaborative knowledge construction with Web 2.0 technologies', in Mouza, C. and Lavigne, N., eds., *Emerging Technologies for the Classroom*, Springer, 93–112.
- Spolsky, B. (2009) *Language Management*, Cambridge University Press: Cambridge, UK.
- Spolsky, B. (2012) 'Family language policy – the critical domain', *Journal of Multilingual and Multicultural Development*, 33(1), 3–11.
- Stahl, G., Koschmann, T., Suthers, D. (2006) 'Computer-supported collaborative learning: An historical perspective', in Sawyer, R.K., ed., *The Cambridge Handbook of the Learning Sciences*, Cambridge University Press: Cambridge, UK, 409–426.
- Stahl, G., Ludvigsen, S., Law, N., Cress, U. (2014) 'CSCL artifacts', *International Journal of Computer-Supported Collaborative Learning*, 9(3), 237–245.
- Stone, C.A. (1993) 'What is missing in the metaphor of scaffolding?', in Forman, E.A., Minick, N. and Stone, C.A., eds., *Contexts for Learning: Sociocultural Dynamics in Children's Development*, Oxford University Press: New York.
- Strauss, A., Corbin, J. (1998) *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, Sage Publications, Inc.
- Street, B.V. (1984) *Literacy in Theory and Practice*, Cambridge University Press.
- Suthers, D.D. (2006) 'Technology affordances for intersubjective meaning making: A research agenda for CSCL', *International Journal of Computer-Supported Collaborative Learning*, 1(3), 315–337.
- Swain, M. (1985) 'Communicative competence: Some roles of comprehensible input and comprehensible output in its development', in Gass, S. and Madden, C., eds., *Input in Second Language Acquisition*, Newbury House: Rowley, MA, 235–253.
- Swain, M. (2000) 'The output hypothesis and beyond: Mediating acquisition through collaborative dialogue', in Lantolf, J.P., ed., *Sociocultural Theory and Second Language Learning*, Oxford University Press: Oxford, UK, 114.
- Thompson Long, B.T., Hall, T. (2015) 'R-NEST: Design-based research for technology-enhanced reflective practice in initial teacher education.', *Australasian Journal of Educational Technology*, 31(5).
- Three Ireland Inc (2008) 'National Broadband Customer Contract', available: [http://www.three.ie/pdf/NBS\\_smallprint.pdf](http://www.three.ie/pdf/NBS_smallprint.pdf) [accessed 7 Jun 2016].
- tuairisc.ie (2016) Beagnach €720,000 Fógartha Do Scéim Na gCúntóirí Teanga [online], *Tuairisc.ie*, available: <http://tuairisc.ie/beagnach-e720000-fogartha-do-sceim-na-gcuntoiri-teanga/> [accessed 26 Sep 2016].
- Tuismitheoirí na Gaeltachta (2015) 'Is muide an chéad ghlúin eile: Dóchas agus misneach a chothú sna cainteoirí óga dúchais', Presented at the Teachta Aniar, Baile Átha Cliath.
- Van den Akker, J., Gravemeijer, K., McKenney, S., Nieveen, N. (Eds.) (2006a) *Educational Design Research*, Routledge: London.
- Van den Akker, J., Gravemeijer, K., McKenney, S., Nieveen, N. (2006b) 'Introducing educational design research', in van den Akker, J., Gravemeijer, K., McKenney, S. and Nieveen, N.M., eds., *Educational Design Research*, Routledge: London, 3–7.
- Viégas, F.B., Wattenberg, M., McKeon, M.M. (2007) 'The hidden order of Wikipedia', in *International Conference on Online Communities and Social Computing*, Springer, 445–454, available: [http://link.springer.com/chapter/10.1007/978-3-540-73257-0\\_49](http://link.springer.com/chapter/10.1007/978-3-540-73257-0_49) [accessed 10 Feb 2016].
- Villa, D.J. (2002) 'Integrating technology into minority language preservation and teaching efforts: An inside job', *Language Learning and Technology*, 6(2), 92–101.
- Vygotsky, L.S. (1978) *Mind and Society: The Development of Higher Mental Processes*, Cambridge, MA: Harvard University Press.
- Vygotsky, L.S. (1981) 'The Genesis of Higher Mental Functions', in Wertsch, J.V., ed., *The Concept of Activity in Soviet Psychology*, Armonk: New York, 148–188.
- Vygotsky, L.S., Kozulin, A. (1986) *Thought and Language-Revised Edition*, MIT Press: Cambridge, MA.

