

Online teacher professional development: Using design-based research to refine teacher PD in a social networking site

Desenvolvimento profissional docente *on-line*: Usando a pesquisa em *design* baseado para refinar professor PD em um *site* de rede social

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Resumo: O desenvolvimento profissional *on-line* de professores (oTPD) tem sido identificado como uma das formas de que os professores podem participar em atividades de alta qualidade para desenvolvimento profissional. Este artigo apresenta a segunda iteração do projeto de pesquisa que descreve um reprojeto e uma remessa evolucionária de um oTPD, chamado Courselet. O tópico em foco foi o uso das lousas interativas em salas de aula, uma série de atividades dirigidas a oferecer suporte à implementação de tecnologia educacional na prática do professor na sala de aula. O artigo apresenta a experiência deste projeto e as lições aprendidas da experiência.

Palavras-chave: desenvolvimento profissional, educação de professor, tecnologia educacional.

Abstract: Online teacher professional development (oTPD) has been identified as one way that teachers can participate in high quality professional development activities. This paper presents the second iteration of a design based research project that describes the evolutionary redesign and delivery of an online TPD offering called a Courselet. The topic of the oTPD Courselet was Interactive Whiteboards in the Classroom, a practitioner delivered series of activities intended to support the implementation of educational technology into teacher classroom practice. This paper presents the experience of this delivery of a revised oTPD opportunity and lessons learned from the experience.

Keywords: professional development, teacher education, educational technology.

INTRODUCTION

Many challenges exist for the implementation of new and innovative educational technologies into schools (BEREITER, 2002; BROWN, 1992). Professional development support provided for teachers is often too general in nature, provided only in one-off workshop or seminar formats, or not content specific enough to be meaningful (BORKO, 2004). In addition to these challenges, the issue of inexperience of teachers and increasing complexity of certain technologies and it is not

surprising that teachers are often opting out of some technology implementations. Interactive whiteboards (electronic whiteboards) are one technology that are being integrated into many classrooms for teachers to utilize in the delivery of lessons. Like other innovations, professional development support for this innovation is needed to fully realize the potential of these advanced technological devices in the classroom. This paper reports on the second iteration of an interactive whiteboard professional development activity delivered in an online social networking site with

the goal of providing meaningful online teacher professional development.

New communication technologies continue to be developed and are becoming an integral component of society, allowing users to connect to networks of people almost instantaneously. Considerable research argues for the potentials of social networking software to support professional development and learning, particularly with regards to reflective activities (FELIX, 2008, FERDIG, 2007; PFERDT, 2008). Social networking sites, such as Facebook and Ning, allow users to share, collaborate, and distribute digital artifacts through a simple graphic user interface. Anderson (2006) makes the case that social networking software tools are able to support and encourage individuals to learn together while retaining individual control over their time, space, presence, activity, identity and relationships. Literature (CRICHTON & CHILDS, 2003; HERRINGTON, HERRINGTON, HOBAN, & REID, 2006; MORROW, 2002) also state that activities designed with consideration for the context and needs of the participating teachers can result in increased teacher participation in oTPD activities. These oTPD activities have been tied to increased student opportunities due to the augmented knowledge and confidence of teachers who experienced the oTPD activities. It is these sorts of connections between oTPD and the potential for increased student that is of particular interest for designers of oTPD activities.

Professional development offerings are beginning to move away from solely being offered in the workshop or seminar structure that was prevalent in the past (DARLING-HAMMOND & RICHARDSON, 2009). In addition to formal teacher professional development, there is a movement where teachers are exploring ways of connecting to others and networking for the purpose of gathering and sharing teaching practice information. In this push to network more using technology, today's teachers need opportunities to access professional development activities that can keep up with an expanding array of social media technologies. This paper reports on the second iteration of the "Design – Develop – Deliver" process of an online teacher professional development activity described as a Courselet. The

Courselet structure was designed as an attempt to further move away from the traditional workshop or seminar structure and move toward a more networked support structure professional development opportunity.

This particular Courselet project is based in an online teacher professional development (oTPD) delivery model that addresses technology professional development topics. This Courselet has been created by a teacher technology professional development organization engaged in designing and delivering teacher professional development activities within the framework of a social networking site as an alternative to more traditional TPD opportunities that are also offered by the organization. Courselets are online content focused PD mini-courses involving approximately 10 hours of teacher interaction time delivered within a social networking framework (DESIMONE, 2009; DODGE & MOLEBASH, 2005). This specific oTPD technology Courselet being delivered is focused on the use of interactive whiteboards in the K-12 classroom.

