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INTRODUCTION TO DESIGNING RESPONSIVE PEDAGOGY

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IDEAS 2015, Designing Responsive Pedagogy, is the third annual teaching, learning and research conference co-hosted by the Galileo Educational Network and the Werklund School of Education at the University of Calgary. The conference mandate is to share the scholarship of innovative teaching practices that is occurring in today's classrooms.

The IDEAS conference is about community engagement. It provides a rich forum for educators and educational leaders from K-12, higher education and government to come together to share in research and practice that is informing and setting the direction for contemporary education. Through the conference and with the proceedings, educators are demonstrating how they are critically reflecting on theory and practice to improve teaching, learning, assessment and research in today's K-20 educational contexts.

DESIGNING RESPONSIVE PEDAGOGY

Lock and Friesen (2015) argued that “[e]ducators need to embrace work as designers or architects of learning within a learning society” (p. 99). To be a designer requires educators to be informed, to be creative, and to be able to be responsive to the challenge of creating inclusive learning environments to meet the learning needs of all students. It is about creating robust and meaningful learning. It is the ability to create learning environments where students have multiple means of engagement to be motivated, challenged and excited (Meyer, Rose & Gordon, 2014). Further, the College of Alberta School Superintendents' Twelfth Dimension Framework (2010) supports the notion that teachers need to be designers of contemporary learning. This requires the following:

- 1) Development of strong authentic discipline-based inquiry;
- 2) Scaffolding of student work and assessment practices that assist each student in improving, growing and thriving;
- 3) Use of networked digital technologies to create knowledge-building classrooms;
- 4) Strong relationships with students, other teachers and experts in the field for the purpose of learning together; and
- 5) Work with peers to critically reflect on practice for the purpose of improving practice.

As designers of learning, teachers need to be able to design responsive pedagogy. Often the question is asked, what does it look like in practice? How can design thinking be implemented in elementary school learning environments in contrast to what can occur in senior high school or in a graduate seminar? The goal of this peer-reviewed conference proceeding is to showcase how educators are designing responsive pedagogy that is embracing leading edge teaching and learning practice in K-20 learning environments. In the papers, educators and researchers are sharing contemporary instructional practices, data from their research into their innovative practices, and reflections that illuminate factors, attributes and insights to the importance of responsive pedagogy in a knowledge society.

The proceeding is composed of 21 papers that have been clustered into the following four sections:

1) Design thinking; 2) Higher education; 3) Language and literacy; and 4) STEM education. Over 50 authors have made teaching practice public through the papers shared in this conference proceedings.

SECTION ONE: DESIGN THINKING

The design thinking section showcases five papers set within K-12 and higher education contexts.

First, Parchoma and Power report on their ethnographic research where they studied the design and

teaching practices identified in graduate seminars. From their work, they created a design typology, based on the characteristics they found, for graduate seminars. Second, Quinn investigated the creation of a professional learning model to support creativity in learning and teaching. An examination of the literature informed the design of a learning series for teachers for which she studied the series to see how they engaged in the tasks and the processes. Third, Kelly and Barrette-Ng investigated how the Flipped Learner-Centred Interactive Classroom Strategies can be used to help instructors design a flipped learning environment. In their paper, they have provided a series of questions and answers related to this design work. Fourth, Lambert and Jacobsen shared findings from a design-based research study that examined the innovative practice of game design. Their research investigated how an intervention, video game design and building process, was implemented in Grade 6 Social Studies. Fifth, Koh and colleagues reported on their ongoing project focused on fostering in one school Grade 6 teacher capacity in using authentic assessment and assessment for learning. They shared from their preliminary findings that the use of robust professional conversations focused on specific assessment items, has resulted in teachers developing deeper insights into assessment. These five papers provide insights into strategies and techniques being used to support design-thinking initiatives.

SECTION TWO: HIGHER EDUCATION

In this section, seven papers are shared that highlight some of the innovative practices occurring in teaching and learning in higher education. First, da Rosa dos Santos and colleagues described how they used a book club approach in developing common understandings as a means for preparing researchers for practice. From their lived experience, they acknowledged how a book club provided a forum to discuss key ideas and establish new collective understandings which then informed their practices as designers and researchers. Second, Dyjur and Li explained how an