- Walsh, C. (2007) *Cruinneas Na Gaeilge Scríofa Sna Hiar-Bhunscoileanna Lán-Ghaeilge I mBaile Átha Cliath*, COGG: Baile Átha Cliath.
- Wang, F., Hannafin, M.J. (2005) 'Design-based research and technology-enhanced learning environments', *Educational technology research and development*, 53(4), 5–23.
- Warschauer, M. (1999) 'Electronic literacies', *Language, culture and power in online education*.
- Warschauer, M., Grimes, D. (2007) 'Audience, authorship, and artifact: The emergent semiotics of Web 2.0', *Annual Review of Applied Linguistics*, 27, 1.
- Watson, I. (2003) *Broadcasting in Irish: Minority Language, Radio, Television and Identity*, Four Courts Press: Baile Átha Cliath.
- Weckler, A. (2016) National Broadband Plan May Not Be Completed until 2022 - Ten Years after Launch - Independent.ie [online], *Irish Independent*, available: <http://www.independent.ie/business/technology/national-broadband-plan-may-not-be-completed-until-2022-ten-years-after-launch-34662293.html> [accessed 6 Sep 2016].
- Wegerif, R., Schrimshaw, P. (1997) *Computers and Talk in the Primary Classroom*, Multilingual matters: Bristol, UK.
- wikipedia.org (2016) 'Wikipedia', *Wikipedia*, available: <https://en.wikipedia.org/w/index.php?title=Wikipedia&oldid=748370575> [accessed 10 Oct 2016].
- Williams, N. (2006) *Caighdeán Nua Don Ghaeilge, 2ú Eag.*, Coiscéim: Baile Átha Cliath.
- Wood, D., Bruner, J.S., Ross, G. (1976) 'The role of tutoring in problem solving', *Journal of child psychology and psychiatry*, 17(2), 89–100.
- Wozniak, H. (2015) 'Conjecture mapping to optimize the educational design research process.', *Australasian Journal of Educational Technology*, 31(5).
- Yakura, E.K. (2004) "'Informed consent" and other ethical conundrums in videotaping interactions', *DISCOURSE AND TECHNOLOGY*, 146.

## Appendix A – Ethics Documents

### School Information Sheet



#### Tionscnamh Taighde:

Tacaíocht a thabhairt do ghasúir sa nGaeltacht maidir le sealbhú teanga don chéad ghlúin eile ag úsáid na teicneolaíochta

#### BILEOG EOLAIS (MÚINTEOIR / PRÍOMHOIDE)

*Tá cuireadh á thabhairt don scoil páirt a ghlacadh i dtionscnamh taighde. Sula dtugann tú cead maidir le do ghasúr féin, tá sé tábhachtach go dtuigfeá cén fáth go bhfuil an taighde seo á dhéanamh agus céard atá i gceist leis. Tá eolas ar an mbileog seo maidir leis an aidhm, na rioscaí agus na buntáistí a bhaineann leis an tionscnamh seo. Ma thugann tú cead do do ghasúr páirt a ghlacadh, iarrfar ort féin agus do ghasúr Foirm Ceadaithe a shíniú. Má tá aon rud nach bhfuil soiléir duit, tá mé breá sásta míniú a thabhairt. Tóg d'am agus tú á léamh. Níor cheart duit cead a thabhairt go dtí go bhfuil tú sásta go dtuigean tú céard atá i gceist agus go dtí go mbíonn am agat machnámh a dhéanamh faoi.*

*Go raibh maith agat as ucht é seo a léamh*

#### Aidhm an tionscnaimh seo

Is í aidhm an tionscnaimh seo tacú le gasúir tionscnaimh a chruthú le cabhair ón teicneolaíocht. Bainfear úsáid as taifid de scéalta, amhráin agus ábhar béaloidis ó chartlann Raidió na Gaeltachta. Tá an tionscnamh dírithe ar ghasúir ó rang 3 go rang 6 agus beidh sé ar siúl ar feadh dhá thréimhse sé seachtainí i rith na scoilbliana 2013-2014. D'fhéadfadh an triú thréimhse a bheith i gceist má bhraitheann an phríomhoide go mbainfeadh na gasúir leas as.