This paper is reporting on a portion of an ongoing design-based research process into the design of teacher PD delivery. Design-based research is a constructive activity that allows researchers to build and add to the theoretical foundation of the field of educational technology and as a result may contribute more to this field than other types of research (WANG & HANNAFIN, 2003). In design-based research, models of successful innovative solutions are the goal rather than particular artifacts or programs that are required by other research paradigms. It is argued that the design-based research methodology will best serve the type of processes embedded in the research of model development on the subject of online teacher professional development (DEDE, KETELHUT, WHITEHOUSE, BREIT, & McCLOSKEY, 2009).

THE CONTEXT

In 2008, an online community for educators (www.2Learn2Gether.ca) was established to support educators in the Canadian province of Alberta by the 2Learn.ca Education Society. This project was housed in a not-for-profit technology

professional development organization whose mission is to initiate, advocate and share technological pedagogical learning and leadership options for the future of education. Created from a social networking platform, the software was modified to provide professional teachers and educators in the community with social software tools available in networks such as Facebook, Moodle and Ning. Participation in this online community of educators is mainly through online groups, online forums, personal blog space, group blogs, and in-community messaging tools. Members of this online community also have opportunities including event registration, professional development videos, file sharing, and online TPD Courselets. This is a growing community of more than 1000 members with public and private discussions occurring in the numerous groups and blogs that are part of the site. Although the initial focus of the community was primarily as a means to provide educational technology professional development support, it has now expanded to include a wide range of curricular groups, professional organizations, and a meeting place for teachers to connect directly to other teachers.

In May of 2009, piloting began for the design, develop, and testing of an online teacher professional development Courselet entitled "Interactive Whiteboards in the Classroom" within the www.2Learn2Gether.ca site. The purpose of the pilot was to explore the possibility of 2Learn.ca delivering technology oTPD. In May 2009 the Courselet was developed and delivery began in June 2009, the final month of the school year. Interest in the pilot Courselet offering was very high with the 25 teacher participant spots in the pilot being filled within hours of being communicated to teachers connected to past 2Learn.ca programs.

The pilot Courselet was prepared by a design and delivery team comprised of an instructional designer familiar with teacher professional development, a programmer, a content expert, and the project researcher. This began what the ILD model of design research (BANNAN-RITLAND, 2003) refers to as the enactment phase of the project. The pilot Courselet was delivered inside a private hidden group that only allowed members enrolled in the

group to see any of the materials or postings of the Courselet. This structure was sufficiently secure and private for the initial delivery of the pilot Courselet. This use of the existing group structure in the social networking software allowed for a determination of other potential challenges that may exist with delivery of oTPD within this social networking structure.

The materials and the usage of the tools in the Courselet were developed in an ongoing process during the Courselet delivery as an evolving solution to challenges that arose. The composition of the IWB Courselet included numerous PDF instructional booklets, downloadable video files, Smart Notebook files, a group forum, and a group blog. The Courselet design included group forum postings and discussions led by the instructor over an intended schedule of four weeks. Support materials and forum discussion starters for each of the weeks was posted in the Courselet group on the first day of the week. The first week of postings was designed to position the Courselet learning in educational theory. This involved participant engagement with an academic article on the subject of IWBs in the classroom. The second week was intended to initiate discussion among the participants to further the development of an online community. This interaction occurred by reviewing and discussing some IWB examples provided in downloadable video format. The third week was designed to have participants think deeply about the processes they would follow to implement IWB usage in their professional practice. This began by having participants start to develop an online lesson plan incorporating IWB components, with a continuation of this activity in the final week. In addition, participants complete, post, and discuss completed IWB lessons and what they needed to do in order to plan to use IWBs in their professional practice. The model that describes this first stage of the Courselet process is detailed in Figure 1: Four Phases of oTPD Courselet Design and Development (OSTASHEWSKI, 2010).

