

A Blended Health Science Education Graduate Program *Integrating Technology Assignments into Coursework*

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Abstract: The Master of Education in Health Sciences Education (MEdHSE) program at the University of Alberta, Canada was created to address the need and desire of health professionals and clinical faculty to enhance their teaching, leadership, and educational research skills. A blended learning format was adopted to meet the needs of the learners, all full-time clinical/community educators. A technology integration strategy was developed that included a course focused on technology integration across the curriculum and technology-based assignments for each course. Support for instructors was 'just-in-time' with an educational technology consultant providing individual assistance for each instructor. The educational technologist and graduate students in an educational technology program supported students, with the majority of the assistance occurring early in the program. Students expressed mixed reviews with the technology-based assignments, but overall enjoy the blended learning experience.

1 INTRODUCTION

The increasing complexity of health systems combined with the challenges of managing patients with multiple morbidities, has resulted in a focus on how future health professionals are educated. This includes the preparation of instructors (Frenk et al., 2010). Continuing health professional education refers not only to the enhancement of clinical skills, but also to the enhancement and development of competencies to develop and deliver quality health education. In response to this need, Master's degree programs have emerged worldwide (Tekian and Harris, 2012). A core component that seems to be lacking in most programs is the intentional development of an educational technology strategy that is integrated into courses and assignments.

The Master of Education in Health Sciences Education (MEdHSE) program at the University of Alberta, Canada was created to address the need and desire of health professionals and clinical faculty to enhance their teaching, leadership, and educational research skills. Additionally, to attract working health professionals to the program, flexibility with the delivery of the program was critical. To meet the learners' needs for flexibility and to address the

increasing use of educational technology in instruction, a blended learning program was developed that ensured integration of technology throughout the program. This paper will describe the blended program, outline the process for integrating educational technology and describe instructor and student support.

2 BLENDED LEARNING

There is a large and growing body of research that has shown blended learning to be more effective than either fully online or fully face-to-face courses on a number of metrics, including learning outcomes (Means et al., 2010), student satisfaction (Dziuban, Hartman and Moskal, 2004; Wingard, 2004) and levels of student-instructor interaction (Zhao et al., 2005). The University of Central Florida describes blended learning as "a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment, rather than a ratio of delivery modalities" (Dziuban et al., 2004, p 3). While definitions of what constitutes "blended

learning" vary, the courses in the MEdHSE program are closer to the "online learning" end of the blended learning spectrum, to the point where the courses would be considered "online" by some of the more conservative blended learning definitions (Allen et al., 2007).

3 THE PROGRAM

3.1 Development of the Program

The MEdHSE program was developed as a collaboration between the health science faculties and Faculty of Education at the University of Alberta. A program development committee was formed with members' expertise ranging from educational technology, curriculum design, medical education and interprofessional education. The planning process occurred over a two-year period. A decision was made early in the planning process to house the program within the Faculty of Education, rather than one of the health science programs, to ensure the program maintained a strong pedagogical focus across all health science professions. The program extends the knowledge and skills of health science educators in the areas of *educational pedagogy, educational research, and interprofessional leadership* within the collaborative context of communities of practice of professional educators.

3.2 Program Format

The MEdHSE program is designed for health professional educators who work full-time or almost full-time in clinical, community or educational settings and have a role in the education of future health providers or other adult learners. This part-time program is delivered in a blended delivery format consisting of a small number of face-to-face classes and online synchronous and asynchronous sessions. In the initial years of the program, Elluminate (www.illuminate.com) was the online synchronous system used to deliver the course. The University of Alberta recently switched to Adobe Connect (www.adobe.com) for its online or blended programs.

Most of the courses have 1 or 2 face-to-face meetings to supplement the 6 or 7 online classes in that course. The face-to-face time is mainly used for course orientation, lab work, student presentations and some group projects.

One feature of the program is the goal of

developing an interprofessional community of practice/learners, which facilitates regular opportunities for engagement, practice and critical reflection. Instructors and supervisors in the program are from both the Faculty of Education and health sciences faculties, with students identifying a health professional with a university appointment to serve as a co-supervisor.

All students enter the program in the course-based stream. At any point during their course of study, students can elect to switch to a thesis-based masters, rather than take the course-based masters. There are eight required courses students must take, regardless of their choice for course-based or thesis-based masters. Each course is delivered in a blended learning format and is 8 weeks in duration. Table 1 provides an overview of the required courses. The one exception is Curriculum Studies in the Health Sciences, which is a 5 day intensive course offered in the spring.

The timing of the face-to-face classes for each course varies. Typically, the first class is a face-to-face class in order to introduce the instructor to the students, with the remaining classes online. For other courses, the face-to-face class comes near the end of the course to facilitate presentations or delivery of student-led content.

Table 1: Summary of required courses.

Year 1
Philosophy of Teaching
Introduction to Methods of Educational Research in the Health Sciences
Learning and Teaching at the Adult Level
Curriculum Studies in the Health Sciences
Year 2
Applied Research Methods
Integrating Technology Across the Curriculum
Assessment and Evaluation in the Health Sciences I
Assessment and Evaluation in the Health Sciences II

3.3 Educational Technology

In addition to a focus on the core courses, a commitment was made to expose students to new technologies used in teaching and learning. This was achieved through two main mechanisms: 1) a course called *Integrating Technology Across the Curriculum* was offered; and 2) an educational technology plan for each course was developed.

