

Book of Workshop Abstracts

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Workshop 1

Durham College's Global Classroom

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Durham College's Global Classroom

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"We may live in different countries, practice different religions, follow different ways of life, but we are all affected by the planet we live on and we all share its resources and its fate."

Lindsay Unwin, Student, Durham College

"Understanding the big picture helps us to deal with local things better."

Jason Martin, Student, Durham College

For the past three years, Canada's Durham College has been holding a series of "global classes" that have proven very successful with students. Classes from three countries and a guest "global thinker" from a fourth are connected in a live face-to-face virtual meeting room. Students interact with a guest who might be an industry expert or producer one week, or researcher or author the next, and they have the chance to meet peers from varied backgrounds, share materials, collaborate, and learn from one another. These classes and their website have been gaining attention from educators worldwide, and there are now 42 colleges, universities, and guests from 17 countries who are part of the global class network.

The paper for the Dublin symposium will look at why the global class is succeeding and the benefits this new educational model has for educators who are seeking a more globally engaged experience for their students that makes use of digital technologies with a dynamic and inspiring interactive approach. A wider application of the global class model will also be explored in which the model will be assessed in terms of its benefits for students and professors in diverse faculties, programs, and academic institutions around the world. This will be examined through a plan that Durham College is considering to build a permanent state-of-the-art "global classroom" on its campus.

The global classroom would be humanity's classroom, a place where any student in the world through accessible technology would have the opportunity to interact with their peers and with guest teachers explore the big basic questions – power, evolution, family, government, religion, science, technology, complexity, freedom, corruption, space exploration – questions shared by all people on Earth. The classroom would have a practical dimension as well. Paramedic students in Canada could hold workshops with their peers in Israel and Nigeria, culinary or engineering students in Norway could collaborate with their peers in Hong Kong and Peru. An English or Chinese professor in his or her country could teach their languages to students from three different countries at the same time. This kind of intensified global interaction and collective learning is becoming possible because of

developments in high-definition cloud-based video conferencing that allows for more accessible and affordable connections between multiple locations in different parts of the world. The paper will look at the potential for the global classroom to become the heart of a new institute dedicated to the study of humanity and the planet as one whole. The institute could be a global hub, home to global classes, international programs, courses, events, labs, and so forth. Perhaps it might be named after the Canadian astronaut, Chris Hadfield, who recently captured the world's imagination with his daily posts and videos from the International Space Station.

In his landmark history of the world, Professor William McNeill wrote, “Men some centuries from now will surely look back upon our time as a golden age of unparalleled technical, intellectual, institutional, and perhaps even of artistic creativity. Life in [ancient] Athens, in Confucius's China, and in Mohammed's Arabia was violent, risky, and uncertain; hopes struggled with fears; greatness teetered perilously on the brim of disaster. We belong in this high company and should count ourselves fortunate to live in one of the great ages of the world.”

These words, written 51 years ago, remain even more relevant today. To be a student in 2014 is to grow up at a time that might be considered a turning point in history. We have entered a new millennium. Human societies are converging as never before. People around the world are regularly faced with changes from advances in science and engineering. Young people are living in a sophisticated globalized culture and we must be prepared to reinvent our classroom models and learning institutes so they have the tools for a complex interdependent world that demands critical thinking, creativity, resilience, and most of all, a worldview built on an understanding of diversity, shared problems, and the consequences of human progress.

To learn more about the global class, please go theglobalclass.org. A talk has also been given about the class, which can be viewed on YouTube at [TEDx Global Class](https://www.youtube.com/watch?v=TEDxGlobalClass).

Workshop 3 - **CANCELLED**

Creating the Entrepreneurial HEI through Engagement – Lessons from ACE

Bridget Kerrigan, Campus Entrepreneurship Educators Network

Creating the Entrepreneurial HEI through Engagement – Lessons from ACE

Bridget Kerrigan,

Project Manager, CEEN (Campus Entrepreneurship Educators Network) & representatives from CEEN HEI partners (DkIT, DCU, CIT, IADT and IT Sligo)

This thematic discussion workshop will share lessons, through a case study format, from an initiative to embed entrepreneurship within the Irish HEI curriculum, through the government funded initiative ACE (**Accelerating Campus Entrepreneurship**).

ACE was an 8-partner consortium established to create the *entrepreneurial graduate*. ACE was managed and delivered on cross-institutional and cross-disciplinary basis, which presented a highly strategic approach to embedding entrepreneurship education into undergraduate and postgraduate non-business programmes.

ACE came to an end in June 2014, at which point it re-launched as CEEN (Campus Entrepreneurship Enterprise Network) representing a departure from an eight-member consortium to a national network, accessible to any Irish HEI wishing to participate.

Further information about CEEN can be found on the CEEN website and online repository at www.ceen.ie, which includes a detailed description of recent ACE and current CEEN initiatives.

The **format** will be a two hour highly interactive workshop, broken into four 30 minute topic areas; introduced by a 15 minute Powerpoint presentation followed by 15 minute group discussions. CEEN partner HEIs will collaborate on presentations and lead discussions.

Topics to be covered will focus on the theme of ‘engagement’ as a means of creating the entrepreneurial HEI:

- **Leadership Engagement**
 - National policy drivers that challenge HEIs to become more entrepreneurial in their approaches and experiences from CEEN partner HEIs.
- **Educator Engagement:**
 - Embedding entrepreneurial learning in non-business programmes, including lessons from CEEN’s *National Entrepreneurship Educators Programme*
- **Student Engagement:**
 - The value of non-curricular entrepreneurial learning, including Student Enterprise Societies, informed by CEEN’s *Engaged Student Project*
- **Enterprise Engagement**

- Engaging enterprise as a learning provider in the HEI curriculum, informed by *Enterprise Engagement in Entrepreneurship Education (EEE) Pathways and Supports Project*

Workshop Outcomes:

At the end of the workshop, participants will have gained:

1. An **understanding** of the latest education and entrepreneurship policy developments, as they impact on entrepreneurship teaching and learning;
2. **Knowledge** of practical strategies to engage different campus stakeholders in entrepreneurial teaching and learning;
3. **Knowledge** of how to access entrepreneurial teaching and learning supports and resources.

Workshop 4

Wiki'd Transformations: Technology Supporting Collaborative Learning

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Wiki'd Transformations: Technology Supporting Collaborative Learning

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Abstract

This paper examines the uses of wikis in teaching in higher education. It was developed in support of a workshop offered at the Higher Education in Transformation conference in Dublin, Ireland, in March, 2015. The paper describes one author's use of a wiki over a period of five years to support graduate students in their study of principles of learning, reviews some of the literature on educational applications of wikis and suggests directions for future research.