STAGE 2: REDESIGN AND DELIVERY

The Design-based Research Collective (2003) identified the goal of evaluation in design-based

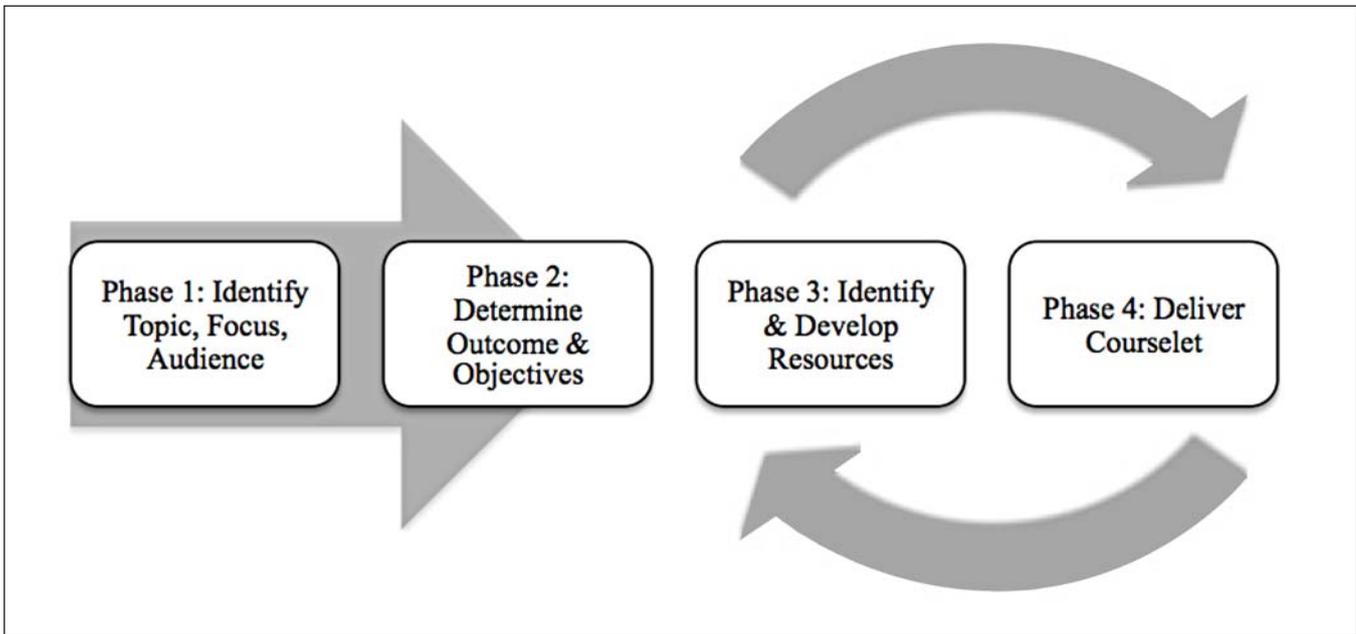


Figure 1: Four Phases of oTPD Courselet Design and Development (STAGE 1)

research as a tool with which an educational intervention is analyzed and further refined. However, the similarity of design based research with evaluation research ends there:

“[A] successful innovation as a joint product of the designed intervention and the context. Hence, design-based research goes beyond perfecting a particular product. The intention of design-based research in education is to inquire more broadly into the nature of learning in a complex system and to reüne generative or predictive theories of learning. Models of successful innovation can be generated through such work-models, rather than particular artifacts or programs, are the goal (cf. BROWN & CAMPIONE, 1996)” (DESIGN-BASED RESEARCH COLLECTIVE 2003, p. 7).

This design based research approach is also described (WANG & HANNAFIN, 2003) as a highly constructive process that allows researchers to build and add to the theoretical foundation of educational technology. In this project the constructive activity of creating an environment and a structure to deliver oTPD is ongoing and is grounded by both the literature and the evaluations that occur as part of the practice. Design-based research blends empirical educational

research with theory-driven design of educational environments and is an important research methodology for detailing when, why, and how innovative educational solutions work in practice (DESIGN-BASED RESEARCH COLLECTIVE, 2003). It is the innovations of this kind of research process that we believe will help educators to understand the relationships among theory, designed innovation, and practice.