Beidh taifid ó chartlann Raidió na Gaeltachta á chur ar fáil do na gasúir sa rang. Áiríonn na taifid seo scéalta, amháin agus míreanna béaloidis eile. Tabharfaidh an taighde seo deis do do ghasúr tionscnaimh digiteacha a chruthú ag baint úsáide as na taifid seo agus iad a mheascadh le pictiúir, le ceol agus le meáin eile. Tíocfaidh an taighdeoir ar cuairt 2 uair sa tseachtain i rith gach thréimhse 6 seachtainí. Oibreoidh sé leis an múinteoir agus leis na gasúir ar feadh 4 uair an chloig sa tseachtain ar an tionscnamh seo.

#### An gcaithfidh mo scoil páirt a ghlacadh sa tionscnamh?

Is fút féin é cead a thabhairt do do scoil páirt a ghlacadh. Má thugann tú cead di páirt a ghlacadh, iarrfar ort foirm toilithe a shíniú. Ba cheart freisin an bhileog eolais seo a choinneáil, ar fhaitíos go mbíonn aon cheist agat amach anseo. Má ghlacann an scoil páirt, is féidir fós an cead sin a tharraingt siar ag am ar bith agus ní gá fáth a thabhairt. Ní chuirfear as do do chearta ná do chearta na scoile i mbealach ar bith má tharraingíonn tú an cead siar ag am ar bith.

#### Má ghlacann mo scoil páirt, cén leas a d'fhéadfadh sí baint as an tionscnamh?

Má ghlacann do scoil páirt sa tionscnamh, cabhróidh sé le mo thaighde PhD maidir leis na bealaí gur féidir leis an teicneolaíocht tacú le cainteoirí óga oibriú le hacmhainní saibhre teanga i gcomhthéacs Gaeltachta. Creidim (ach ní féidir liom dearbhú) go bhféadfadh torthaí an taighde seo a bheith ar leas na ngasúr (m.sh. saibhriú teanga, obair ghrúpa, meas agus tuiscint ar an gcultúr áitiúil agus scileanna ríomhaireachta) agus ar leas gasúir agus múinteoirí i scoileanna lán-Ghaeilge eile (go háirithe cinn sa nGaeltacht). Spreagfar do ghasúr a c(h)uid saothar a roinnt leat sa mbaile agus tá fáilte romhat ag am ar bith teagmháil a dhéanamh liom le saothar do ghasúr a scrúdú nó a phlé.

#### An bhfuil aon riosca ag baint le páirt a ghlacadh sa tionscnamh?

Níl mórán rioscaí ag baint leis an tionscnamh seo. Pléitear rioscaí maidir le cosaint leanaí agus cosaint aitheantais pléite níos faide thíos. Déanfaidh mé gach iarracht oibriú leis an múinteoir, le cinntiú go bhfuil an tionscnamh chomh taitneamhach, tarraingteach agus tairbhíúil agus is féidir. Breathnófar ortsa agus ar na gasúir mar chomhoibrithe sa tionscnamh agus dá réir beidh fáilte roimh mholtáí uaitse agus uaidh na gasúir maidir le leagan amach an tionscnaimh má shíltear go bhfuil aon ghné de a d'fhéadfaí a fheabhsú nó a dhéanadh na gasúir níos sásta iad agus an tionscnamh ar siúl.



