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Contemporary Research in Irish Education: Volume 4



Book of Abstracts

Sixth Annual Postgraduate Research Seminar

School of Education, NUI Galway

Block D Education Building, South Campus

Wednesday 26th April 2017

5.00-9.00pm

Welcome and Introduction

We are delighted to welcome you to the 6th Annual Postgraduate Research Seminar of the School of Education, NUI Galway.

A central part of the School of Education's recurrent *Research Seminar Series*, this annual research colloquium affords the School's master and doctoral researchers the opportunity to present their research to colleagues and peers, and to do so from a timely perspective – germane to the particular stage/phase of the research.

It furthermore provides opportunities to share and discuss the School of Education's postgraduate research, and the broader conceptual and methodological contexts within which that research undertaken.

This book of abstracts is the fourth in the series, *Contemporary Research in Irish Education*. As in the previous publications, this year's book of abstracts includes synopses of current and ongoing graduate research within the School of Education, NUI Galway. This research summarised here engages with and addresses salient questions and topics in contemporary educational research, both in Ireland and internationally, including:

- The teaching of Enterprise in Irish post-primary schools
- The primary and post-primary schooling experiences of Black and Minority Ethnic students
- Examining Irish post-primary students' difficulties in initial algebra
- The experiences of working class applicants and entrants to initial teacher education in Ireland
- 'Learningful' interactions at Galway City Museum
- Engaging students in STEM Through informal astrobiology learning
- Adopting a Content and Language and Integrated Learning (CLIL) approach
- Being an 'insider' researcher
- Addressing issues of gender modelling in Irish primary schools
- School leadership
- The Experiences of those who have been expelled from post-primary schools

Building on the successes of the previous seminars, and as a publication output from this year's colloquium, this book of abstracts includes the programme for the School of Education's 2017 Postgraduate Research Seminar and the abstracts of the presenters, outlining their respective research questions, methodologies, data collection and analysis.

We would like to congratulate the presenters in the seminar this year and their supervisors, and to thank all involved in organising this evening's event, particularly those colleagues who are chairing the respective parallel sessions. We look forward to an interesting, insightful and productive discussion and sharing of contemporary, critical educational research.

Le gach dea-mhéin,



Professor Gerry MacRuairc
Head, School of Education



Dr. Elaine Keane
Chair, Research Committee

Dr. Tony Hall
Editor, Book of Abstracts

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School of Education, NUI Galway

6th Annual Postgraduate Research Seminar (PGRS)

Venue: [Block D, Education Building, Main Campus](#)

D102 (ground floor); D202 (first floor)

SCHEDULE

From 4:30pm Refreshments (D102)

5.15-5.30pm: Welcome: D102

Welcome & Overview (Professor Gerry MacRuairc, Head, School of Education)

5.30-7pm: Parallel Session I

A	B
Laura Tagnin Classroom Talk and Biology Learning when Adopting a CLIL Approach	Devon Goodwin “There was a lot more going on than me learning how to teach”: The Experiences of Working Class Applicants and Entrants to Initial Teacher Education in Ireland
Aoife O'Brien Examining Difficulties in Initial Algebra: Analysis of the Conceptual Errors in Content Areas deemed Prerequisite for Algebra Proficiency held by Irish Post-primary Students	Maeve Dunne The Primary and Post-primary Schooling Experiences of Black and Minority Ethnic (BME) Students in Ireland
Sarah Carroll Extraterrestrial: Engaging Students in STEM through Informal Astrobiology Learning	Amy McDonald Role Models for Boys: Addressing Issues of Gender Modelling in Irish Primary Schools
Venue: D102 Chair: Dr. Manuela Heinz	Venue: D202 Chair: Dr. Elaine Keane

7-7.15pm: Break

7.15-8.45pm: Parallel Session II

A	B
Sandra Hayden “We need to talk about school expulsion”.	Gary McConway The Teaching of Enterprise in Irish Second Level Schools: An Analysis of the Antecedent and Contextual Factors which Deliver Success for All
Michael McNamara Data Analysis as an Insider Researcher: Key Lessons Learned	Anthony Kilcoyne Connected Leadership: Enhancing learner-centred Leadership in Schools
Sally McHugh Learningful interactions at Galway City Museum	Seamus Lynch Analysis of Capital Expenditure on Second-Level Schools in Ireland 2007-2016
Venue: D102 Chair: Dr. Kevin Davison	Venue: D202 Chair: Prof. Gerry MacRuairc

