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Contemporary Research in Irish Education - Volume 3



Book of Abstracts

Annual Postgraduate Research Seminar 2016

School of Education

NUI Galway

Nuns' Island, Galway

Wednesday April 6th 2016

5.00- . 0pm

Welcome and Introduction

We are delighted to welcome you to the 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 share and discuss their research, and the broader conceptual and methodological contexts within which that research is being undertaken.

Entitled *Contemporary Research in Irish Education* 2016, this book of abstracts represents a large selection of the School's current and ongoing graduate research, which engages with, and addresses important questions and topics across the three fundamental domains of educational research: innovation in methodology and teaching; professional development and leadership; and educational sciences/foundational educational research.

Building on the successes of the previous seminars, and as a publication output from this year's colloquium, this book of abstracts includes the abstracts of the presenters, synopsising their respective research focus, questions and methodologies.

Le gach dea-mhéin,



Dr. Mary Fleming
Head, School of Education
April 2016

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School of Education Annual Postgraduate Research Seminar

SEMINAR SCHEDULE

5.15-5.30pm: **Welcome** – G005, Science Teaching Centre

Welcome & Overview (Dr. Mary Fleming, Head, School of Education)

5.30-7pm: **Parallel Session I**

| A | B |
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| <p>Laura Tagnin The CLIL Science Classroom: Learning Science when the Language of Instruction is a Foreign Language</p> | <p>Andrea Lynch Hearing the Silent Voices of Young Woman Diagnosed with ADHD: What they wish you knew</p> |
| <p>Martin McHugh Off the Hook? From Theory to Practice in a Physics Video Hook Intervention</p> | <p>Maeve Dunne 'Not a hole worth digging', A qualitative study on the experiences of Black, Minority, Ethnic (BME) students in Irish universities</p> |
| <p>Paul Flynn Exploring the History of Education for Learning Community Formation in Undergraduate Initial Teacher Education</p> | <p>Sorcha O'Toole Enabling a Professional Identity in FE teachers: the importance of Dialogue in Developing Practice</p> |
| <p>Venue: G024 Chair: Dr. Veronica McCauley</p> | <p>Venue: G005 (STC) Chair: Dr. Kevin Davison</p> |

7-7.15pm: **Break for Refreshments** – G025 Staffroom

7.15-8.45pm: **Parallel Session II**

| A | B |
|--|--|
| <p>Niall MacUidhílin Using Orchestration Graphs to Model Pedagogical Scenarios that Encourage Intergenerational Activities between Gaeltacht Classrooms and Homes</p> | <p>Gary McConway The teaching of enterprise in Irish second level schools: an analysis of the antecedent and contextual factors which deliver success in the classroom and profits all...</p> |
| <p>Michael McNamara Exploring the Impact of Standardised Assessment on Children with Special Educational Needs: Key Actor Perspectives</p> | <p>Aoife O'Brien Examining difficulties in Initial Algebra in the Irish context</p> |
| <p>Sally McHugh Innovation in Heritage Education: Towards a synthesis of Formal and Informal Learning</p> | <p>Annelie Eberhardt Teachers Enquiring about their Classrooms: A French Teacher's Narration</p> |
| <p>Venue: G024 Chair: Dr. Pat Eaton</p> | <p>Venue: G005 (STC) Chair: Dr. Mary Fleming</p> |

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Laura Tagnin: The CLIL Science Classroom: Learning Science when the language of Instruction is a Foreign Language

