Designing a Graduate Supervision MOOC for Faculty Development

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Introduction

Massive Open Online Courses (MOOCs) offer a promising approach for faculty development in higher education. This paper reports on the analysis and the preliminary development phase of a design-based study to explore the design, implementation and evaluation of a Quality Graduate Supervision miniMOOC (QGSmM) for academic faculty (“mini” indicates a closed pilot). Supervising graduate students is an important part of a faculty member’s teaching role and responsibility; thus it is an area that needs focus and support. Strong relationships between graduate supervisors and students play an important role in the success of graduate students in their coursework and research, and in the timely completion of their programs. Faculty development opportunities are an important strategy for improving and advancing faculty members’ skills in research, teaching and in graduate supervision. However, given the many demands on faculty members’ time, it can be a challenge to get faculty to take part in faculty development seminars and workshops. This design-based research responds to the need to design easily accessible and flexible, online faculty development opportunities that are tailored to faculty members’ learning needs as graduate supervisors and can target large numbers of participants at the same time. Findings from this research are expected to increase collective understanding of the effective design and delivery of the QGSmM to engage academic faculty in an interdisciplinary learning community to enhance their graduate supervision practices. The motivation to invest in faculty development for graduate supervision is anticipated overall improvements in the experiences of both students and faculty over time.

Background

The quality of student-supervisor relationships plays an important role in the success of graduate students (Skarakis Doyle & McIntyre, 2008). Poor supervision is considered one of the factors that contribute to the dropout of doctoral students in Canada (Erichsen, Bolliger & Halupa, 2014; Skarakis Doyle & McIntyre, 2008). Rather than simply relying on their own experiences being supervised, faculty members need additional support and guidance in the development of strong graduate supervision skills. According to Dangel and Tanguay (2014), “there is conceptual and empirical literature that points to the need for quality supervision; however, there is less information on how to best support supervisors in their work” (p. 4). Enticing faculty to take part in faculty development is another challenge. While most institutions offer faculty development opportunities and programs for faculty, too few of the faculty members who need this support actually take advantage of these learning opportunities. Taylor and McQuiggan (2008) outline several reasons why faculty members choose not to participate in university-wide professional development: lack of time, volume of faculty work, logistical issues (for example, the times and locations of sessions), lack of recognition or financial awards for teaching, and lack of direction from the university. It may be that online learning is the best way to engage busy faculty members in ongoing development.

As academic work is complex and ever changing in both research and teaching, faculty members need to keep up to date with the latest research in their fields, develop their teaching and graduate supervision practices and contribute leadership and service to collegial governance at their institutions. A successful faculty development program will address limited faculty time and also take into account how and whether teaching is valued at the institution. Furthermore, faculty development programs need to be designed to enable graduate supervisors to open up their graduate supervision practices for discussion, debate and critique with graduate supervisors from across
disciplines (Manathunga, 2010). Researchers have recommended the use of MOOCs as a workable solution for faculty professional development (Bond, 2013; Fini, 2009). In the past few years, MOOCs have become integrated into higher education with faculty members designing MOOCs for students. Two studies report on the use of MOOCs for faculty professional development (Stephens & Jones, 2014; Waite et al., 2013). An assumption that guides this study is that higher education can use MOOCs to engage large communities of faculty from across fields of study in a learning community focused on the development of quality graduate supervision practices.

The conceptual framework for this design based study includes three theoretical perspectives, including connectivism theory, learning communities and constructivism. The overall design of the miniMOOC will draw upon the principles of constructivism. Huang (2002) summarizes the instructional principles of constructivism that influence the design of online learning environment: Interactive learning, collaborative learning, facilitate learning, authentic learning, learner-centered learning and high quality learning. For learning to be authentic and meaningful in this miniMOOC, learners will be involved in the design of the miniMOOC. The design of modules for the miniMOOC will be based, in part, on the input of the graduate supervisors as to what they want to enhance and learn about graduate supervision. The instructors will adopt a constructivist stance in leading and facilitation learning in the miniMOOC. Facilitators will guide, advise and facilitate learning in the miniMOOC, but will not be delivering content. This miniMOOC will also take into consideration the prior knowledge of faculty members and will encourage them to express their personal knowledge in supervising graduate students.