8.45-9pm: Close: D102

Close (Professor Gerry MacRuairc, Head, School of Education & Dr. Elaine Keane, Chair of Research Committee)

Classroom talk and biology learning when adopting a CLIL approach

Laura Tagnin

School of Education, National University of Ireland, Galway

Over the past two decades, CLIL (Content and Language Integrated Learning) has become an integral part of most European educational systems. However, research into CLIL has looked at it primarily through the lens of language learning research. The perspective of this research is to empirically examine CLIL through the lens of science education research. This study incorporates a qualitative approach to investigating science learning opportunities in a CLIL senior secondary science classroom in Germany that implemented a CLIL approach to learning biology through English.

The focus is on how the use of a foreign language affects the teacher's teaching and the students' sense-making of science during instances of classroom talk. The research question is concerned with: what language practices foster opportunities for learning science in a CLIL classroom setting at upper secondary level? The methodological approach used is framed by a sociocultural perspective on learning. The empirical data gathered consists of audio recordings of five science classes in one German school adopting a CLIL approach. The transcriptions were analysed through discourse analysis. In the presentation of findings, language practices that emerged from the analyses of several classroom instances are examined. These include code-switching and exploratory talk, which support the view that linguistically challenging situations contribute to generating opportunities beneficial for science learning. An additional key finding was the dominance of an authoritative approach to the classroom talk, which hinders both the construction of meaningful knowledge and the linguistic development of the students. We argue that language has the potential to be a resource rather than a barrier in the science classroom.

“There was a lot more going on than me learning how to teach”: The Experiences of Working Class Applicants and Entrants to Initial Teacher Education in Ireland

Devon Goodwin

School of Education, National University of Ireland, Galway

It has been noted in the research literature that the demographic diversity of the teaching population in Ireland, and of the Initial Teacher Education (ITE) student cohorts studying to become teachers, is disproportionately homogenous compared to the primary and secondary student populations in our schools. For the first time, this has been recognised at national level in the 2015 National Access Plan and in the 2017-2020 Programme for Access to Higher Education (PATH) initiative. The homogeneity of the teaching profession has been problematised for many reasons, both in terms of equality of access to the professions and in terms of the lost pedagogical benefits of a more diverse teaching force. The current Constructivist Grounded Theory (CGT) study deals with the demographic dimension of social class, and aims to explore the experiences of working class applicants and entrants to postgraduate post-primary ITE.

To date 30 in-depth interviews have been conducted with 25 participants who aspire to be post-primary teachers in Ireland, and the concurrent data analysis and collection is ongoing, as expected in a CGT research design. This paper will present one of the emerging core categories of the research: Criticising System Processes. In this category, I examine how participants' experiences both in post-primary school and in ITE affect their decisions to enter a teaching career. Of particular interest are three properties of this category - “criticising career guidance”, “wanting to be ‘seen’ in admissions”, and “identifying a lack of support for the complexities faced by ITE students from non-traditional backgrounds”. The aspects of the emerging category will then be discussed by drawing on relevant research literature and theory (for example, Bourdieu).

This research is part of the larger Diversity in Initial Teacher Education (DITE) project in the School of Education at the National University of Ireland, Galway.

Examining difficulties in initial algebra: Analysis of the conceptual errors in content areas deemed prerequisite for algebra proficiency held by Irish post-primary students

Aoife O'Brien

School of Education, National University of Ireland, Galway

This research aims to investigate the algebraic under performance of second year post-primary students in Ireland (approximate age 14 years). To this end a diagnostic test for algebra has been developed to profile and identify students who are struggling with algebra. The development of this test involved the identification of key mathematical content areas that are critical for success in algebra. It has been identified from the literature that both prerequisite and algebra content areas are key to a students' success in algebra overall. Test items have been selected and adapted from the literature and are aligned with both the key content areas and the Irish mathematics syllabus at junior cycle, the initial three years of post-primary education in Ireland. Each test item has been developed in order to identify students' conceptual errors in the particular content area. The test contains twenty one items, the majority of which are multiple choice, offering correct options and distractors based on common conceptual errors.

A sample ($n = 676$) of second year post-primary students, from nineteen schools across Ireland have been tested using the diagnostic test outlined. The initial results from this sample will be presented, focusing on the key conceptual errors held by Irish post-primary students in the content areas deemed prerequisite for success in algebra. These results will provide the opportunity to examine factors associated with success in algebra or lack thereof, and have the potential to help educators identify sources of poor performance and to design learning activities to assist students' conceptual understandings.