This study aims to investigate the utilization of a CLIL (Content and Language Integrated Learning) approach in the learning of science at second level education in two classroom settings, one in Germany and one in Italy. In particular, it intends to examine science learning opportunities in linguistically diverse classrooms, as well as the teaching practices and the sphere of beliefs and perceptions of its practitioners. It adopts a multiple case study design, under the interpretive paradigm. Over the past two decades, CLIL has become an integral part of most European educational systems. However, in order to earn its sustainability in the educational landscape of the future it is important for CLIL to develop harmoniously with the subject matters it supports. In this contribution, a selection of existing CLIL studies is analysed with respect to their relevance in science education. It is argued that in most studies on CLIL concerned with the field of science education, researchers use science mainly as a model to examine how different types of interactions contribute to students' participation in classroom activity and to their understanding, production and negotiation of meaning. Whilst acknowledging the value of these contributions, it is maintained that these studies do not address specifically the science education aspect and that they rarely draw on the current competence models of scientific literacy and on the idiosyncrasies of science learning and teaching. Moreover, research on CLIL has tended to adopt a language learning orientation in design and analysis. In the given study, we aim to shift the perspective to that of science education research, with a focus on the interconnection between science content, language, and teaching and learning.

Martin McHugh: Off the Hook? From Theory to Practice in a Physics Video Hook Intervention

This paper gives an overview of the findings that arose from the second phase of a Design-Based Research (DBR) project conducted in 2015. The research examines the utilisation, design and impact of a suite of Physics Video Hooks in the naturalistic context of Junior Science classrooms. The physics hooks are a specifically constructed design artifact created to act as a ‘mental warm up’ for students while traversing the affective states of attention, interest and engagement. Hooks have the potential to positively impact on the omnipresent lack of interest in physics classes leading students from passive to attentive positions. During this phase, ten secondary science teacher participants from across Ireland were recruited for the study using a theoretical and purposive sampling strategy. Semi-structured interviews, observations, field notes and reflections form the data set. The analysis employed a theoretical coding framework. First cycle coding was conducted by hand. Second cycle coding was conducted in NVivo 10 and used pattern and theoretical analysis. Results from the former pilot phase indicated that employing the video hook at the start of the lesson was ineffective. Therefore, participants in this phase were asked to implement the hooks however they deemed appropriate based on their experience. From such a practical orientation, teachers successfully integrated the hooks into their instruction utilising a number of core strategies including Inquiry-Based Learning (IBL), segmentation and pre/post methods. However, the core facet of instruction that was communal among all successful interventions was the development of prior knowledge among students, which allowed them to cognitively negotiate the hooks. The instructional techniques operated in tandem with the hook design resulting in a positive influence on the student body. The impact can be described in terms of a knowledge deficit model of Situational Interest (SI).

Paul Flynn: Exploring the History of Education for Learning Community Formation in Undergraduate Initial Teacher Education

At the heart of recent developments in initial teacher education are efforts to establish a cultural shift within the teaching profession, to a point where professional learning communities may flourish. Historically, teachers have operated as individual conduits for student engagement with the education. This solitary persona is observed by potential student teachers as they move through formal compulsory education. Therefore, new entrants to undergraduate Initial Teacher Education (ITE) are both emergent members of the teaching profession and recent observant of in-service practice. Their embryonic status locates them at the nexus of the student-teacher relationship and consequently as potential agents of change. This juxtaposition is particularly acute at the point of entry to undergraduate ITE, accentuated by values established through prior experiences. This aim of this design-based research (DBR) study, is to explore how a collaborative exploration of the history of education, in a technology enhanced learning environment (TELE), can act as a catalyst for the development of participants' identities as emergent members of a pre-professional teaching community, at the point of entry to ITE.

The designed intervention, a twelve week non-elective module on the History and Structure of the Irish Education System, asked participants to collaboratively construct a shared online space representing an investigation of their past, their contemporaneous engagements with education, as well as what they believed their future engagement with education may look like. Participants engaged in a scaffold process of Story Exchange and were assigned a level of education to narrate on behalf of the group. All group members were required to collaboratively narrative any foreseeable engagements with education. This paper will present the theoretical framework supporting findings that indicate an emergent learning community was established and that participants began to think of themselves as members of an emergent pre-professional learning community.

