A COORDINATED DECENTRALIZED APPROACH TO ONLINE PROJECT DEVELOPMENT

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ABSTRACT
With the growth rate of online learning outpacing traditional face-to-face instruction, universities are beginning to recognize the importance of strategic planning in its development. Making the case for online learning requires sound project management practices and an understanding of the business models on which it is predicated. The objective of the present case study is to provide a replicable integrated model for the development of online programs. The case study examines a coordinated decentralized model for collaborative project development and presents the lessons learned from the program's implementation. The case provides information for reflection on how adaptations and modifications affected program development and how these short-cycle decisions present a model of effective practices for future initiatives.
Key words: online learning, teacher preparation, e-learning, course development, program implementation, special education

INTRODUCTION

Over the past few years, a marked increase in higher education enrollment among North American students in online courses has occurred, with the growth rate of online learning outpacing traditional face-to-face instruction or other technology-enhanced modes of learning (Allen & Seaman, 2010; Bates, 2007; Russell & Koppi, 2007). In reference to higher education online learning initiatives in the United States, Allen and Sleeman (2011) report:

- Over 6.1 million students were taking at least one online course during the fall 2010 term, an increase of 560,000 students over the number reported the previous year;
- The ten percent growth rate for online enrollments is the second lowest since 2002;
- The ten percent growth rate for online enrollments far exceeds the less than one percent growth of the overall higher education student population; and
- Thirty-one percent of all higher education students now take at least one course online. (p.4)

The increased demand for online learning has been facilitated by its ability to provide accessible and flexible learning environments (Anderson, 2008; Kanuka & Rourke, 2008; Pachler & Daly, 2011). In a recent survey of online education conducted, it was found that "Over seventy-six percent of the [academic] leaders at public institutions report that online learning is as good as or better than face-to-face instruction" (Allen & Seaman, 2010, p.11).

Online learning has been applied to a variety of education fields. Recent studies examining the implementation of online learning in engineering and physics courses found that student's skills are enhanced (Jou, Chuang, & Wu, 2010) along with increased motivation and learning when virtual (Jou & Liu, 2012) and blended environments (Jou & Wu, 2012) are incorporated. Today, many post-secondary institutions believe that their continued success to attract and graduate students will hinge on their ability to provide quality online learning environments (Bates, 2007; Allan & Seaman, 2004).

Coupled with the demand for online learning, then, is the need to develop quality technology enhanced learning environments based on sound research practices. In order to accomplish this Kanuka and Rourke (2008) argue that a more balanced and principled approach to interpreting online learning research literature is warranted. Kanuka and Rourke (2008) state:

> It seems reasonable to conclude that competing paradigms, which suggest that technologies represent both losses and gains to higher education, can contribute to a renewed discussion of the nature, purposes, and societal effects of educational reform driven by technological innovation. Critical discourse that establishes changes resulting from the Internet-learning experience can influence the implementation of more informed e-learning practices. (p.14)

By understanding where both amplifications and reductions occur a more reflective approach to enhancing the

online learning experience can be taken.

In a study conducted by Owusu-Ansah, Neill, and Haralson (2011) that examined barriers and enablers to the implementation of technology based distance education they found "prohibitive factors include cost, accessibility, faculty concerns, state mandates, academic administrative actions and unit operations" (p. 1.). Suggested ways of overcoming these barriers include: moving away from a cost recovery model through higher enrollments and tuition; sharing of course materials; making use of external funding sources; ensuring faculty buy-in through involvement; providing opportunities for online teacher training; and having a university wide vision and strategy to ensure sustainability (Owusu-Anash, Neill, & Haralson, 2011).

In making the case for online learning institutions need consider the type of business model on which online learning is predicated. The type of business model adopted is dependent on the institution's vision regarding online learning, the resources, organizational structures, processes in place, and institutional funding arrangements (Christensen, Horn, Caldera, & Soares, 2011). For example, the vision or value an institution initially places on online learning will affect decisions on funding and organization (Miller & Schiffmann, 2006). Accordingly, Miller and Schiffmann (2006) assert institutions' pursue online learning for one of two reasons "(1) to extend access to degree programs to new off-campus students or (2) to improve the quality of teaching for existing students on campus" (p.15). Further, Vignare, Gieth, and Schiffman (2006) contend that it is a common occurrence for access oriented, cost recovery business models to be characterized by distant and continuing education initiatives, much like the present case study. An extension of this argument would be that although both public and private universities might begin initially as access oriented (i.e for profit or cost recovery) they need not remain stagnant and can evolve into the quality model that is integrated into the strategic plans of the university.