### **An t-eolas a bhaileofar**

Le héifeachtacht an taighde a scrúdú, tá sé i gceist agam cuid, nó gach ceann de na rudaí seo a leanas a dhéanamh:

- Cuidiú leis an múinteoir an tionscnamh agus an teicneolaíocht a mhíniú
- Freastal ar cuid de na ranganna le breathnú ar cén chaoi atá na gasúir ag cruthú a gcuid tionscnaimh
- Labhairt leis an rang mar ghrúpa in éineacht leis an múinteoir le haiseolas a fháil agus le smaintí a fháil maidir le cén chaoi a d'fhéadfaí an tionscnamh a fheabhsú
- Ceamara físe a úsáid le taifead a dhéanamh ar cuid de na seisiúin – cabhróidh sé seo liom breathnú siar ar na ranganna agus fáil amach cén chaoi a bhfuil an tionscnamh ag cuidiú leis na gasúir dul i ngleic leis na hacmhainní saibhre teanga
- Cóip a thógáil de tionscnaimh na ngasúir ar mhaithe le hanailís a dhéanamh orthu
- Agallaimh leath-struchtúrtha a chur agus a thaifead leis an múinteoir ag cúpla staid i rith an taighde le dul chun cinn an taighde a mheas
- Iarraidh ar an múinteoir taifead a choinneáil i rith an taighde ar a cuid tuairimí/machnaimh maidir leis an bpróiseas

Coinneofar gach eolas a bhailítear faoi do ghasúir i rith an taighde seo faoi rún agus ní roinnfear le héinne eile é. Stóráilfear an t-eolas i mbealach a chinntíonn go bhfuil cosaint á dhéanamh ar aitheantas do ghasúir. Déanfar an t-ábhar atá i gcuid de na taifid a scríobh amach ar mhaithe le hanailís a dhéanamh. Coinneofar na buntaifid faoi ghlas ar feadh tréimhse 5 bliana agus scríosfar iad ina dhiaidh sin. Úsáidfear ainmneacha bréige do na páistí in aon tuairisc faoin taighde agus déanfar gach iarracht aitheantas na ngasúir, na múinteoirí agus na scoile a choinneáil faoi rún.

### **Cosaint leanaí**

Má thioleann tú páirt a ghlacadh sa tionscnamh seo, iarraim ort go mbeidh múinteoir i láthair sa seomra ranga an t-am ar fad atá an taighdeoir ann. Tá na riachtanais uilig atá ag an scoil agus atá ag an ollscoil maidir le cosaint leanaí (fógra réachtúil na scoile, foirm seiceála na nGardaí, srl. ) comhlionta ag an taighdeoir.

### **Céard a tharlaíonn ag deireadh an staidéir?**

Déanfaidh an taighdeoir anailís ar thorthaí an taighde agus súil aige tráchtas a scríobh faoin méid a tharla i rith an tionscnaimh. Cuirfear é seo ar fáil don scoil agus seolfar achoimre faoin taighde amach go dtí na tuismitheoirí nuair atá sé réidh.

Le páirt a ghlacadh sa tionscnamh seo, is gá duitse an fhoirm toilithe a shíniú.

### **Dintúirí Teagmhála**

Má tá aon cheist, aon mholadh nó aon chúis ghearáin agat maidir leis an tionscnamh seo, is féidir teagmháil a dhéanamh liomsa am ar bith ag:

Niall Mac Uidhílin. Acadmh na hOllscolaíochta Gaeilge, Cama, Co. na Gaillimhe.

Fón: 09532834 / 0857361753. Ríomhphost: [niall.macuidhílin@oegaillimh.ie](mailto:niall.macuidhílin@oegaillimh.ie)

### **Cé atá ar fáil má tá tuilleadh eolais uaim nó má tá mé buartha faoi rud éigin?**

Má tá tú buartha faoin tionscnamh seo agus má tá tú ag iarraidh labhairt faoi rún le duine éigin nach bhfuil baint acu leis go díreach, is féidir teagmháil a dhéanamh le:

Cathaoirleach na Coiste Eitice, f/ch Oifig an Leasuachtarán Taighde, Ollcoil na hÉireann, Gaillimh,

Ríomhphost: [ethics@nuigalway.ie](mailto:ethics@nuigalway.ie)

### **Tuig do chearta féin agus cearta do pháiste**

Is rud deonach é páirt a ghlacadh sa taighde seo. Is féidir leat tarraingt siar ón taighde ag am ar bith agus ní bheidh tú thíos leis.

Is fiú an bhileog seo a choinneáil má bhíonn aon cheist agat amach anseo.