The primary and post-primary schooling experiences of Black and Minority Ethnic (BME) Students in Ireland

Maeve Dunne

School of Education, National University of Ireland, Galway

This paper examines the findings from a qualitative study on the Higher Education (HE) experience of Black and Minority Ethnic (BME) students in Irish HE. In response to increased migration, globalization and the changing demographics of the Irish educational landscape, this study looked at the ways in which race, ethnicity and cultural identity impact upon the HE experience. The latest HEA (2016) 'Facts and Figures' shows that 87.5% of the total Irish HE population are White Irish. However, minority ethnic groups do not constitute a target group in the National Access Plan 2015-2019 (HEA, 2015). Beyond quantitative data on participation rates of different groups there is limited insight about the voiced experiences of BME students within the Irish HE system (Darmody, M., Byrne D., McGinnity, F, 2014).

Through in-depth semi-structured interviews with 25 students across a range of Irish HE institutions, this study provides insights about the primary and post-primary schooling experiences, experiences of application to HE, and the HE social and academic experiences of BME students. This paper focuses on the findings in relation to the participants' *primary and post-primary schooling experiences* and how these experiences impacted on their progression to HE. Issues include bicultural identity battles and divides, experiences of racist bullying, multilingual identities and preparing for the Leaving Certificate. Drawing on Critical Race Theory, Critical Pedagogy and Postcolonialism this paper also examines how race, ethnicity and cultural background impact upon the schooling experience of BME students in Ireland.

ExtraterreSTrIAL: Engaging students in STEM Through Informal Astrobiology Learning

Sarah Carroll & Muriel Grenon

School of Natural Sciences, National University of Ireland, Galway

Creating a scientifically informed and engaged public has become both a national and European prerogative in recent years, yet it has been shown that children disengage with science by the time they leave primary schools. The Informal Science Education (ISE) sector can play a pivotal role in impacting children's decisions in studying Science Technology Engineering Maths (STEM) subjects and pursuing it as a career. This project aims at designing an informal science classroom intervention that contains elements of ISE which have the highest impact on children's science attitudes. The theme of astrobiology was chosen as it is relevant to current research, links to all STEM disciplines and appeals equally to both sexes.

Session content was designed using a design-based research (DBR) approach. It includes inquiry-based learning, hands-on activities and the presence of "real" scientists as session demonstrators which have been shown to improve learning and engagement.

The 2hr session revolved around 4 hands-on activities illustrating different aspects of astrobiology. The 1st pilot cycle was run with a group of 10-12 year olds, in a university outreach programme aimed at high ability primary school children on campus. Evaluative feedback was collected to assess whether (i) students had effectively engaged with the session content and materials, and (ii) it featured inquiry-based learning. Feedback was collected orally from science communication experts and via questionnaire surveys from demonstrators and children participants. Reflections from the session designer also contributed to the evaluation. Children questionnaire analysis showed that 100% of respondents (N=14 total responses) reported the session to be fun, interesting and well-organised. Demonstrator feedback mirrored this and suggested improvements included the incorporation of an increased number of inquiry-based elements in the session. Cycle analysis highlighted 4 further possible modifications to be implemented in the design of the 2nd cycle of this project.

Role Models for Boys: Addressing issues of gender modelling in Irish Primary Schools

Amy Mc Donald

School of Education, National University of Ireland, Galway

This presentation stems from analysis of previous research and theoretical perspectives outlining society's uncritical gendered assumption that more male role models in Irish primary schools will resolve current issues associated with underachieving boys. Popular media has placed constant pressure on government stakeholders to close the gender gap within teaching professionals in our primary schools. Boys are seen as the new 'vulnerable' during their primary schooling due to the 'feminine' environment created by the numerical dominance of females in this sector and the addition of more male teachers to act as role models for boys is the popular solution. However, there is limited local research conducted in Ireland with educational stakeholders that determines the need and effect of incorporating more male teachers as role models for boys. There is little evidence to define the characteristics of a good male role model and what implications gender modelling will have on the education of both boys and girls.

In this presentation, I will discuss the qualitative methodological element that enabled data collection within the research and identify the methodological orientation of the study. I will examine the early stages of data analysis and explore some of the key preliminary findings that have arisen within the research. Incorporating the responses of children's questionnaires and interview respondents, I will explore perceptions of gender modelling in primary schools. While exploring the current direction of the research, I will briefly highlight unexpected themes and constraints that arose throughout the data collection.