Upon the successful completion of the pilot, further development occurred on a structure to produce more Courselets with different content within the social networking framework. Developing new Courselets required the lessons learned from the pilot to be included within the next round of development. From these lessons were the beginnings of strategies to better guide Courselet design and delivery procedures. The further implementation involved modifications of the Courselet framework to include a Learning Management System (LMS) for addressing administrative issues and a redesign of the Courselet interface to exist as a unique segment within the 2Learn2Gether.ca site. As educators who have a great deal of experience with existing LMS software like WebCT and Moodle, it was enlightening to discover the difficulties associated with participant management and tracking in a

social networking site. The modifications to the software resulted in a social networking site with an LMS capable of delivering numerous iterations of current and future Courselets. Among the changes, the software was designed to allow for administrator development and duplication of individual Courselets once the first stage of the instructional design of new Courselets was completed. Stage 2 of the oTPD Courselet process is presented in Figure 2: Six Phases of Courselet Redesign, Development & Delivery.

The first phase of Courselet Redesign, Development & Delivery focused on the previous pilot Courselet evaluation. Participants in the pilot identified several challenges regarding the manner in which materials and tools were arranged, displayed and organized in the Courselet structure. Participants also highlighted the importance of an appropriate scheduling of the delivery of a Courselet. The time of the school year plays a role in the successful delivery as professional development activities because the very start or end of the school year are simply “too hectic a time” for teachers to wholeheartedly participate. Participants identified additional materials needed to support Courselet

delivery such as providing information in more than one format. They suggested website instructional guides (PDFs) and videos to introduce participants to the Courselet blog and forum interactions. An observation of the instructor was that participants, even technology savvy teachers, had challenges with Courselet terminology, instructions, and expectations simply because they had never been involved with any form of online education previously. Feedback from the instructor included comments about the necessity of additional materials to provide guidance for any potential future instructors or group moderators who are external to the 2Learn.ca organization. To meet this potential need, a Courselet to assist instructors and 2Learn2 Gether.ca group moderators was developed for future Courselet offerings.

The other phases of the development process also supplied information that informed decisions in the second iteration of the original Courselet. Phase 2 of the Courselet Redesign, Development & Delivery centered on Courselet content modifications. These included a restructuring of the “Interactive Whiteboard in the Classroom” Courselet materials to be more specific for targeted