Research on the benefits and drawbacks of MOOCs have been considered for the design of a faculty development miniMOOC. For example, Yang, Sinha, Adamson, and Rose (2013) discovered, while studying Coursera’s MOOCs, that one reason for high participant drop out is the MOOC’s failure to provide the necessary social environment for participants. Building from this finding, the present study has adopted a community of learners’ approach guided by connectivism. The miniMOOC will be designed to be a collaborative learning experience that emphasizes discussion, communication, and networking with other learners. Siemens’ (2006) connectivism theory emphasizes the idea that “instead of knowledge residing only in the mind of an individual, knowledge resides in the distributed manner across a network” (p.8). The design of the miniMOOC will support the creation of a learning community comprised of faculty from across disciplines focused on a common role and responsibility. Forming a learning community that supports sharing and collaboration is essential to build trust, rapport and active learning in faculty development programs (Taylor & McQuiggan, 2008). The miniMOOC will be designed to support the formation of a learning community by providing rich and varied resources for review and collaborative discussion and knowledge building, and through meaningful tasks and opportunities for faculty to collaborate in different ways. The miniMOOC may encourage the division of the participants into smaller groups based on their discipline, as some aspects of graduate supervision relationships and practices have been shown to vary from one faculty to another (Golde & Walker, 2006).

The two gaps in the available literature that this design-based research aims to address are: one, how can we best support graduate supervisor development, and two, how effective are MOOCs for faculty development. This design based research study examines the potential of MOOCs as an accessible and flexible learning environment to support ongoing faculty development in the area of graduate supervision. Using a design based research approach, this study is structured to evaluate both the design and the implementation of a miniMOOC. This design based research is guided by three research questions.

1. What design elements are necessary in the development of a Quality Graduate Supervision miniMOOC?
2. What scaffolding and support is necessary to support faculty members to effectively use the Quality Graduate Supervision miniMOOC?
3. In what ways can a Quality Graduate Supervision miniMOOC support and benefit faculty members in the ongoing development of their graduate supervision practices?

This paper reports on the analysis and development phase and preliminary findings that address question one.

Methods and Design of the Study

A design-based research (DBR) approach has been chosen to guide the design, implementation and evaluation of a Quality Graduate Supervision miniMOOC. Wang and Hannafin (2005) define design-based research as “a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to contextually-sensitive design principles and theories” (p. 6–7). DBR is increasingly popular in educational research, as it has been designed by teachers for teachers in order to bridge the gap between theory
and practice (Wang & Hannafin, 2005). Amiel and Reeves (2008) argue, “that design-based research provides an innovative proposal for research on innovation and education” (p. 30). This study follows Reeves’ (2006) suggested phases for conducting Design-Based Research: a) analysis of practical problems by researchers and practitioners, b) development of solutions, c) evaluation and testing of solutions in practice, and d) reflection to produce ‘design principles’ (Reeves, 2006).

The Quality Graduate Supervision miniMOOC will be a hybrid or blended miniMOOC. Blended or hybrid means that the miniMOOC will be offered over six weeks with the first module offered as a face-to-face seminar and the remaining five modules offered fully online using the learning management system. This MOOC is called a miniMOOC because the first iteration will be offered as a closed pilot at one university over one DBR cycle to evaluate the design, to evaluate what scaffolding and support is required to maximize faculty learning, and to determine whether the miniMOOC impacts faculty development of graduate supervision practices. The intention is to use research findings from the pilot to iteratively refine and improve the design for subsequent offerings of the MOOC as a fully open, massive online course. The long-term goal is to continue to study the MOOC through several DBR cycles and with faculty members from many universities. Ongoing evaluation of the design will help us understand the impact and effectiveness of the MOOC and to adjust the design, change or alter it as needed. According to McKenney and Reeves (2012), conducting a pilot study can help the researcher to “begin to get a sense of how the intervention will perform in various contexts and what kind of real world realities need to be addressed for the design to have a chance of success under representative conditions” (p. 6).