Go raibh maith agat!

## School Consent Form



### FOIRM TOILITHE (Príomhoide / Múinteoir)

Teideal: Taighde maidir leis na bealaí gur féidir leis an teicneolaíocht tacú le cainteoirí óga oibriú le hacmhainní saibhre teanga i gcomhthéacs Gaeltachta

Taighdeoir: Niall Mac Uidhilin

	Cuir tic sa mbosca thíos le do thoil
1. Dearbhaím gur léigh mé an bhileog eolais don tionscnamh seo agus gur tugadh deis dom ceisteanna a chur	
2. Tá mé sásta go dtuigim an t-eolas a cuireadh ar fáil agus go raibh mo dhóthain ama agam le machnamh a dhéanamh faoi.	
3. Tuigim nach bhfuil aon niachtanas orm páirt a ghlacadh sa taighde seo agus go bhfuil saoire agam tarraingt siar ag am ar bith agus nach gá fáth a thabhairt agus nach mbeidh mé thíos leis in aon slí mar gheall air seo	
4. Tá mé sásta páirt a ghlacadh sa taighde seo	

Tar éis duit an fhoirm seo a léamh, má aontaíonn tú agus má aontaíonn do ghasúr leis na téarmaí seo, iarrtar ort an fhoirm seo a shíniú thíos:

\_\_\_\_\_  
Dáta

\_\_\_\_\_  
Síniú

\_\_\_\_\_  
Ainm (BLOC LITREACHA)



## Parent Information Sheet



### Tacaíocht a thabhairt do ghasúir sa nGaeltacht maidir le sealbhú teanga don chéad ghlúin eile ag úsáid na teicneolaíochta

#### BILEOG EOLAIS (TUISMITHEOIRÍ)

*Tá cuireadh á thabhairt don scoil páirt a ghlacadh i dtionscnamh taighde. Sula dtugann tú cead maidir le do ghasúr féin, tá sé tábhachtach go dtuigfeá cén fáth go bhfuil an taighde seo á dhéanamh agus céard atá i gceist leis. Tá eolas ar an mbileog seo maidir leis an aidhm, na rioscaí agus na buntáistí a bhaineann leis an tionscnamh seo. Ma thugann tú cead do do ghasúr páirt a ghlacadh, iarrfar ort féin agus do ghasúr Foirm Ceadaíthe a shíniú. Má tá aon rud nach bhfuil soiléir duit, tá mé breá sásta míniú a thabhairt. Tóg d'am agus tú á léamh. Níor cheart duit cead a thabhairt go dtí go bhfuil tú sásta go dtuigean tú céard atá i gceist agus go dtí go mbíonn am agat machnamh a dhéanamh faoi.*

*Go raibh maith agat as ucht é seo a léamh*

#### Aidhm an tionscnaimh seo

Is í aidhm an tionscnaimh seo tacú le gasúir tionscnaimh a chruthú le cabhair ón teicneolaíocht. Bainfear úsáid as taifid de scéalta, amhráin agus ábhar béaloidis ó chartlann Raidió na Gaeltachta. Tá an tionscnamh dírithe ar ghasúir ó rang 3 go rang 6 agus beidh sé ar siúl ar feadh dhá thréimhse sé seachtainí i rith na scoilbliana 2013-2014. D'fhéadfadh an triú thréimhse a bheith i gceist má bhraitheann an phríomhoide go mbainfeadh na gasúir leas as.

Beidh taifid ó chartlann Raidió na Gaeltachta á chur ar fáil do na gasúir sa rang. Áiríonn na taifid seo scéalta, amháin agus míreanna béaloidis eile. Tabharfaidh an taighde seo deis do do ghasúr tionscnaimh digiteacha a chruthú ag baint úsáide as na taifid seo agus iad a mheascadh le pictiúir, le ceol agus le meáin eile. Tiocfaidh an taighdeoir ar cuairt 2 uair sa tseachtain i rith gach thréimhse 6 seachtainí. Oibreoidh sé leis an múinteoir agus leis na gasúir ar feadh 4 uair an chloig sa tseachtain ar an tionscnamh seo.