Introduction

In the autumn of 2010, at the University of Ontario Institute of Technology, one of the authors (Hunter) began teaching a graduate course entitled "Principles of Learning" (PoL). Though learning theory had at one time been one of his "bread and butter" courses, he had spent the previous 20 years focused on the use of technology in teaching and in a variety of administrative roles. His first thought was that it would be like riding a bicycle—after all, the course description called for a focus on classical learning theory so his past experience and old teaching materials should have made it fairly easy for him to get caught up. He could not have been more mistaken.

Not only were his old teaching materials in either print or stored on undecipherable media using defunct software, but it quickly became apparent that current thinking about learning had changed dramatically. Work in cognitive science, constructivist approaches to teaching, neuroplasticity, and learning technologies had radically changed the field. Hunter had a lot of reading and a lot of thinking to do and he had an obligation (as part of his employment contract) to make effective use of technology in his teaching.

An intriguing array of new technologies was available—blogs, personal web pages, video streaming, new presentation tools and others. Though relatively new, all of these options seemed to be well-used by others in his department and his thoughts turned to emerging social media. He was convinced that FaceBook was too much of a personal tool and that the 140 character limit of Twitter made it unsuited for academic work. Like nearly anyone with an interest in educational technology, he had used Wikipedia and even made a couple of small contributions, but he was uncertain about whether the technical demands would be too much to ask students to master in a one

semester course that was not focused on technology. Looking more closely, he found himself considering MediaWiki and thinking about how its markup language reminded him of old debates he used to have with colleagues about whether an understanding of HTML was necessary for educators building personal home pages. Of course, long term it seemed clear that web authoring software would provide all the tools one needed even for dynamic web pages, he believed that there was merit in authors' having the capability of reading at least some of the code behind their creations. Prior experience showed that students could learn basic HTML relatively quickly with just a short demonstration and access to some online support. That experience convinced him that the technical components of creating a wiki should be manageable for his students.

Of course, the important question was not whether students could manage the technology, but whether using the technology would contribute meaningfully to their learning. For Hunter's course, the answer seemed to be a clear "yes" because

- Creating a scholarly wiki requires academic writing
- The research on computer-supported collaborative learning suggested that the kind of high level engagement demanded by writing for the wiki would enhance learning
- Building the wiki would enable both the students and the instructor to stay abreast of a rapidly changing field
- The content of the wiki would demand more work than could be done in one term so it would increasingly serve as a resource in its own right and
- The public nature of the work and Hunter's expectations regarding the level of scholarship in the students' wiki contributions should encourage the students to develop and use high levels of critical skills.

Since there was little in the way of research on wikis in teaching at that point in time, there was not much guidance in the literature about how best to use a wiki, but that also meant Hunter could feel confident that he was making a novel use of technology in the course.

Of course, that situation has changed and there is now an emerging literature on the use of wikis in teaching. In what follows, we will first describe Hunter's practice as it emerged over the past five years and will then conclude with a look at the existing literature.

The Principles of Learning Wiki

A variety of wiki software options existed in 2010 and there are more now. A key question for anyone wanting to use a wiki should be the purpose of the wiki in terms of student use and activity. Phillipson (2013) has developed a taxonomy of uses (which we will describe later), but in 2010, Hunter knew only that he wanted students to write in the wiki both individually and collaboratively and that he wanted them to be motivated to put together a collection of resources that would be of potential value to future students in the course. The kind of wiki found within learning management systems like Blackboard would permit the collaboration he wanted, but limitation of access to course members would make it difficult or impossible to enable development over several terms. MediaWiki seemed to meet these needs and had the merit of being well-tested as the software used to build

Wikipedia. Fortunately, the university had a server with MediaWiki installed and some technical support committed to it. For more information on MediaWiki and its uses see Ebersbach, Glaser & Heigl (2006) or Cummings & Barton (2008).

Part of the challenge of incorporating a wiki was structuring a course assignment that would make the instructor's expectations clear, but that also raised the difficult question of how to evaluate work that might vary greatly from one student to another and that would be submitted (to the wiki) throughout the term as students completed the work. It was also the case that students entry skills with markup languages (and even computer technology more generally) would vary markedly in ways that would impact their ability to make contributions to the wiki (but that not be allowed to impact on their course mark). Hunter's solution was to have the students integrate their contributions in an assignment that would be a summary and analysis of their work over the term. He called it a "wikiography." The assignment has evolved with time and experience, but in the fall of 2010, it was:

Your assignment is to submit a brief personal wikiography summarizing, explaining and assessing your contributions to the course Wiki.

An average contribution could consist of

- *two substantial contributions to entries about a learning theory (behaviorism, humanistic psychology, connectivism, etc.),*
- *two original entries about a learning theorist or researcher, and*
- *three additions, revisions or other major edits to entries made by others*

The personal wikiography is meant to document your contributions to the course Wiki in terms of quantity and to make a case for the quality of your contributions.

Indicators of quality include

- *clear comprehensible prose*
- *accuracy of information*
- *originality*
- *inclusion of appropriate internal links*
- *inclusion of useful external links*
- *documentation of sources (and use of high quality sources, e.g., primary source material, refereed journal articles, and self-constructed illustrations that clarify concepts).*

Your individual entries to the course Wiki will not be marked (only the wikiography will be marked); however, you may include links to course Wiki entries in the wikiography (and other links if they help to make your case).

Please note that Wiki contributions are an ongoing responsibility. Part of the case for your contribution should include a review of the timeframe in which the contributions were made. Massive contributions in the last week, no matter how good, fail to show engagement in the social constructivist activity of building the course Wiki. The course Wiki is both a collective project and a kind of public scholarship. If you are very active in the Wiki in the early part of the course, you may wish to submit your wikiography well before the end of November (I encourage you to do so), but it should indicate your plan for continued participation. Indeed, I intend to use this Wiki with future sections and I invite and encourage your continued participation in the community after course completion.

Hunter also developed a rubric for the marking of the wikiography, but there is not sufficient space for it here. Students found the assignment challenging and even frustrating at times (especially if they were technology-challenged), but they also reported that they felt great pride in seeing their work in this format and in the feeling that their work might be of value to future students. Later, he came to understand what he had done with the wiki assignment was an example of what Mezirow (1997) called a disorienting dilemma—an experience that cause adult learners to open themselves up to new learning (Hunter, 2012).

In that first term, the students elected to make their entries to four categories: Key Definitions, Theories, Theorists, and Learning Technologies. At present, the main page shows a total of 28 different categories to which students may contribute (see http://wikis.apa.uoit.ca/wikis/EDUC5001-SEP10/index.php/Main_Page).

Students continue to say that the assignment challenges them, but it is now rare for the technology to be difficult for them. This is partly due to stronger entry skills on the part of the class members and partly due to the fact that Hunter has created a self-help guide to get them started¹. Some students have elected to include copies of their course assignments on the “Course Projects and Papers” page available on the main page (link above).