Preliminary Findings of the Analysis Phase

The analysis phase refines the research problem, reviews the literature, and refines the conceptual framework. The first phase of the study has involved the analysis and exploration of the problem of faculty development for graduate supervision. The exploration phase has involved a review of the literature and a review of the institutional context to understand the nature of the problem as well as to determine the nature and type of resources and supports available for graduate supervisors. Key findings from the analysis and exploration phase have informed initial design work for the miniMOOC.

The analysis phase has drawn upon a synthesis of key findings from a cross-campus survey of faculty members and graduate program directors at one Canadian university. Two online questionnaires were administered to gather information from graduate supervisors and graduate program directors on common problems and learning needs in graduate supervision, patterns of participation in faculty development, and preferences for format. Data were collected from 60 graduate supervisors from across different faculties and from 4 graduate program directors. Key themes and a descriptive analysis of findings from the analysis of data are presented below, and are being used to inform the design of the six modules of the miniMOOC.

![Figure 1. Percentage of Graduate Supervisors’ Questionnaire](image-url)
The main purpose in administering the two questionnaires was to better understand, from the faculty members and graduate program directors themselves, the types of topics that graduate supervisors want to learn more about with regards to quality graduate supervision, the kinds of support supervisors want and need, and the range of issues that supervisors face as they work closely with graduate students.

Data provided in response to questions about the topics graduate supervisors believe should be included in the Quality Graduate Supervision miniMOOC yielded several themes, which have been summarized in Table 1.

**Table 1. Top Topics for Quality Graduate Supervision miniMOOC from Graduate Supervisors**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>How to motivate your graduate students</td>
<td>15%</td>
</tr>
<tr>
<td>Strategies for Conflict resolution</td>
<td>13.3%</td>
</tr>
<tr>
<td>Better supervision practices/orientation</td>
<td>8.3%</td>
</tr>
<tr>
<td>Helping students with time management</td>
<td>8.3%</td>
</tr>
<tr>
<td>Preparing students to be independent researchers / preparation for candidacy</td>
<td>6.6%</td>
</tr>
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</table>

In the Graduate Program Directors’ questionnaire, the GPDs were asked to report on the types of issues and problems between students and supervisors that they usually deal with in their role. GPDs were also asked to indicate the topics that need to be considered when developing a MOOC for quality graduate supervision. The most frequently mentioned issues and problems mentioned by GPDs and the reasons behind these problems have been summarized in Table 2.

**Table 2. Common Issues and Problems in Graduate Supervision from GPDs**

<table>
<thead>
<tr>
<th>Most Supervision Problems</th>
<th>Percentage</th>
<th>Reasons</th>
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<tbody>
<tr>
<td>Students fail to progress in program</td>
<td>50%</td>
<td>- Deficiency in students’ background</td>
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<tr>
<td></td>
<td></td>
<td>- Absenteeism of student or long delays</td>
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<tr>
<td></td>
<td></td>
<td>- Failure of achieving program’s requirements.</td>
</tr>
<tr>
<td>Student-supervisor relationship conflict</td>
<td>50%</td>
<td>Personality conflicts between student and supervisor</td>
</tr>
<tr>
<td>Unsupportive supervisors</td>
<td>50%</td>
<td>- Supervisor not available for meetings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Minimal useful feedback on student’s work</td>
</tr>
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A miniMOOC team has been formed in phase one, and includes an expert from the Faculty of Graduate Studies who runs a “My Supervisor Skills” program, and who has been involved in discussing the research problem. A faculty member with expertise in faculty development and a faculty member with expertise in design based research have also been recruited to participate as research members. Grant funding has been provided by the Faculty of Graduate Studies to support the development phase. To assist in the development process of the Quality Graduate Supervision miniMOOC, an instructional designer and/or educational technologist will be recruited as well as a videographer for video capture and editing. The miniMOOC team meets regularly to discuss the research plan and miniMOOC development progress, and provides critical feedback on the process. The miniMOOC team will also discuss the design of the miniMOOC and invite speakers to either moderate a module of the miniMOOC or be a guest speaker in an assigned module.
The Development Phase of the miniMOOC

The development of solutions phase is dedicated to the design and actualization of the Quality Graduate Supervision miniMOOC. Based on the findings from the literature review, institutional review and questionnaire data, the topics that will be the focus of the Quality Graduate Supervision miniMOOC and the preliminary organization of the six modules are presented in Table 3.