Andrea Lynch: Hearing the Silent Voices of Young Woman Diagnosed with ADHD: What they wish you knew

Attention-deficit hyperactivity disorder (ADHD) is a chronic and often life-long condition typically manifest through symptoms of inattention and hyperactivity, which is thought to affect approximately 5% of children and 2.5% of adults (American Psychiatric Association, 2013). In Ireland, these numbers equate to between 8,000 to 43,000 children under the age of 14, and between 6,000 to 31,000 people aged 15 to 24 years (Reilly, 2009, p. 7).

ADHD is commonly linked to serious negative outcomes such as lowered academic performance and impaired social functioning. Despite previous research, little is known about ADHD as it influences the lives of young women in secondary school, and this is especially true within the Irish context where the study of ADHD is exceedingly rare. By engaging with females diagnosed with ADHD, this mixed-methods research has attempted to explore how young women experience life with ADHD and what challenges this condition may specifically bring to their educational and interpersonal experiences. This is a unique study, as it is the first known to the researcher, to exclusively focus on the experiences of young females affected by the condition between the ages of 13 to 20 years of age.

This presentation will share a few of the themes, which have emerged from data collected in semi-structured interviews held with participants. These themes can be summarised as the following:

- Self-advocacy & self-awareness in the diagnosis of ADHD
- The experience of delayed ADHD diagnosis
- Difficult student-teacher relationships

Discussion of the above themes will be framed within a gendered analysis and this presentation will close with a review of the possible implications that such themes may have for classroom praxis, especially as it relates to the support and inclusion of female students with ADHD in second level classrooms.

Maeve Dunne: 'Not a hole worth digging', A qualitative study of the experiences of Black, Minority, Ethnic (BME) students in Irish Universities

This paper outlines the initial findings of a qualitative study on the university experience of Black, Minority, Ethnic (BME) students. What is the overall potential and limitation of such research? Key areas discussed will focus on the complexity of the sample population in terms of categorization and definition when engaging with participants from differing backgrounds of culture, race, nationality, citizenship and self-identification. In addition, the way in which such terms and constructs impose upon the university experience of BME students will be examined in relation to initial findings within this research. Overall, this paper argues that a multi-faced student population requires a more defined, in depth and multifunctional research strategy to fully engage with an understanding of BME students and their needs and challenges within the university space. While this research hopes to give some sense of voice, the overall findings suggest that a significant amount of BME student experiences remain silenced. Now that we have decided to dig the hole, where do we as educators, researchers, institutions and policy makers go from here?

Sorcha O'Toole: Enabling a Professional Identity in FE teachers: the importance of Dialogue in Developing Practice

This research is purporting to explore ways in which FE teacher's professional capacity can be enhanced creatively within the further education (FE) sector in Ireland. The study aims is to investigate and analyse what happens when we introduce a teaching and learning focused intervention directly into the FE classroom and whether this activity enhances professionalism among the study participants. The research utilises a case study method and involves experienced FE teachers from one single FE institution. The fundamental principles underpinning a professional learning community (PLC) are used in the development of the intervention so teachers collaboratively engage as co-professionals as they introduce and implement the interventions. The Further Education and Training (FET) strategy has quality provision as one of its five strategic goals. The rationale for carrying out this research is to generate empirical research in the FE sector in Ireland in relation to teaching and learning practices and processes. What happens to learning (for students and teachers), teaching practice, professional engagement and collaborative teaching when we use a specific teaching and learning focused intervention in an FE class? How does it contribute to and inform the strategic goal of quality provision in FET? It is a critical time in the history of FE in Ireland to create such empirical research as it will help deepen understanding and knowledge on quality teaching and learning processes within the sector. The presentation concentrates on the data collection and initial collation of findings. Lessons learned will be shared as well as the significant and emergent findings at this stage of the research journey.

Niall Mac Uidhilin: Hook line and thinker: An exploratory pilot study of video hooks in the classroom

The notion of "orchestration" to describe the management of classroom activities has been developed by a number of scholars in recent years. This metaphor emphasises the central role of the teacher in the real-time management of classroom activities (parallels with the role of a conductor are often drawn). Unlike its musical counterpart, classroom orchestration requires an intrinsic level of flexibility within the 'score' whereby the teacher has the flexibility to reinterpret and change it on the fly.