We need to talk about school expulsion

Sandra Hayden

School of Education, National University of Ireland, Galway

133 second level students in Ireland were officially expelled in the 2014- 2015 academic year, therein is 133 stories that remain untold within the Irish educational system. High expelling schools are testament that they cannot cope with such challenging students, as a result alternative education centres' referrals are on the increase to provide an educational option for expelled students all of which cost the state money that could be best spent in the mainstream school. International literature concurs that economical cost is just one impact of school expulsion. The question of expulsion is widely debated in Irish media from the perspectives of those of authority within the education system, however these debates do not adequately address the discourse surrounding why expulsion is viewed as the only recourse available.

According to the Department of Education school expulsions are rare, the process isn't an immediate concern however, increasing statistics show that it is fast becoming the elephant in the classroom. The experiences of students and principals involved in expulsion are conflicting but are not shared. This research proposes to look at the experiences of all stakeholders involved in the process of expulsion and their understanding of expulsion from a discourse perspective in order to give a voice to the unspoken experiences and opinions about the process of expulsion, its function and the long term effects. I aim to look at how and why we are conditioned to see expulsion as the only sanction available when faced with challenging behaviours.

In conclusion, discourse surrounding expulsion using Collective Intelligence will allow a new perspective to emerge and may create possible reasons as to why we are accustomed to see expulsion as a necessary sanction without considering what some term the 'educational death sentence' that it can be.

The teaching of Enterprise in Irish Second Level Schools: an analysis of the Antecedent and Contextual Factors which deliver Success for all

Gary McConway

School of Education, National University of Ireland, Galway

Entrepreneurship is universally lauded as a means to creating young innovative citizens who benefit the local and national economy while also being one of the eight EU key competences. Its primacy is articulated in a myriad of European Commission and national reports and embedded in second level curricula and specifications. However, the delivery of these enterprise programmes in second level schools remains ad hoc and sporadic while measuring the success of enterprise education remains problematic due to the nature of the content and the lack of specific certification at second level.

Much of the associated research literature focuses on the 'what' and 'how' enterprise should be taught, but a paucity remains in what shapes the ideal context for the delivery of enterprise programmes and what particular factors predispose a teacher, a school or community to develop excellence within the field. This study seeks to identify and analyse the primary factors, be they antecedent or contextual which facilitates this success in selected 'exemplary' schools by engaging with the relevant stakeholders.

Using purposeful sampling and qualitative research methods in four second level schools framed in a case study methodological approach, semi-structured interviews are currently being conducted with key personnel within the schools. The data collected will be used to answer our central research question as to what are the antecedent or contextual which facilitates their success.

A focus for this presentation is to explore the emergent factors facilitating success from the pilot research school and the initial data collected from the first of the four selected schools and relate how this initial data is employed to inform the evolving process of data collection.

Data Analysis as an Insider Researcher: Key Lessons Learned

Michael McNamara

School of Education, National University of Ireland, Galway

My doctoral research aims to explore the impact of standardised assessment within the Irish primary school context. This study, which is qualitative in nature, aims to collect and analyse the perspectives of key actors in this field, employing a social survey methodology. Here participants, primarily consisting of primary school teachers and principals in Galway city and county, were invited to complete an anonymous online qualitative questionnaire to collect as broad a range of perspectives relating to standardised assessment as was practically possible. Following the analysis of this data, a sub-section of these participants were then interviewed to delve deeper into emergent areas of interest. Importantly, 'Expert interviews' were also undertaken with National Council for Curriculum and Assessment executives, a standardised test creator and a third level lecturer in this field. This multi-perspective approach has ensured a holistic exploration of the topic and will consequently impact positively upon the validity and generalisability of the research findings. The focus of this presentation shall be two-fold. Firstly, I aim to outline and justify the analytical approach undertaken in the exploration of data in this doctoral research project. Discussion here shall also encompass the multi-stage data collection strategy employed, as well as the various techniques which were utilised to interrogate this data. The second part of this presentation shall then highlight my personal and professional learning which has emerged, and continues to emerge, throughout this explorative stage in the research process. Here, commentary shall focus on such features as; being an insider researcher, reaching saturation point, challenging assumptions and dealing with the unexpected when analysing data.