The Principles of Learning wiki is still in use and the quality seems to improve as successive classes build on the work of their predecessors, but, despite the placid sailboat image on the main page, it has not all been smooth sailing. In the fall of 2011, the wiki was discovered by spammers and a host of inappropriate pages (mainly commercial advertisements for pharmaceuticals) began to appear. Sometimes these pages replaced student pages and it became necessary to delete all of these contributions and to restrict posting to class members. The next summer, someone in Information Technology Services noticed that the wiki had not been accessed since the end of the academic year and removed the wiki. Fortunately, it could be restored from routine backups, but it was worrisome for a while. Each term, students think they will never find something to contribute, but in the end, most have more than they can use. The samples of wikiographies that students have posted to the site provide elaboration on how some specific individuals moved from mystified tyro to masterful contributor.

Research on educational uses of wikis

The success of Wikipedia is often cited as a reason for the growth of interest in using wikis in teaching and learning. However, Cummings & Barton (2008) pointed out that wikis began as a tool for programmers—an adaptation of an electronic mailing list that allowed participants to modify past posts so that information was continuously updated and redundant posting of the same information could be eliminated or at least reduced. In this context, the final outcome would normally be a working piece of software created through online collaboration. Wikipedia, which came later, did not have such a clear and testable outcome. That lack of a definitive final product may have contributed to it becoming an ever-changing global knowledge management project that grew at an astounding rate. Cummings (2008) provided an engaging history of the early growth of Wikipedia:

¹ Copies of the self-help guide, the wikiography rubric, and other course materials can be found at <http://padlet.com/BillHunter/learningprinciples>

For the academy at large, the significance of Wikipedia is roughly equivalent to that which the Heisenberg uncertainty principle had in the sciences in the 1920s—stating what is not possible rather than what is. It is no longer possible to plan, tax, and budget for universities as if their model of knowledge creation is the only epistemological path. No matter how improbable it might seem that a Web page that anyone can edit would lead to valuable knowledge, Wikipedia makes clear that there is now another model for knowledge creation. (Cummings, p. 2)

Early writing about educational wikis tended to be descriptions of what a wiki was and how to use one in teaching, perhaps with one or more examples (e.g., Schwartz, L., Clark, S. Cossarin, M. & Rudolph, J., 2004; Ebersbach, Glaser & Heigl, 2006). Parker & Chao (2007) summarised much of this early research, indicated a rich variety of emerging educational applications of wikis, and concluded “Educational institutions can offer immense value to their students by familiarizing them with the simple technologies that make collaborative networks possible.” (p. 67)

Though Wikipedia provided a model for using wiki software to create a learning resource, some instructors found novel ways to put the tool to use. Looking at the diversity of applications, Phillipson (2008) developed a taxonomy of the classroom uses of wikis which we describe below (descriptions and examples, unless otherwise stated, are ours).

Resource wikis

Intended to be an “assemblage of a collaborative knowledge base” (Phillipson, 2008, p. 21), the resource wiki lends itself to applications in a wide array of disciplines and may be limited to one class or extended to include several classes either concurrently (e.g., if an instructor or group of instructors is teaching multiple sections of the same course or related courses) or consecutively (as the course or courses are repeated over time). Wikipedia, though not specific to a class, is probably the best known prototype of the resource wiki. Bowman (2013) reported on a recent use of a resource wiki in a university juvenile justice course.

Presentation wikis

Intended primarily as a tool for sharing information within a class, the presentation wiki may involve collaboration or it may consist of a collection of individual contributions. Presentation wikis may make more generous use of the non-text features of the wiki software (e.g., the insertion of image or sound files). “Presentation” might mean the wiki is used to accompany an oral delivery or it may mean that the wiki itself is the delivery vehicle. In either case, the information developed in the presentation wiki is generally presented to an audience that includes more than the course instructor. Makkonen, Siakas, & Vaidya. (2011) made use of a presentation wiki in which students presented and critiqued one another’s screen capture videos. In a kind of meta-wiki, Maine (2013) has used a presentation wiki to explain wikis.

Gateway wikis

Phillipson (2008) claimed the gateway wiki is more speculation than reality and that he could not really identify a good complete example. The basic idea is that gateway wikis are essentially meant to support student/participant engagement with and analysis of some body of information, for example a data set. Gateway wikis therefore are less self-contained and are meant to support out-of-wiki work.

Phillipson's focus seems to be on science applications, but the Tolkien Gateway (http://tolkiengateway.net/wiki/Main_Page) seems to be an interesting gateway application in a literary context.

Simulation wikis

Simulation wikis take advantage of the fundamental hyperlink structure (which enables both internal and external links in wiki entries) to create environments in which participants make choices that lead through a body of information in a way that is reminiscent of the much earlier technology of "choose your own adventure books." Phillipson's best example seems to be the holocaust wiki project, but links to the project no longer seemed active at the time this article was written. Phillipson's description helps to make clear how such a wiki would function and some vestiges of the project can be found at <http://www.ahistoryteacher.com/necc2006/>. He also sees potential in WriteHere as a kind of simulation tool for supporting the exploration and development of writing skills.

(<http://web.archive.org/web/20060308104441/http://www.writehere.net/moin.cgi/StartHere>)

Illuminated wikis

Like a gateway wiki, an illuminated wiki seeks to provide an environment that supports critical analysis. To clarify, Phillipson (2008) said the illuminated wiki

...focuses on the act of explication; it is devoted to close reading and communal mapping. This focus on a particular object of analysis may remind us of the gateway wiki. But the illuminated wiki is crucially different from its gateway cousin insofar as it incorporates the subject of study into the wiki itself and, in so doing, alters or transforms the source material. (p. 36)

Phillipson's own work using a wiki to facilitate collaborative interpretations of poetry serves as his prime example of an illuminated wiki, which he says is a type of wiki in which users are more likely to make extensive use of hyperlinks in their contributions.

The value of such a taxonomy is that it may encourage thought about the different ways in which wikis can be applied to different kinds of learning environments. The PoL wiki is clearly intended primarily as a resource wiki, but Hunter's intention in using it had much more to do with engaging the students in collaborative discourse about learning principles than in producing an authoritative information source. However, PoL students were actively encouraged to make rich use of both internal and external links in that would make hyperlinked journeys through the content quite feasible (as in a gateway wiki). They were also encouraged to feel free to use the wiki space as a vehicle for sharing their other course writing or projects (as in a presentation wiki). We think this kind of "drift" across taxonomic boundaries is inevitable and that it may often be constructive.

While there has been considerable growth in the amount being written about wikis in teaching and learning, it is still the case that many authors feel obligated to explain what a wiki is and that much of the research is limited to describing a particular project. Other work focuses on student perceptions regarding their successes and challenges in using the wiki or their feelings about collaborative writing.

Examples of wikis in education

Concerns about the challenges of wiki use notwithstanding, the literature does seem to reflect increased educational use of wikis in a wide range of subject areas and

at all age levels. In postsecondary or tertiary education environments, for example, wikis are being used in

Computer science

Tsai, Li, Elston & Chen (2011) had computer science students participate in a case study project following the design below.