Dillenbourg (2015) has recently proposed a graphical notation to illustrate the orchestration of learning activities and to support their design. These orchestration graphs illustrate time on the X-axis and planes of social interaction on the Y-axis. These planes can occur at individual, group and class-wide levels within the school and at wider level such as the community, and the world (particularly within technology-supported activities). This presentation will illustrate the use of orchestration graphs in the context of modelling technology-supported intergenerational activities in primary schools in the Gaeltacht but should also show their utility to the design of pedagogical activities in general.

Michael McNamara: Exploring the Impact of Standardised Assessment on Children with Special Educational Needs: Key Actor Perspectives

My doctoral research aims to explore the impact of standardised assessment within the Irish primary school context. This study, which is qualitative in nature, has been expressly constructed to collect and analyse the perspectives of key actors in this field, with a two tiered social survey methodology being employed to achieve this aim. Here participants, primarily consisting of primary school teachers and principals in Galway city and county, have been invited to complete an anonymous online qualitative questionnaire to collect as broad a range of perspectives relating to standardised assessment as is practically possible. Following this, a sub-section of these participants are then being interviewed to delve deeper into evident areas of interest arising from the careful analysis of the questionnaire data. Importantly, it is also proposed to undertake 'Expert interviews' with a Department of Education and Skills inspector, a National Council for Curriculum and Assessment executive, a standardised test creator and a third level lecturer in this field. This multi-perspective approach ensures a holistic examination of the topic and will consequently impact positively upon the validity and generalisability of the research findings.

In this presentation I will focus on the data, which has been collected and analysed to date relating to children with special educational needs, and how standardised assessment impacts upon this cohort in particular. Perspectives in this regard, as obtained from the online qualitative questionnaire instrument, highlight the apparent disparity that exists when children with special educational, social and/or emotional needs are administered assessments, which have been constructed for a 'standardised' population. This inconsistency has resulted in many questionable features and practices within the primary school education system that have not only served to demoralise these children, but have also perpetuated the devaluation of individualism within this education system on a larger scale.

Sally McHugh: Innovation in Heritage Education: Towards a synthesis of Formal and Informal Learning

This interdisciplinary research seeks to determine if the connection between primary school children's engagement with cultural heritage in the formal classroom and in casual informal learning environments such as museums can be enhanced through combining constructionist, user-friendly technologies with evolving creative designs of learning.

The methodology employed in this research includes Design-based Research, ethnographic, and qualitative methods, and is informed by the theoretical perspectives of Dewey, Vygotsky, Bruner, Robinson, and Csikszentmihalyi.

This presentation gives an overview of the ten-week pilot study presently being conducted. The pilot study is exploring the use of Minecraft and Digital Storytelling to actively engage children with their local cultural heritage. An online private learning space has been designed to support the children's learning and to link the formal and informal settings of school, museum, and home.

A Galway city primary school is participating in this TEChE (Technologyenhanced cultural heritage education) programme. Twenty-two 6th class children have been introduced to the archaeology and history of medieval Galway on a guided walking tour, have worked in teams to build medieval Galway in Minecraft, have collaborated on creating their digital story and will record their script/voiceovers in a recording studio in April. Pre and post questionnaires, observations, and both researcher and child reflections are presently forming the data set with a group interview to be conducted after programme ends. Data gathered to date is currently being analysed and initial findings and emerging themes will be presented and discussed. Improvements and changes to the pilot will be put in place before the next intervention, which is scheduled for the Galway City Museum in the summer months.

Gary McConway: The teaching of Enterprise in Irish Second Level Schools: an analysis of the Antecedent and Contextual Factors which deliver Success in the Classroom and Profits all...