#### An gcaithfidh mo pháiste páirt a ghlacadh sa tionscnamh?

Is fút féin é cead a thabhairt do do ghasúr páirt a ghlacadh. Má thugann tú cead dóibh páirt a ghlacadh, iarrfar ort féin agus do ghasúr foirm toilithe a shíniú. Ba cheart freisin an bhileog eolais seo a choinneáil, ar fhaitíos go mbíonn aon cheist agat amach anseo. Má ghlacann do ghasúr páirt, is féidir fós an cead sin a tharraingt siar ag am ar bith agus ní gá fáth a thabhairt. Ní chuirfear as do chearta do ghasúr i mbealach ar bith má tharraingíonn tú an cead siar ag am ar bith, nó muna nglacann do ghasúr páirt sa tionscnamh ón tús. Muna nglacann do ghasúr páirt sa tionscnamh, tabharfaidh an múinteoir tacaíocht dóibh leanúint ar aghaidh leis an ghnáthobair scoile i rith am an tionscnaimh.

#### Má ghlacann mo ghasúr páirt, cén leas a d'fhéadfadh sé/sí baint as an tionscnamh?

Má ghlacann do ghasúr páirt sa tionscnamh, cabhróidh sé le mo thaighde PhD maidir leis na bealaí gur féidir leis an teicneolaíocht tacú le cainteoirí óga oibriú le hacmhainní saibhre teanga i gcomhthéacs Gaeltachta. Creidim (ach ní féidir liom dearbhú) go bhféadfadh torthaí an taighde seo a bheith ar leas na ngasúir agus ar leas gasúir agus múinteoirí i scoileanna lán-Ghaeilge eile (go háirithe cinn sa nGaeltacht). Spreagfar do ghasúr a c(h)uid saothar a roinnt leat sa mbaile agus tá fáilte romhat ag am ar bith teagmháil a dhéanamh liom le saothar do ghasúr a scrúdú nó a phlé.

#### An bhfuil aon riosca ag baint le páirt a ghlacadh sa tionscnamh?

Níl mórán rioscaí ag baint leis an tionscnamh seo. Pléitear rioscaí maidir le cosaint leanaí agus cosaint aitheantais pléite níos faide thíos. Déanfaidh mé gach iarracht, in éineacht leis an múinteoir, cinntiú go bhfuil an tionscnamh chomh taitneamhach, tarraingteach agus tairbhíúil agus is féidir. Breathnófar ar na gasúir mar chomhoibrithe sa tionscnamh agus spreagfar iad dá réir le moltaí a dhéanamh maidir le leagan amach an tionscnaimh má shíleann siad go bhfuil aon ghné de a d'fhéadfaí a fheabhsú nó a dhéanfaidh níos sásta iad agus an tionscnamh ar siúl.

### **An t-eolas a bhaileofar**

Le héifeachtacht an taighde a scrúdú, tá sé i gceist agam cuid, nó gach cearn de na rudaí seo a leanas a dhéanamh:

- Cuidiú leis an múinteoir an tionscnamh agus an teicneolaíocht a mhíniú
- Freastal ar cuid de na ranganna le breathnú ar cén chaoi atá na gasúir ag cruthú a gcuid tionscnaimh
- Labhairt leis an rang mar ghrúpa in éineacht leis an múinteoir le haiseolas a fháil agus le smaointí a fháil maidir le cén chaoi a d'fhéadfaí an tionscnamh a fheabhsú
- Ceamara fise a úsáid le taifead a dhéanamh ar cuid de na seisiúin – cabhróidh sé seo liom breathnú siar ar na ranganna agus fáil amach cén chaoi a bhfuil an tionscnamh ag cuidiú leis na gasúir dul i ngleic leis na hacmhainní saibhre teanga
- Cóip a thógáil de tionscnaimh na ngasúir ar mhaithe le hanailís a dhéanamh orthu

Coinneofar gach eolas a bhailítear faoi do ghasúr i nith an taighde seo faoi rún agus ní roinnfear le héinne eile é. Stóráilfear an t-eolas i mbealach a chinntíonn go bhfuil cosaint á dhéanamh ar aitheantas do ghasúr. Déanfar an t-ábhar atá i gcuid de na taifid a scríobh amach ar mhaithe le hanailís a dhéanamh. Coinneofar na buntaifid faoi ghlas ar feadh tréimhse 5 bliana agus scríosfar iad ina dhiaidh sin. Úsáidfear ainmneacha bréige do na páistí in aon tuairisc faoin taighde agus déanfar gach iarracht aitheantas na ngasúir, na múinteoirí agus na scoile a choinneáil faoi rún.