From Tsai, Li, Elston & Chen (2011, p 117)

In this carefully documented exploration of the potential of wikis as collaborative tools, the researchers found high levels of student satisfaction with the wiki and good levels of achievement in the course. Perhaps of greatest value is their ten-stage detailed planning and implementation strategy.

Software engineering

Minocha & Thomas (2007) used the wiki built into the Moodle learning management system to engage students in a simulation of the ways in which engineers working for major software companies carry out their responsibilities in the area of requirements engineering and found that the students were overwhelmingly positive in their belief that the use of the wiki had effectively supported collaboration and contributed positively to their understanding of the course content.

Teacher education

Working with a group of students with good backgrounds in computing and Web 2.0 technologies, Hadjerrouit (2014) sought to document and assess levels of collaborative writing in wikis (using a modification of Pfeil, Zaphiris & Ang; 2006). His analysis not only indicated both successes and areas of challenge, but also made recommendations for improving future student collaboration. In particular, he indicated that teachers have a variety of responsibilities if wikis are to be used well by their students:

The role of the teacher is to create an atmosphere of trust and confidence that stimulates students to change peers' contributions and modify content created by others for the benefit of the group. Teachers should also provide specific guidance to assist students in the writing and peer-editing process. They should make students aware of the difference between cooperation and collaboration, and what genuine collaborative writing means. They should provide strategies that apply to large and small groups, and explain the various roles for the participants, as well as synthesize multiple points of views when discussing a wiki task. (Hadjerrouit, 2014, p.311)

Foreign language teaching/ESL

After describing a variety of possible applications of wikis to language learning, Wiseman & Belknap (2013) point to the social nature of wiki collaborations and conclude "These social events make second language reading and writing courses the meaning-filled experience that is necessary for learning to occur." (p. 369) Rott & Weber (2013), recognising the challenges that students face in learning with a wiki, built a highly structured wiki and provided elaborate scaffolding to assist students in building a wiki on German music. Though they recognised the limits of their

reflective and observational method, they conclude “In fact, each step of the preparatory framework fosters the development of metacognitive learning skills regarding the processes of writing, giving feedback, editing one’s own and others’ texts, as well as of conducting research in the target language.” (Rott & Weber, 2013, p. 196)

Mathematics

Stoykova & Mitkova (2011) used wiki software to create an extensive list of pre-calculus terminology and to use statistical techniques to create concordances that would enable study of the semantic nuances of different uses of the words. Stahl, Ou, Weusijana, Çakir & Weimar (2010) used a wiki as part of a set of technological tools for fostering communication about mathematics. While other tools provided space for individual or group commentary, the wiki was used to provide “an asynchronous *community space* in which the work of all groups is coordinated, commented upon and perhaps summarized.” (p. 119)

Science

We have emphasised the conclusions of several researchers regarding the need for careful planning and supportive instructional practices as part of a wiki-based teaching strategy. Cole (2009) addressed this matter from the negative side, reporting the extent to which third year science students did not participate in the building of a course wiki. She concluded that “The purpose of this paper, however, has been to highlight to the educational community the negative consequences experienced when the integration of a Wiki into existing teaching formats is poorly designed and supported.” Essentially, the difficulties resulted from technology challenges and the absence of any motivation (such as marks) for posting. On the other hand, there has been an entire educational movement focused on the use of wikis to make science data available to larger groups of people—the Open Science Notebook Project. A good example is the Usefulchem Notebook Project (<http://usefulchem.wikispaces.com/>) which provides access to dozens of chemistry projects. Perhaps the best way to locate more Open Science Notebooks projects is through Wikipedia (http://en.wikipedia.org/wiki/Open_Notebook_Science).

Further examples can be found in almost any discipline and it is likely that different strategies for wiki use would be better suited to some disciplines than to others, but at this point, any recommendations of that sort are purely speculative and instructors would do well to consider the possibility that applications in any discipline might suggest possibilities for their own practices.

Further studies

Working with a group of students with good backgrounds in computing and Web 2.0 technologies, Hadjerrouit (2012) sought to document and assess levels of collaborative writing in wikis. He classified student contributions using a modified version of the 13 categories of student wiki contribution (e.g., addition, deletion, fix, clarification) proposed by Pfeil et al. (2006). Hadjerrouit’s analysis not only indicated both successes and areas of challenge, but also made recommendations for improving future student collaboration. In particular, he indicated that teachers have a variety of responsibilities if wikis are to be used well by their students:

The role of the teacher is to create an atmosphere of trust and confidence that stimulates students to change peers’ contributions and modify content created by others for the benefit of the group. Teachers should also provide specific

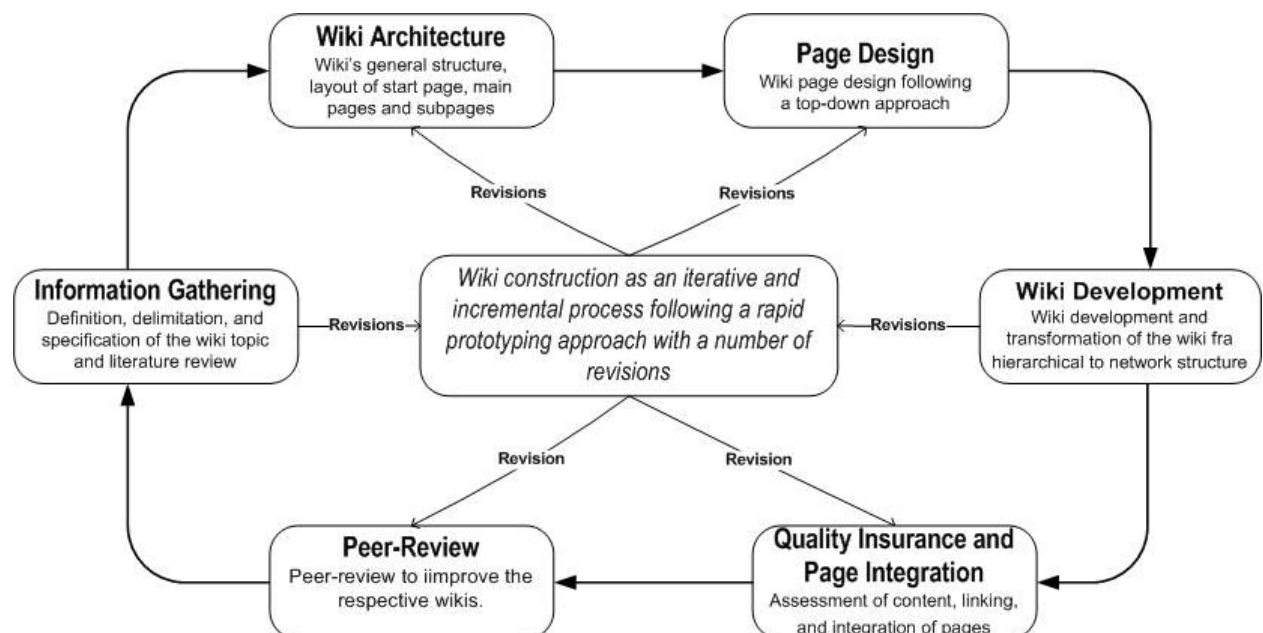
guidance to assist students in the writing and peer-editing process. They should make students aware of the difference between cooperation and collaboration, and what genuine collaborative writing means. They should provide strategies that apply to large and small groups, and explain the various roles for the participants, as well as synthesize multiple points of views when discussing a wiki task. (Hadjerrouit, 2012, p. 311)