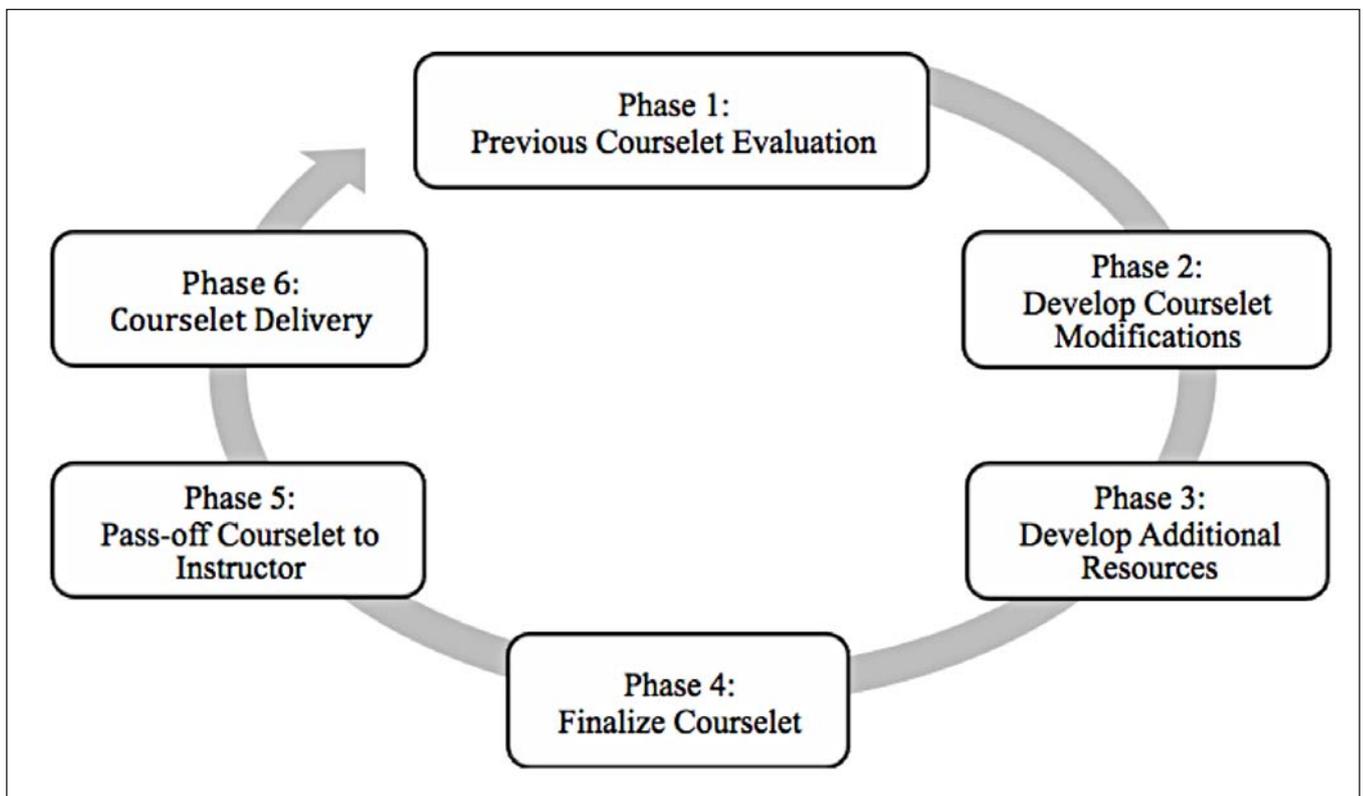


Figure 2: Six Phases of Courselet Redesign, Development & Delivery (STAGE 2)

audiences such as primary teachers or secondary teachers. This phase also led to the reworking of the delivery of the final activity and modifying the community building components in the Courselet. Every lesson learned about the material and delivery resulted in a modification of the content.

Phase 3 regarded the addition of resources to better serve the participants based on the lessons learned from the pilot. This phase saw the development of additional video examples and resources, such as Smart Notebook files. In the pilot, the final activity was the creation of a lesson plan and this was modified to better explain a number of things including the Courselet Lesson Plan tool, the final activity approval procedure and the lesson sharing process.

The finalization process of the Courselet took place in Phase 4. This consisted of a reorganization of the various components of the redesigned Courselet. This finalization phase saw the creation of the many pages of the Courselet content including the outline document and the static Courselet Activity pages. These static activity pages were purposefully designed to be unmodifiable by the instructor. This was to insure that a minimum standard set of materials including the content and planned activities which formed the basis of the Courselet would be delivered regardless of the instructor or instructors involved with delivery.

The final two phases of the Courselet Redesign, Development & Delivery process were a refining of the delivery aspects of the Courselet process. Phase 5 involved the administrative duplication of a Courselet that had all of the components necessary for the instructor to be able to begin the delivery. This phase also included uploading videos and Courselet files plus testing everything to ensure playback and downloading functionality worked appropriately. This phase sees a Courselet being duplicated, given a unique name, a unique ID number and assigned to an instructor. The 6th and final phase in the process was the second delivery of the Courselet. In this phase of the Courselet Redesign, Development & Delivery,

the Courselet is populated with students, scheduled activities and moderated discussions that comprise the Courselet activities.

CONCLUSION

Social networking sites bear some resemblance to traditional learning management systems and there are many possibilities for educational opportunities to take place in the networked aspect of these sites. Key findings of the initial Courselet delivery process were the identification of the need for a full Courselet management system (CMS). In addition, the need was identified for a Learning Management System (LMS) to enable the social networking site to be able to scale and deliver increasing numbers of Courselets from within the 2Learn2Gether.ca site. As a result a need for several significant administrative structural changes to the social networking software framework have been identified and acted upon. The first of these critical changes was the need for a system of duplication of a Courselet that had gone through the design and development phase. An administration level CMS was created that allowed for duplication as well as the ability to "pass-off" a developed Courselet into the hands of the instructor. Once the Courselet was passed to the instructor, a LMS was created to aid the instructor in the management and customization of the Courselet. The ability to add or remove participants from the Courselet as well as modify several attributes of the developed Courselet was programmed as part of the LMS. Instructor changes through the LMS included the ability to do the following: modify the course outline, add Courselet pages and link them internally, add flash video, and add and delete students to the Courselet. The administrative and instructional alterations to the 2Learn2Gether.ca software have allowed for the greater ability to develop and deliver oTPD. Given that this was the first iteration of this design-based process of development, the potential for educational activities in social networking sites appears to have a bright future.

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