Table 3. Design Draft for the miniMOOC Modules

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Location</th>
<th>Modules’ Topics</th>
</tr>
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<tbody>
<tr>
<td>Week 1</td>
<td>Face-to-face</td>
<td>Introduction</td>
</tr>
<tr>
<td>Week 2</td>
<td>On-line</td>
<td>Supervisors’ Best Practices / Developing your own best practice as a supervisor</td>
</tr>
<tr>
<td>Week 3</td>
<td>On-line</td>
<td>Relationship Building / Developing strong research relationships with your graduate students</td>
</tr>
<tr>
<td>Week 4</td>
<td>On-line</td>
<td>Mentoring New Researchers</td>
</tr>
<tr>
<td>Week 5</td>
<td>On-line</td>
<td>Anticipating and Addressing Challenges</td>
</tr>
<tr>
<td>Week 6</td>
<td>On-line</td>
<td>Promoting Excellence in Graduate Education</td>
</tr>
</tbody>
</table>

As part of the learning experience during each module, supervisors will engage with rich and relevant resources, such as policies, best practice guides, journal articles and videos of experts. As part of each module, supervisors will have access to 3 – 6 short videos of expert supervisors who provide insights and recommendations on best practice from their own work with graduate students. Recruitment of expert supervisors will include six to eight graduate supervisors who have been recognized for excellence in graduate supervision through university and faculty awards. The expert supervisors will be videotaped as they respond to key questions in each module that align and cohere with the goals of the module. For example, for the recruitment video and for videos in module one, the following questions will be used with the expert supervisors: 1) what do you find satisfying or meaningful about working with grad students? 2) What is one strategy for graduate supervision that works well for you? 3) What is one issue about graduate supervision that is a challenge for you? And, 4) What do you still feel you need to learn about being a good supervisor?

In this miniMOOC, participants will complete tasks each week, such as creating materials for their ePortfolio, as well as engage with colleagues from across campus in discussion forums and by responding to each other’s contributions. The following is an example of the discussion forum guide in module two:

Discussion question and response: Please add to the conversation on graduate supervisor’s best practice based on your experience.

- Guided response: Share up to three ideas you have gained from the resources and Great Supervisors that you can apply to your practice.
- Respond to others: Review what others have posted and respond to an idea that has relevance for you. Your challenge is to “build upon” and share an example, rather than just affirming. For example, I found your idea powerful because it aligns with my experience with…

The next phase of this design-based research will involve evaluation and testing of the solution in practice. Data will be collected to answer research questions two and three. The current plan is to recruit 25 faculty members from on Canadian university to take part in the pilot and first offering of the Quality Graduate Supervision miniMOOC in Winter 2017. Multiple forms of data will be collected to document and analyze the scaffolding and supports to enable faculty members to effectively use the Quality Graduate Supervision miniMOOC, such as instructional plans and strategies, surveys, interviews, observations and discussion forum archives. Data will also be collected about how the Quality Graduate Supervision miniMOOC can support and benefit faculty members in the ongoing development of their graduate supervision practices.

Conclusion

Enhancing the skills of faculty members as graduate supervisors is very important to ensure a successful graduate supervision experience and to decrease the attrition rates among doctoral students (Erichsen, Bolliger &
Halupa, 2014; Skarakis Doyle & McIntyre, 2008). Higher education institutions are called upon to design and develop faculty development and learning opportunities that best serve and fit graduate supervisors to develop their supervision practices. Current research indicates that MOOCs offer a promising solution for faculty professional development (Bond, 2013; Fini, 2009); associated benefits of using a MOOC with faculty members may include increased awareness and understanding about online learning through first-hand experience. The outcomes and findings of this DBR study will serve a dual role in increasing awareness and understanding of the importance of supporting graduate supervisors in carrying out their roles and in the importance of providing a topic quality graduate supervisor for every student. The results of this study will be important for faculty members, institutions’ administrations, faculty development providers, MOOC developers and scholars who are interested in the effective design of MOOCs as a flexible and accessible design for learning.

References