Meishar-Tal & Gorsky (2010) studied the wiki collaboration of graduate students using the full 13 categories developed by Pfeil, et al. (2006). Their findings generally confirmed the conclusions reached in qualitative reports by other researchers—e.g., a high number of students add new material to the wiki, but only a small number will delete contributions made by others. In general, students are reluctant to alter contributions made by others—a finding that questions the collaborative nature of the actual wiki work.

These concerns had earlier been addressed by Hadjerrouit (2011) when he concluded:

...wiki alone cannot make collaborative writing happen, and students do not automatically become more active, participate, and collaborate with others when they use wikis for educational purposes, as the research literature clearly reveals (Chao & Lo, 2009; Cole, 2009). Students' willingness and motivation to use wiki in a collaborative way is important but not sufficient to initiate true collaboration. To foster collaborative writing, participation, and active involvement in wiki development there is a need for a systematic approach to the development of wiki applications.” (Hadjerrouit, 2011, p. 432)

He went on to describe such a systematic approach as represented it in the graphic below:



Hadjerrouit (2011) p. 435

Even though there had been challenges, Hadjerrouit indicated that his students said the wiki applications were motivating and interesting. Nevertheless, most of his students realised that wikis alone cannot cover everything students need to learn.

Conclusion

It is often the case that research literature on the effectiveness of innovations in the use of educational technology lags far behind the applications. Sometimes it is the case that by the time the research appears, the software or innovation has become archaic as new technologies or new applications rapidly supplant existing practices. Wikis have proved to be more robust than many educational technologies and they seem now to present a particularly promising application for researchers to examine.

The taxonomy of wiki contributions developed by Pfeil et al. (2006) still provides a useful measure of students' wiki contributions and modifications of that taxonomy might well serve as more efficient and focused measures in specific disciplines or with specific types of wikis (as described by Phillipson (2008)). There would also be value in determining if some of Phillipson's types work better in some disciplines than in others.

We have seen that there is now some research that aims to increase actual collaborative work and to define the teaching behaviours that would support more active and more productive wiki collaboration. There would also be value in work that sought to determine if, given the opportunity, students continued to use (or contribute to) a wiki after course completion—and if they did, what conditions prompted them to do so.

For us, one of the more exciting possibilities would involve research on the use of wikis as a way of structuring collaborative interactions between students from different cultures, especially cultures in conflict. A substantial body of research has examined real life efforts to apply Allport's (1954) contact hypothesis and, more recently, some of that research has focused on technology-supported contact in curriculum-based school projects, including Ireland's Dissolving Boundaries project (<http://www.dissolvingboundaries.org/>) with its focus on improving communication between children in the Republic of Ireland and children in Northern Ireland. To date, such work has relied largely on email exchanges, discussion forums and the affordances in learning management systems (Austin & Hunter, 2013). Wikis provide educators a platform that is designed to host collaborative projects and to support work between distant learners and thus to build learning communities. The open environment of many wikis would make it relatively easy to conduct research on projects of this type.

However, even in the absence of convincing research on particular applications, it seems clear to us that wikis lend themselves to serving as convenient platforms for faculty to use as a way of encouraging student writing, sharing of ideas, and scholarly discussion—activities they would likely want to have them engaging in any case.

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Workshop 5

Shifting Perspectives:

The push and pull of advancing equity and embedding inclusive principles in academic culture

Cheryl Giraudy, Professor, Faculty of Design, OCAD University

Cathy Cappon, Accessibility Manager, Office of Diversity, Equity & Sustainability Initiatives,
OCAD University

Shifting perspectives: the push and pull of advancing equity and embedding inclusive principles in academic culture

Cheryl Giraudy, Professor, Faculty of Design, OCAD University

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Initiatives, OCAD University

Workshop Description

The Workshop offers an opportunity to share OCAD University's unique vision, and approach to respect diverse perspectives and practices within a creative and dynamic work and learning community. The discussion-based workshop will celebrate unique institutional approaches to defining 'universal design education' and provide examples of re-imagined curriculum in support of inclusive teaching.

The workshop will identify OCAD U principles for advancing equity within the context of new progressive accessibility-focused legislation, and demonstrate how values are embedded in policy, training, and curriculum. Approaches to fostering inclusion across academic culture, and examples of course-based projects with multi-disciplinary outcomes will demonstrate diverse learning opportunities, and rich interactions with internal and external communities.

Explaining challenges faced in defining barriers to inclusive learning, and identifying opportunities for mitigating them through policy and administration, offers an opportunity for participants to share various application tools, learned lessons, and best practices for advancing equity and inclusive community building.

Workshop 7

Creating Champions of Inclusion-Mainstreaming Universal Design into the Curriculum

Ger Craddock. Centre for Excellence in Universal Design. Dublin

John Gilligan. Dublin Institute of Technology

Enda Finn. Dundalk Institute of Technology. Dundalk,

Margaret Kinsella. Institute of Technology, Blanchardstown. Dublin

Universal Design for Education

Creating Champions of Inclusion-Mainstreaming Universal Design into the Curriculum

The Universal Design workshop is a collaborative presentation between CEUD, DIT, DKIT & ITB.

Ger Craddock. Centre for Excellence in Universal Design

John Gilligan. Kevin Street, Dublin Institute of Technology

Enda Finn. Dundalk Institute of Technology

Margaret Kinsella. Institute of Technology, Blanchardstown

What is Universal Design?

Universal Design (UD) is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

Structure of Workshop

Opening with *Introduction to Universal Design for Instruction* by Ger Craddock (CEUD) and followed by individual presentations from three partners outlining their experiences with embedding UD in the curriculum, incorporating case studies and prompting discussions of issues involved.

- John Gilligan (DIT)
- Enda Finn (DKIT)
- Margaret Kinsella (ITB)

Discussion gatherings are interactive, experiential opportunities to assist educators in the development of action plans for the exploration, integration and implementation of UDL.

Introduction to Universal Design for Instruction

Dr Ger Craddock

Dr Craddock will speak on the general principles of Universal Design for Instruction (UDI) and how they can positively impact service delivery in educational programmes.