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 specifications. However the delivery of these enterprise programmes in second level schools remains ad hoc and sporadic. This presentation will focus on the key emergent issues from these reports and how participant schools may be selected for the data collection stage.

Measuring the success of enterprise education remains problematic due to the nature of the content and the lack of specific certification at second level. Individual 'Champion' schools appear to excel in the development of enterprise education and earn a reputation for entrepreneurial skill at national level through their success in associated competitions.

Pockets of excellence do exist within the second level system, but what factors be they antecedent or contextual facilitate this phenomenon. 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, what particular factors predispose a teacher, a school or community to develop a pocket of excellence within the field.

Using purposeful sampling and qualitative research methods, this project will seek to initiate a discourse surrounding the area of enterprise at second level. It will analyse the elements for success as evidenced in selected 'champion' second level schools while engaging with all the relevant stakeholders.

A focus for this project is to develop a national framework whereby the explicit skill development associated with enterprise education will become aligned with entrepreneurial skill and embedded across all disciplines based upon the key factors identified in the research. The overarching aim of this project is to ensure that the teaching of enterprise at second level is concerned with learning 'for' enterprise, learning 'through' enterprise as well as learning 'about' enterprise.

Aoife O'Brien: Examining difficulties in Initial Algebra in the Irish context

This research aims to investigate the algebraic under-performance of second year post-primary students in Ireland. The purpose of this research is to profile and identify students who struggle with algebra and are therefore more at risk of poor performance in the subject of mathematics overall. As a result, the intention is to identify key areas of algebra with which students struggle and to develop and implement an appropriate intervention to help improve students' knowledge and ability in algebra. To this end a diagnostic test for algebra is being developed to profile and identify students who are struggling with algebra, which will be aligned with the Irish mathematics syllabus at Junior Cycle. A review of the literature has been undertaken and key content areas required for learning algebra identified. An in-depth review of the key content areas required for competence in initial algebra facilitates the development of a test instrument to evaluate students' knowledge and skills. Both procedural and conceptual types of knowledge are crucial for student learning in algebra. Difficulties and misconceptions in one area can lead to problems in the other, thus hindering a student's progress in algebra. Identified prerequisite content areas include fractions, the equality sign and proportional reasoning, amongst others. This presentation will outline the common misconceptions held by students in each content area and the consequent development of appropriate test items for the diagnostic test, some of which have multiple choice responses. Multiple choice questioning provides the opportunity to use significant and common student misconceptions as the options. On the basis of student responses, the aim will be to identify trends across students and thus plan an intervention based on the conceptual errors that appear.

Annelie Eberhardt: Teachers Enquiring about their Classrooms: A French Teacher's Narration

My doctorate focuses on the Continuous Professional Development (CPD) of secondary school teachers of modern languages. Both, the partaking teachers and myself, undertook action research and looked at several issues sparking a collaborative critical enquiry. While teachers started to enquire about their teaching to improve their students' listening or reading skills, or to make their classrooms more holistic and student-centred, my cycle concentrated on *How can I best support modern language teachers in becoming researchers of their classrooms?*

While in year two of my PhD I gathered data (semi-structured interviews, observations, online questionnaires, reflective journals, focus groups, field notes) year three was/is dedicated to the analysis of the data. It is important to point out that this action research study is guided by a pragmatist-participatory philosophy. As a pragmatist, I not only pose questions about reality but also look at consequences from research, which leads to new questions. A participatory worldview adds features of collaboration, empowerment and dialogue. Both paradigms are crucial to this qualitative study as they enforce iteration, transformation and the creation of unique knowledge.

Tools for data analysis are also picked pragmatically. I am using strategies of the Grounded Theory Method (GTM) with parts of my research findings written up as stories. Using narration as a vehicle, gives participants of my study a voice, but also stresses verisimilitude. There is no one truth, but a moment in a teacher's life captured. During the presentation, I will focus on one teacher narration in order to i) demonstrate the route of data analysis with GTM and ii) showcase first emerging theories stemming from this narration.