### **Cosaint leanaí**

Beidh an múinteoir i láthair sa seomra ranga an t-am ar fad atá an taighde ar siúl. Tá na riachtanais uilig atá ag an scoil agus atá ag an ollscoil maidir le cosaint leanaí (fógra reáchtúil na scoile, foirm seiceála na nGardaí, srl.) comhlíonta ag an taighdeoir.

### **Céard a tharlaíonn ag deireadh an staidéir?**

Déanfaidh an taighdeoir anailís ar thorthaí an taighde agus súil aige tráchtas a scríobh faoin méid a tharla i nith an tionscnaimh. Cuirfear é seo ar fáil don scoil agus seolfar achoimre faoin taighde amach go dtí na tuismitheoirí nuair atá sé réidh.

Le páirt a ghlacadh sa tionscnamh seo, is gá duitse agus do do ghasúr an fhoirm toilithe a shíniú.

### **Dintúirí Teagmhála**

Má tá aon cheist, aon mholadh nó aon chúis ghearáin agat maidir leis an tionscnamh seo, is féidir teagmháil a dhéanamh liomsa am ar bith ag:

Niall Mac Uidhílin. Acadmh na hOllscolaíochta Gaeilge, Carna, Co. na Gaillimhe.

Fón: 09532834 / 0857361753. Ríomhphost: [niall.macuidhílin@oegaillimh.ie](mailto:niall.macuidhílin@oegaillimh.ie)

### **Cé atá ar fáil má tá tuilleadh eolais uaim nó má tá mé buartha faoi rud éigin?**

Má tá tú buartha faoin tionscnamh seo agus má tá tú ag iarraidh labhairt faoi rún le duine éigin nach bhfuil baint acu leis go díreach, is féidir teagmháil a dhéanamh le:

‘Cathaoirdeach na Coiste Eitice, f/ch Oifig an Leasuachtarán Taighde, Ollcoil na hÉireann, Gaillimh, Ríomhphost: [ethics@nuigalway.ie](mailto:ethics@nuigalway.ie).

### **Tuig do chearta féin agus cearta do pháiste**

Is rud deonach é páirt a ghlacadh sa taighde seo. Muna nglacann do pháiste páirt ann, ní bheidh siad thíos leis. Is féidir leatsa nó do pháiste tarraingt siar ón taighde ag am ar bith agus ní bheidh siad thíos leis.

Is fiú an bhileog seo a choinneáil má bhíonn aon cheist agat amach anseo.

Go raibh maith agat!

## Parent Consent Form



### FOIRM TOILITHE (Tuismitheoirí & Gasúir)

Teideal: Taighde maidir leis na bealaí gur féidir leis an teicneolaíocht tacú le cainteoirí óga oibriú le hacmhainní saibhre teanga i gcomhthéacs Gaeltachta

Taighdeoir: Niall Mac Uidhílin

	Cuir tic sa mbosca thíos le do thoil
1. Dearbhaím gur léigh mé an bhileog eolais don tionscnamh seo agus gur tugadh deis dom ceisteanna a chur	
2. Tá mé sásta go dtuigim an t-eolas a cuireadh ar fáil agus go raibh mo dhóthain ama agam le machnamh a dhéanamh faoi.	
3. Tuigim nach bhfuil aon riachtanas ar mo ghasúr páirt a ghlacadh sa taighde seo agus go bhfuil saoire agamsa agus ag mo ghasúr tarraingt siar ag am ar bith agus nach gá fáth a thabhairt agus nach mbeimid thíos leis in aon slí mar gheall air seo	
4. Tugaim cead do mo ghasúr páirt a ghlacadh sa taighde seo	