3.3.1 Technology Integration Strategy

The philosophy with the technology integration strategy was to build meaningful content together,

both students and instructors. Two goals were identified in the planning of the strategy. First, students in the program would create a series of practical learning objects and/or exemplars for use in their professional practice. These items would be included in the student's portfolio. Second, students in the program would employ a variety of techniques to build a professional learning network (including both their peers in the program, as well as other professionals online). Reflections on and examples of these techniques would be included in the student's portfolio. Although the strategy was developed for the entire program, the adoption was optional for each instructor with 60% of the instructors working with the educational technology consultant to incorporate the strategy into their class.

During the latter stages of the program development phase, the educational technology consultant drafted the technology integration strategy and proposed specific activities and assignments involving technology for each required course. Example strategies from 3 courses, Philosophy of Teaching, Introduction to Methods of Educational Research and Integrating Technology Across the Curriculum, are shared.

3.3.2 Examples of Technology Integration

Philosophy of Teaching: the goal was for students to create a multimedia object that expressed their philosophy of teaching using an online presentation tool, Prezi (www.prezi.com). The students were instructed to develop a personal philosophy of teaching using topics covered in the class. The assignment was to include areas of strength, areas for growth and an action plan for improvement. The student's philosophy was to be connected to the philosophies explored during the course. The purpose of choosing Prezi for this assignment was to allow students to convey these often complex and abstract ideas using a tool that would allow them to represent their ideas in non-linear formats.

Introduction to Methods of Educational Research: the goal in this course was for students to use Twitter (www.twitter.com) as a means of keeping up with current research and research methods. At the program's orientation day, students were shown how to create a twitter account and provided with some basic instruction on how to tweet, retweet and search for people or organizations. Additional learning objects about Twitter were created and added to the online course environment to support students who may have needed additional support about how to interact online using Twitter. As part of the course, students

were instructed to develop a Professional Learning Network (PLN) with other 'tweeters' in the area of educational research, research methods, health professional education or other relevant field. The students their PLN and used twitter for 5 weeks. At the end of this time, they wrote a reflection on their experiences of using Twitter as a means of developing a professional network and were asked to reflect on the question as to whether this was an effective means of establishing and maintaining a PLN. Several students created a video reflection, rather than a written reflection and one even used an online tool to create avatars to reflect on the use of Twitter with PLNs.

Integrating Technology Across the Curriculum: the goal was to provide the students with a variety of opportunities to work with technology in an applied way, meanwhile utilizing educational theory to support their experiences. For example, before the initial class, students were asked to use Popplet (www.popplet.com), an online tool that allows one to record ideas and concepts in a visual way, to share their ideas about constructivism versus constructionism. Working alone or in groups, students were asked to present to the class on the use of some type of technology. Topics included iPads in the classroom, the use of simulation in teaching and mobile technologies. One optional assignment had the students create an instructional YouTube video.

Student Feedback on the Technology-based assignments: with all of the assignments that used technology, the student reactions were mixed. Some students relished the opportunity to try new mediums to share their assignments, while others wished they could use a more traditional format for the assignments. Others still grumbled at the start of the assignment about the use of technology and then became avid users of the technology. For example, one student ran lunch time tutorials on Prezi for his colleagues at work. Other students actively kept up their Twitter accounts after the course ended and have further enhanced their PLNs. One student in particular was very hesitant to even use the synchronous system at the beginning of the program, however by the 2nd year of the program she was completing optional assignments using YouTube.

3.4 Instructor Development & Support

In order to support the instructors in the blended MEd program, special instructor development sessions were offered. In close collaboration with a educational technology specialist, individual training

sessions with each instructor were offered each term. This was in part due to the diversity of experience and comfort among the instructors with teaching online in a blended format, with the technology tool(s) integrated into their course, and with the scheduling of their courses within the program. The educational technologist consultant working with the program utilized a 'just-in-time' approach for instructor development. When the instructors required technology consulting for course development, or technical assistance in-class, the consultant worked with the instructor on an as-needed basis. Educational technology students also provided additional support for some of the online synchronous sessions.

3.5 Student Development & Support

Student support varied depending on the assignment and instructor. For tools that were used throughout the program (e.g., for student learning portfolios), training time was offered during the student orientation day. In many classes, the educational technology consultant was able to provide an overview or demo of specific tools during class (either online or face-to-face) and then add additional support resources to the online course environment. In the case of more complex technology tools (e.g. Prezi), two or three additional evening training sessions were set up that approximately 25-30% of the students attended. Some assignments used technology tools that required very little instruction. In those cases, online learning objects were created and placed in the online course environment for students to refer to. Regardless of the assignment, students were always welcome to contact the educational technology consultant for just-in-time support.

4 CONCLUSIONS

Health professional educators need to possess competence in not only assessment, teaching and learning, research methods or other traditional core content, but they also must gain skills in using and integrating into curricula a wide range of educational technology.

Preliminary feedback from the students of this MEdHSE program to the instructors, support personal and program director has been positive. Challenges that exist with the technology integration plan include providing off hours support and training to busy professional students, motivating instructors

who do not teach these courses more than once a year to adopt the technology assignment, adopting a mix of technology tools that are both innovative and interesting, without being too complex for learners, encouraging professionals who are generally "risk averse" to take risks with trying new technology tools that might positively impact their androgogical practices.

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