UDI uses the principles of Universal Design to consider a holistic view of Instruction and impacts all aspects including Curriculum Design, Environmental Supports, Accessible Learning materials and the Learner Experience. Education like society

must embrace constant change. With the concept of life-long learning now at the core of educational philosophy, educational establishments must meet the demands on services from a diverse population of learners, across all age ranges and life experiences. UD is a key enabler for the creation of a society/communities that are more equal, inclusive and resilient in a dynamic and ever changing world. UD for Instruction considers how the principles of UD can be applied to programme delivery in education and how this ultimately benefits the Learner.

Dr. John Gilligan Dublin Institute of Technology

Universal Design in DIT ICT and Engineering Programs

DIT has been engaged for over 20 years in embedding topics around Universal Design and Assistive Technology into its ICT and engineering curricula. From bespoke AT and Universal design courses from CPD to Masters level, to individual course modules, DIT has embraced this subject domain on many levels.

Of especial importance is the mainstreaming of relevant inclusive topics across the entire spectrum of ICT curricula. For example WCAG guidelines are discussed in Web Design courses, Interoperability of devices in Operating systems courses and so on.

The origins of this work came from an emergence of common themes and requirements from related final year projects. There followed a realisation that this was a valuable and necessary part of the core skill and knowledge base of technical graduates. Inclusions should be part of their worldview from the start.

The evolution of programs which embody Universal Design and Assistive Technology has been an eventful and interesting one. The engagement of students on initiatives such as the Universal Design project in Product engineering has been exceptional, resulting in award winning innovative and imaginative work. This presentation outlines the issues and challenges of curriculum design which incorporates Universal Design and Assistive Technology and considers how this has enhanced our programs

Universal Design in Dundalk Computing Degree Programmes

Enda Finn Dundalk IT

Dundalk IT (DkIT) has been involved in an ambitious program to embed universal design as a core-learning outcome within its Level 8 Computing Degree programmes. The key instrument in this initiative is the development of new a Universal Design Project module, which all students must do in third year. Universal design principles have also been thematically embedded into current User Experience (UX) and design modules as well as within the final year Team Project modules. Such is the success of this particular initiative that DkIT students have been recent finalists in the National Universal Design Grand Challenge.

This presentation will consider the impact of embedding Universal Design into a modern ICT program and how this is reflected across various course outputs.

Universal Design in Institute of Technology, Blanchardstown (ITB) programmes

Margaret Kinsella (ITB)

ITB has successfully embedded modules in universal design in its IT programmes for example in its Creative Digital Media programmes. This presentation will reflect on the challenges involved and how the need to ‘make real’ and ‘make connections’ with universal design thinking within the module was a central tenet of the development process.

The approach chosen was to have input from universal design experts discussing and presenting the key issues. This development of the awareness of universal design thinking is extremely important, at individual student level, and the discussion will explore how this had a ripple effect on awareness and design throughout the course.

Workshop Participants will:

- Learn about and explore universal design concepts.
- Be able to apply universal design principles to developing or adapting educational programs.
- Access innovative tools for teaching and learning curriculum.
- Explore UD case studies for diverse student populations
- Explore first year experience UD case studies for student transitioning to 3rd level

Workshop 8

HEInnovate: a Framework and a Tool for Creation of Entrepreneurial Universities

Pat O'Donnell. TU4Dublin

John Jameson. Dublin Institute of Technology

[Anthony Paul Buckley, Dublin Institute of Technology](#)

HEInnovate: a Framework and a Tool for Creation of Entrepreneurial Universities

Pat O'Donnell. TU4Dublin

John Jameson. Dublin Institute of Technology

Anthony Paul Buckley, Dublin Institute of Technology

Objectives of Workshop:

- Raise awareness of the HEInnovate web portal
- Provide an opportunity for delegates to:
 -
 - **explore** the use of the HEInnovate self-assessment tool for entrepreneurial universities
 - **discuss** the relevance of the entrepreneurial university concept as described by the HEInnovate assessment headings and supporting material
 - **discuss** ways in which the tool and resources might be used to make an institution more entrepreneurial

Workshop Preparation

Delegates attending the workshop will be asked to complete a self-assessment of an institution with which they are familiar in advance of the workshop, as members of an online group created for the workshop.

The aggregated results will be used for illustrative and discussion purposes during the workshop. As the aggregation will be for a number of different institutions, assessments of, and comparisons between, individual institutions will not be available.

Workshop Format

- A brief introduction to the tool and the supporting literature.
- A review of the pillars using the sample results.
- Discussion in groups of the pillars and potential uses of the tool and portal.
- Sharing of ideas and panel discussion.

Workshop 9

Integration of Simulation into the Classroom to Support Competency-Based Learning

Brenda Gamble, Helene-Marie Goulding, Leslie Graham, Evelyn Moreau, Harmeet Nanner, and Rachit Desai. University of Ontario Institute of Technology and Durham College

Integration of Simulation into the Classroom to Support Competency-Based Learning

Brenda Gamble, Helene-Marie Goulding, Leslie Graham, Evelyn Moreau,
Harmeet Nanner, & Rachit Desai.
University of Ontario Institute of Technology and Durham College

Abstract

Healthcare systems continually evolve and strive to address a number of challenges through the implementation of new strategies and approaches. The delivery of healthcare is heavily reliant on a variety of healthcare professionals. Interprofessional practice (IPP) is seen as a key strategy for addressing the many challenges faced by healthcare professionals and healthcare systems, including, improving healthcare system performance and enhancing the quality of patient care (World Health Organization, 2010). The successful implementation of IPP is dependent upon changing the way healthcare professionals are educated and trained (Knebel & Greiner, 2003).

Educating healthcare professionals

Educational programs delivered in the Faculty of Health Sciences (FHSs) at the University of Ontario Institute of Technology in Ontario, Canada include kinesiology, medical laboratory sciences, nursing (in collaboration with Durham College) and public health. Program courses are delivered in a variety of formats including online, hybrid (partially on line and partially face to face) and traditional face-to-face classrooms. As well, the FHSs offers an on line degree completion program for diploma certified allied healthcare professionals. Our challenge was to create an interactive learning tool that can be used across programs and delivery formats for the acquisition of IPP competencies and to support Interprofessional education (IPE) in the classroom. IPE prepares learners for IPP (Carlisle, Cooper & Watkins, 2004) by reducing the barriers (e.g., professional cultural boundaries and stereotypes) to IPP (World Health Organization, 2013).

Training healthcare professionals has historically been based on an approach that supports silo-based education with both didactic classroom learning and clinical placement (Fagin & Garelick, 2004). It is now recognized that the students' learning experience extends beyond the traditional based lecture delivery to incorporate learning opportunities in the real world context in both the classroom (Svinivke & McKeachie, 2014) and during clinical training. There has also been a paradigm shift to competency-based education in healthcare, primarily to set benchmarks for quality and to assure professional proficiency (Scalese, Obeso & Issenberg, 2008). This paradigm shift requires a cultural transformation from structure- and process-based education to competency-based education (World Health Organization, 2010).