infographic learning task was used in a graduate level course designed to enhance 21st century learning skills. They shared from both an instructor and a student's perspectives how the assignment provided an opportunity for students to develop skills such as critical thinking, creativity and visual literacy. Third, Clancy and colleagues shared findings from a mixed methods research design focused on co-teaching in a nursing course. They investigated the complexity of the co-teaching experience and how that influenced leadership development and its relationship to nursing student professional practice. Fourth, Yu and colleagues described how micro-credentialing through the use of digital badges has been used to support faculty professional development. In their paper, they explained how they have established digital badges in a university setting and outlined a pilot study being conducted to examine the impact of the digital badges in support of educational development. Fifth, Kim, Gupta and Clyde outlined the iterations of designing and implementing digital game-based learning within a graduate course. Through the iterations of their work, they have designed the assessments in the course to also be game-like. Sixth, Brown and colleagues acknowledged that their experience using action research provided an approach for informing course improvement and fostering a responsive pedagogy in teaching graduate courses within multiple sections. They reported how the responsive pedagogy emerged through their reflections and collaborations as part of this action research initiative. Seventh, within the Caribbean context for library sciences, Nelson shared a number of design considerations to support cultural inclusion. She advocates that cultural inclusion needs to be addressed both in the design and the instruction in online library sciences courses. From these seven innovative practices, the authors illuminated key factors that influence responsive pedagogy in higher educational settings.

SECTION THREE: LANGUAGE AND LITERACY

This section consists of five papers that explored designing responsive pedagogy in relation to language and literacy. First, Scott described the positive response of individuals with autism spectrum disorder to music. To help teachers to engage students with this disorder, she proposed seven music-based activities that provide an opportunity for students to demonstrate their abilities with pitch. Second, Bartel Nickel shared her mixed methods research that investigated Grade 9 student achievement when comparing direction instruction and two collaborative learning models. From the data, she found that students perceived their learning to be enhanced through the use of collaboration and reported that their preference was for a computer supported collaborative learning model. Third, from their case study, Adamson and Fernandes shared best practices in arts education to support inquiry-based learning in schools through partnerships with the professional arts. From the example shared, they have provided a model to support such partnerships. Fourth, Amery and Koh conducted a review and analysis of literature that examined how face-to-face interactions and the use of blogs can foster intercultural competence in study abroad programs. In the conclusion of their work, they advocate that instructors need to have adequate and appropriate training and support so they can design and facilitate the development of intercultural competence in such programs. Fifth, Sabbaghan applied variation theory to teaching vocabulary in the context of teaching English as an additional language and exemplified lessons that can address patterns of variation in students' (mis)understandings. The authors of the five papers have demonstrated how various strategies, partnerships, and use of digital technology are enriching learning experiences for all students.

SECTION FOUR: STEM EDUCATION

The final section presents four papers that provide insights on responsive pedagogy within STEM education. First, Bhola and Parchoma conducted a literature review on chemistry education and examined how constructivist learning theories are applied in teaching and learning. From their review, they identified learning barriers and articulated the need for chemistry instructors to bridge discipline knowledge and “praxiological” knowledge to support student learning. Second, Metz and colleagues shared key principles that have emerged from the Math Minds project focused on enhancing early numeracy. In this paper, they reported that when teachers give greater attention to student responses and then make the necessary adjustments, this impacts student success, as well as allows for all to be challenged so to foster mathematical understandings and mathematical fluency. Third, Preciado Babb and colleagues, who are part of the Math Minds partnership, described the transformative learning experience of one teacher over a year. The aim of the Math Minds initiative is to change the way elementary teachers teach mathematics, which in turn improves students’ learning of mathematics. Fourth, Sabbaghan and colleagues presented data showing how teachers experienced with the Math Minds initiative are using micro-level scaffolding to support student learning of mathematics. From the data, the authors identified implications for practice. From the four papers, it is evident that there is a shift in practice and teachers are exploring and adopting specific strategies and techniques to enhance the quality of learning and teaching in STEM learning environments.

CONCLUSION

The 21 papers provide examples of how educators are being responsive to learning needs in contemporary K-20 educational settings. The examples from the papers demonstrate various ways

that educators are engaged in being designers of learning. The papers showcase how educators are being intentional and thoughtful in their responsive pedagogical practices so to create robust learning environments to meet the learning needs of all learners.

Educators are drawing on literature and research to inform their practice. As well as, they are engaged in studying their practice to inform next steps. Further, through presenting at the IDEAS 2015 conference and now publishing their work in the peer-reviewed proceedings, these educators are making their work public so that others may learn *with* and *from* them. In addition, they are actively engaged in completing the loop of theory informing practice and their practice now informing theory in relation to teaching, learning, and assessment.

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