Tar éis duit an fhoirm seo a léamh, má aontaíonn tú agus má aontaíonn do ghasúr leis na téarmaí seo, iarrtar ort an fhoirm seo a shíniú thíos:

Dáta

Síniú an Tuismitheora

Dáta

Síniú an Ghasúir

Ainm an Tuismitheora  
(BLOC LITREACHA)

Ainm an Ghasúir  
(BLOC LITREACHA)



## ***Garda Vetting form***



**CONFIDENTIAL**

4 November 2013

*To whom it may concern*

Re: Niall Mac Uidhilin (ID 09233740)  
PhD student, School of Education, NUI Galway

In line with University policy, students on specific programmes are required to complete a Garda Vetting process as part of their registration as a student of NUI Galway.

In the case of *Niall Mac Uidhilin* the Garda Central Vetting Unit has returned the following information:

According to Garda records there are no previous convictions recorded against the above named applicant.
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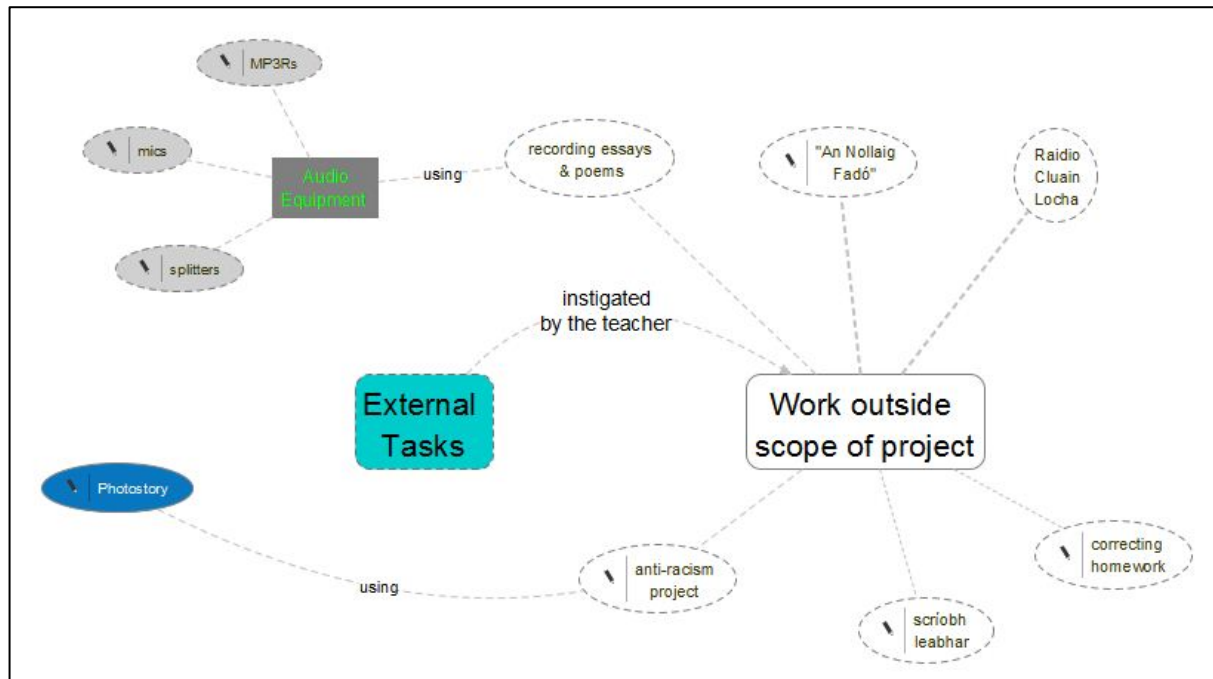
This information is provided in accordance with University policy and in strictest confidence and should not be disclosed to any third party, save the entity with which Applicant to be placed, or within your organisation other than in the context of this placement.

A handwritten signature in cursive script that reads 'Mary Fleming'.

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**Dr. Mary Fleming**  
**Head, School of Education**  
**NUI Galway**  
**+353 91 49 2195/4071**

## Appendix B – Sample Extracts from the Analysis Map

### Work Outside the Scope of the Project



### Technical Problems