Interprofessional education (IPE) based on the introduction of IPP competencies is key to both this cultural transformation and the implementation of IPP. The Center for the Advancement of Interprofessional Education (2014) defines IPE as, "two or more professions learn with, from and about each other to improve

collaboration and the quality of care.” IPE learning is iterative and requires lifelong learning. IPE is therefore considered to be a fundamental curricular experience to enhance the expression of IPP during training and professional practice through competency-based education.

Enhancing IPE learning in the classroom

IPE requires the integration into the curricula of six IPP competencies; interprofessional communication, patient/client/family/community-centred care, role clarification, team functioning, collaborative leadership, and interprofessional conflict resolution. Table 1 provides a definition of each competency based on the work conducted by the Canadian Interprofessional Health Collaborative.

Table 1
Canadian Interprofessional Health Collaborative Competencies (CIHC, 2010, p. 24)

Competency domain	Competency statement
1. Interprofessional communication	Learners/practitioners from different professions communicate with each other in a collaborative, responsive and responsible manner
2. Patient/ client/ family/ community-centred care	Learners/practitioners seek out, integrate and value, as a partner, the input and the engagement of the patient/client/family/community in designing and implementing care/services
3. Role clarification	Learners/practitioners understand their own role and the roles of those in other professions, and use this knowledge appropriately to establish and achieve patient/client/family and community goals
4. Team functioning	Learners/practitioners understand the principles of teamwork dynamics and group/team processes to enable effective interprofessional collaboration.
5. Collaborative leadership	Learners/practitioners understand and can apply leadership principles that support a collaborative practice model.
6. Interprofessional conflict resolution	Learners/practitioners actively engage self and others, including the patient/client/family, in dealing effectively with interprofessional conflict

Following the framework developed by Charles, Bainbridge & Gilbert (2010), we have conceptualized IPE as a lifelong interactive learning activity involving three phases exposure, immersion and mastery. During the exposure phase students are introduced to IPP competencies in the classroom. Students learn with, from and about other healthcare professions in either the classroom or clinical placement during the immersion phase. The mastery phase involves the incorporation of IPP competencies into professional practice. Our goal was to develop an interactive IPE learning tool that can be used during the immersion phase in the classroom across all programs and delivery formats.

Simulation and IPE

Current literature proposes that as well as potentially offering solutions to curricula and economic pressures; simulation technologies have the capacity to empower learners in the ever-changing field of healthcare delivery (Ruiz, Mintzer & Leipzig, 2006). A variety of simulation tools exist for knowledge acquisition and

training of healthcare professionals (Tullmann, Shilling, Goeke, Wright & Littlewood, 2013). Task trainers are used for single skill development (e.g., intravenous injection of a needle). Desktop simulations using computer programs support an interactive learning experience for knowledge acquisition. Standardize patients and/or mannequin-based simulation are both ideal for interactive IPP learning.

In consultation with educators, practitioners, and students across the FHSs' programs, informed by the literature and real life experiences, we have identified and created IPP learning scenarios to incorporate into the curricula. Table 2 provides a brief overview of the learning scenarios and related IPP competencies.

Table 2. Learning scenarios for interprofessional education
(Gamble, Goulding, Graham & Moreau, 2015)

Learning Scenarios	IPP Competencies
A. Interaction between the physician and the laboratory is at times needed due to the complexity of laboratory testing. In specific circumstances laboratory professionals can act as a consultant for the physician. One of the strategies is to implement multidisciplinary rounds that include laboratory professional (Armstrong, Joutsikorhonen, & Lassila, 2011).	This is an example of learning with, from and about each other to improve collaboration and the quality of care
B. The mannequin/standardized patient is a small child who presents and has an infection. The specimen is collected and sent to the laboratory. An inappropriately collected sample and a series of communication errors results in the delay of the appropriate antimicrobial treatment for the patient. The patient experiences more complex problems prior to the physician receiving the laboratory results. This is a real case example of miss communication resulting in poor patient care (Kaelber & Bates, 2007).	A key barrier to interprofessional practice is communication
C. This example involves a patient who will not let the laboratory professional complete a point of care testing procedure and/or the withdrawal of blood. The patient insists that the doctor complete the task. The patient has just recently immigrated to Canada and views the doctor as the only trustworthy healthcare professional. The nurse and the laboratory professional explain to the patient that the emergency department recognizes and respects the unique roles of each professional and all work together to enhance patient outcomes.	This scenario would reflect trust and respect between healthcare professionals, and demonstrate the importance of understanding the role of other professionals, which is key to interprofessional practice.
D. Often times point of care testing (POCT) is used for rapid intervention. The patient has a low potassium level, which predisposes them to develop cardiac arrhythmias. Potassium turnaround times can take 30 to 60 minutes. POCT expedites the testing, allowing for the treatment of the electrolyte imbalances within minutes and avoids negative outcomes. Many observers believe that a high quality point of care program includes laboratory oversight. Coordination is required between the laboratory and the bedside professional for training, educational information, to develop a process for bedside professionals to follow if POCT's results do not match the patient's clinical condition, and for the monitoring of quality control compliance and operator performance levels (Di Serio, Antonelli, Trerotoli, Tampoia, Matarrese & Pansini, 2003). Additionally, understanding the scope of practice for each member of the interprofessional team can mitigate conflict situations. Role clarity can enhance team performance.	This would be an example of team function, patient centred care, conflict resolution and role clarification.

Each one of the scenarios includes healthcare professions from different disciplines as well as the patient and potentially the patient's family members or advocate. For example, Scenario C includes healthcare professionals from nursing, medical laboratory science, a medical translator, the patient and the patient's spouse. Embedded in each scenario are learning opportunities for the acquisition of IPP competencies listed in Table 1. Building on this work, we have developed and produced simulated models of IPP (SMIPPs) to use as an IPE interactive educational tool in face-to-face, hybrid and online classrooms across healthcare professional programs in the FHSs at UOIT and Durham College. The SMIPPs were produced in the Nursing program's simulation room (i.e., fully equipped simulated hospital room and bed) with the assistance of the UOIT's Learning and Teaching Centre's video and technical support services. FHSs' students were recruited as actors in the simulations to portray the different healthcare professionals. The patient for each of the four SMIPPs was either a child or adult computerized mannequin.