Connected Leadership: Enhancing learner-centred Leadership in Schools

Anthony Kilcoyne

School of Education, National University of Ireland, Galway

Faced with a torrent of reform driven by increasingly more performative and marketised neoliberal models of accountability the role of the school principal continues to expand and become ever more complex. An education system that is conditioned to be more reactive and responsive to the economic imperative has diverted the focus of school leadership from more educationally focused responsibilities to issues of performativity and accountability.

This research seeks to refocus school leadership on the core business of learning and learner-centred leadership. It was after all this focus on learner-centred leadership that was identified in the country report for Ireland prepared by the LDS for the OECD as the most neglected aspect of the principal's work in Ireland (LDS 2010,) with the work of Spillane echoing this; most time is spent "leading the schoolhouse rather than leading the core work of the schoolhouse" (OECD, 2013).

Pursuing an understanding of leadership as a social phenomenon and learning as a social construct the focus of this research could be summarised as an exploration of the potential of principal networks to act as a vehicle for deeper principal reflection and learning.

Learningful interactions at Galway City Museum

Sally McHugh

School of Education, National University of Ireland, Galway

The overall goal of this research is to conceptualise, evaluate and develop a multisite (museum and school) design for learning with technology, one that will enhance children's engagement with, and understanding of their cultural heritage. Research has shown that computers can have a significant, formative and positive impact on learning, particularly when the focus is on using the technology for creativity and collaboration. However, children need substantial support to help them to use technology in an optimal, creative and collaborative way. Highlighting the contemporary focus on people and place, the Heritage Council of Ireland have emphasised how cultural heritage is today not solely the 'preserve of experts'. Inspired by this view, children are being encouraged to interact with local objects/sites, museum artefacts and exhibitions that focus on people and place and to construct their own understandings. The research methodology is design-based research, which includes two cycles of principled technology experimentation and evaluation. Qualitative methods are being employed and the study is grounded within a multi-ontological framework, encompassing constructivism, constructionism, narrative, engagement, creativity, play, and object-based learning.

This paper outlines the second intervention in this research, undertaken in the summer of 2016, in Galway City Museum. Fourteen 5th/6th class children were involved in this *TECHe* (Technology-enhanced cultural heritage education) programme. Using iPads to facilitate autonomous, discovery learning, children used mobile learning to mediate and augment creativity in their interpretation of local cultural heritage, imagining, creating and sharing their digital artefacts throughout the process. The design created an overall positive learning experience for children, enhancing their engagement with historical objects and narratives in the local museum. Key themes emerged in the analysis of evaluation data, which will inform the next intervention. These include: child-centred learning in cultural heritage education; affect in engagement; peer learning; and tensions inherent in scaffolded play.

Analysis of Capital Expenditure on Second-Level Schools in Ireland 2007-2016

Seamus Lynch

School of Education, National University of Ireland, Galway

In 2013, the ESRI reported on the funding of second-level schools in Ireland. It concluded that significant disparities existed between voluntary and state-run schools in this regard. This research looks at capital expenditure spending between 2007 and 2017 across various school and patronage categories. It asks what criteria are said to apply, actually apply and ought to apply to the allocation of such funding.

Department of Education and Skills data is the primary source available. The research analyses expenditure across its main components, namely New Schools and Sites, Major Extensions/Refurbishments, Additional Accommodation, Emergency Works and what is known as the Summer Works Scheme. Initial research indicated that some data from the DES website is either currently not present, clearly inaccurate or significantly different to other years to warrant validation or further exploration. Of the former, little or nothing is known of the whereabouts of large amounts of relevant data. Factors identified as criteria that are or should be considered include number of pupils, age of school, population trends, choice in each area and perceived performance.

Between 2007 and 2011, there was a strong emphasis on Extensions, Refurbishments and Summer Works in post-primary schools; subsequently, there has been a marked upsurge in new schools being approved and completed. A sizeable proportion of these have been with full or part patronage of Educate Together. One can quickly identify that expenditure for Secondary Schools has been funnelled largely into Extensions and Refurbishments, with a disproportionately low figure for new secondary schools being built. Additional Accommodation is not distributed significantly more in one sector than others. From 2006 to 2016 student numbers increased significantly despite no change in the numbers of schools. When one looks at areas where identifiable choice is provided between voluntary schools and ETBs, one can see that with the exception of '7-School-Towns', voluntary schools have significantly more pupils. There are numerous reasons why this is the case, but the 'lead' exists in the majority of places where parents can choose between the two types of school. The research will continue to consider all factors relating to pupil choice and investment decisions and reach conclusions about how prudent recent and planned expenditure policy is.