Incorporating Simulated Models of IPP into the Curricula

The next step is to incorporate the SMIPPs into the curricula using the Charles, Bainbridge & Gilbert's IPE model (Charles et al., 2010) of exposure, immersion and mastery mentioned previously. Students are introduced to IPE competencies didactically in the classroom (exposure phase) and then shown the SMIPPs (immersion phase in the classroom). Debriefing after each SMIPP will be included in the immersion phase. Participation is an important component of adult learning (Seaman & Fellenz, 1989). Debriefing provides an opportunity for students to participate in the learning experience by engaging in the process of making the connection between the experience of the event (in this case IPP) and making sense of what they have experienced (Fanning & Gaba, 2007). Debriefing, guided by an experienced facilitator creates the opportunity for the participants to reflect on their performance and identify strategies to improve their practice.

Evaluation of the IPP learning experience

The evaluation of the IPP learning experience includes the assessment of the overall impact of the experience on students, and the assessment of the interactive IPE learning tool (SMIPPs). This will enable us to modify and adapt the tool as we move forward in the further development and implementation of SMIPPs. We will therefore focus on; the potential for meaningful impact on students' IPP during phase one and two of the evaluation process, and student and instructor perceptions of SMIPPs during phase three.

Evaluation Phase 1

The Points for Interprofessional Education System (PIPES) (Centre for Interprofessional Education, University of Toronto, 2013) framework both measures the quality of the learning activity (SMIPPs) and is a framework for incorporating IPE activities into the curriculum. The PIPES framework is constructed based on eight criteria divided into two categories, the process category and the content category. The process category contains criteria that describe **how** the learning occurs within the learning activity. The content category includes criteria that describe **what** will be learned. A three-point scale is used to evaluate all eight criteria. A score of zero denotes little or minimum levels of educational learning activity; five points for acceptable or moderate levels; and ten points for when strong IPE learning is obtained. (For more information on the PIPES framework refer to the Centre for

Interprofessional Education at the University of Toronto's Points for interprofessional education system.)

Evaluation Phase 2

A pre- and post-test using a self-administered electronic questionnaire is used to determine students' attitudes toward interprofessional learning prior and after the application of the SMIPPs and debriefing. The questionnaire includes the validated Readiness for Interprofessional Learning Scale (RIPLS) (McFadyen, Webster, & Maclaren, 2006) and demographic variables. Data analysis includes descriptive statistics, factor analysis and an analysis of variance (ANOVA).

Evaluation Phase 3

Focus groups with both instructors and students are used to determine the appeal of the SMIPPs as a learning activity.

The evaluation of the overall learning activity is integral to the development and implementation of SIMPPs to support the acquisition of IPP competencies in the classroom and to the continuous quality improvement of the tool.

Conclusion

Few opportunities exist for healthcare students prior to clinical training to "learn with, from and about" other health professions. As indicated, IPE is key to the implementation of IPP. Our approach is to embed IPP competencies within the curricula. We propose the use of SMIPPs in the classroom as one strategy to provide an opportunity for students to experience IPP.

Results from this project will also inform the development, implementation and evaluation of SMIPPs that incorporate health and human (e.g., social workers, home care workers, etc.) workers as well as a prototype to inform IPP in professions outside of healthcare. SMIPPs can also be used to deliver continuing education programs to update and refresh skills of practitioners.

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Workshop 10
Designing Mathematics Learning Supports to have maximum impact for students
Ciaran O'Sullivan . ITT Dublin

**Designing Mathematics Learning Supports
to have maximum impact for students**
Ciaran O'Sullivan. ITT Dublin

Background:

Large numbers of students entering Higher Education take some level of mathematics as part of their degrees, and it is widely reported that a considerable minority of these students demonstrate a lack of the basic mathematical skills that they require to succeed. A common response has been the establishment of Mathematics Learning Support to give students the opportunity to reach the levels required.

Research has shown that in general, although the supports appear to impact positively on students who avail of them, a significant number of students do not engage appropriately.

This workshop will explore what are the key attributes that Mathematics Learning Support services should have so that they can have maximum impact for students in a new technological university for Dublin.

Structure of workshop:

The 1hour workshop will consider how to design Mathematics Learning Support (MLS) services to have maximum impact for students by considering the following questions:

1. What are MLS services and how necessary are they?
2. What type of MLS services should be provided?
3. What are the key staff/resource issues in providing effective MLS?
4. How can we successfully get students to engage with MLS services?
5. What are the key organisational structures that enable the effective provision of MLS?

To scaffold the workshop there will be two inputs followed by a discussion.

First input: “Listening to the student voice” (25 minutes)

The first activity of this workshop will be to consider the ‘student voice’ regarding MLS as expressed in a large scale student evaluation of MLS, the first of its kind, which was carried out in nine Higher Education Institutions in Ireland by the Irish Mathematics Learning Support Network (IMLSN). The survey was given to first year students who were studying at least one mathematics module as part of their undergraduate programme, but were not specialising in mathematics. The survey was given both to students who availed of MLS and those who had not. Over 1,600

students were surveyed. This workshop input will examine how the findings and recommendations of the 100 page report “Student Evaluation of Mathematics Learning Support: insights from a large multi-institutional survey”, which was produced from the survey by Ciarán O'Sullivan (IT Tallaght), Dr. Ciarán Mac an Bhaird (Maynooth University), Dr. Olivia Fitzmaurice (University of Limerick) and Dr. Eabhnat Ní Fhloinn (Dublin City University), can contribute to answering the five questions posed above.

Second Input: “Co-ordination of MLS across a multi-campus institution” (15 minutes)

The second input workshop activity will be to consider the challenges that exist in the coordination of Mathematics Learning Support (MLS) across the three institutes intending to form the Technological University for Dublin: The Dublin Institute of Technology, The Institute of Technology Blanchardstown and The Institute of Technology Tallaght. This input will describe a study which is being undertaken currently across the 3 institutes by Dr Cormac Breen (DIT), Dr Damian Cox (IT Blanchardstown) and Ciarán O'Sullivan (IT Tallaght). The study began with an initial audit of existing and historical MLS provision in the three institutes. The second stage of the project involved an analysis of students' needs in each of the campuses, which needs are common to all and which are unique to each location, carried out using a survey circulated to both staff and students in each of the three institutes. In this part of the workshop, results of the audit/survey will be outlined and their implications for answering the five questions posed above regarding the provision of MLS in a new Technological University will be considered.

Discussion: (20 minutes)

The third part of the workshop will be a structured discussion. Firstly workshop participants will be invited via a ‘pair and share’ mechanism to contribute responses to the 5 posed questions re provision of effective MLS for students. This will be followed by a whole group discussion, the focus of which will be to record the collective key responses from the workshop participants to each of the 5 questions.

Expected audience:

Participants are expected to be those interested in the “Re-Imagining our Curriculum” theme of the Higher Education in Transformation symposium, such as those interested in transitions pedagogy and addressing the needs of diverse learner groups and also those interested in support frameworks that foster meaningful engagement activities throughout the learner experience. Copies of 'Student Evaluation of Mathematics Learning Support: insights from a large multi-institutional survey' report will be available for workshop participants.