Previous attempts to articulate best practices for online development drew from traditional instructional design, distance education, and adult education models (Cervo & Wilson, 1994). However, these models are lacking as they neglect to incorporate the business models that affect online instructional design and project development within post secondary institutions. As the development of online programs can involve a number of interdisciplinary partnerships, a reliable repertoire of effective practices for project implementation in newly developed online courses and programs are required. The purpose of the study then is to address the need for replicable online project development practices as found within the current context.

METHOD

The present research utilizes a case study approach. Case studies are of particular value when their focus is on processes rather than outcomes (Merriman, 1998). Case inquiries are not characterized by confirmatory designs rather they are about understanding context and discovering process (Yin, 2009; Merriman, 1998). A case study allows for an in-depth investigation (Creswell, 2007) and incorporates multiple sources of data (Stake, 2005). By using multiple sources of data the researcher is able to clarify perceptions and enable triangulation through converging lines of inquiry (Stake, 2005; Yin 2009). Accordingly, the researcher should consider the case as a bounded system of activity patterns (Creswell, 2007; Stake 2005). Gerring (2004) further reiterates "for methodological purposes a case study is best defined as an in-depth study of a single unit (a relatively bounded phenomenon) where the scholar's aim is to elucidate features of a larger class of similar phenomena" (p. 341). Thus in the present study, a single case design was employed that examined the bounded system of the online post degree certificate in special education and the ensuing activity patterns that comprised it's development and implementation. To ensure triangulation, multiple sources of data collection were incorporated which included document, policy, and artifact review (i.e. online course content) along with participant-observation of key informants (i.e. project development team).

A cost recovery model with preexisting continuing and distance education initiatives within a coordinated yet decentralized e-learning system contextualizes and bounds the present case. The study's purpose is to not only examine the program's implementation but also provide information for reflection on how adaptations and modifications have affected program development and how these short-cycle decisions provide a model of effective practices for future online learning project initiatives.

PROGRAM DEVELOPMENT

Program Development Management Structure

All courses, within the present program being studied, were funded through the office of Technology Enhanced Learning. They were required to use a coordinated decentralized project management approach (Bates, 2000) with University of Saskatchewan representatives from the Department of Educational Psychology and Special

Education, the Instructional Design Group of the Extension Division, the Department of Media and Technology, and Information Technology Services.

A coordinated decentralized project management approach (Bates, 2000) facilitates the creation of teams on a temporary flexible basis for the purposes of project development that can then be reformulated or reconstituted to meet the various needs of organizational arrangements within the institution. By using a team approach it is argued that the quality of course design is enhanced which in some instances can be a more cost effective and sustainable approach (Kanuka & Rourke, 2008). For larger universities this type of approach is advantageous if a university-level division coordinates and supports innovation undertaken by the academic units (Softic & Bekic, 2008). According to Softic and Bekic (2008):

> The real challenge in this balancing process is to approach and tailor particular circumstances at a concrete university. The parameters that play important roles are the size of the university, its organization, including the level of the integration or independence of its organizational parts, pedagogical paradigms and principles, tradition and experience in common services in support. (p. 157)

To more strongly place e-learning at the fore front of the University's vision recent initiatives articulated in the integrated planning cycle and teaching and learning foundational policy documents argue for greater incorporation of e-learning using a coordinated decentralized approach so as to meet the strategic plan of the University for increased enrollment and program accessibility (Greer, 2010; University of Saskatchewan, 2008).

Program Description

The impetus and subsequent development of the postgraduate program in special education was based on a needs analysis conducted by the Department of Educational Psychology and Special Education (2005) that identified the ability to collaborate with peers, parents, and outside agencies as a core skill of special education teachers. More specific data to support the demand for this program stems from a departmental survey where employer perceptions regarding future needs of their organization for special education teachers were evaluated using a 7-point likert scale (Department of Educational Psychology and Special Education, 2005). Responses by employers indicated a high continuing need for special education personnel in the future (mean rating of 6.20; n = 56). In a follow-up telephone interview with 9% of the survey respondents, employers commented on the ongoing difficulty of attracting and keeping graduates in the largely rural areas of the Province. In addition, findings from the departmental survey of former graduate students showed that the vast majority were employed within a school division. A subsequent review of students exiting the postgraduate program over the past five years found a 100% employment level for former students. Thus, graduates appear to be fully employed and working directly in the field of program preparation. This data suggests a high and continuing demand for graduates meeting the special education certification scale (Department of Educational Psychology and Special Education, 2005).

As a result, the Post-Degree Certificate in Special Education was developed in response to requests by the University and stakeholders that special education teacher preparation become more accessible through remote and distance offerings. Accessibility to the program has been greatly enhanced with the Department of Educational Psychology and Special Education receiving TEL funding for online development of the program using the WebCT platform. As a result, the department offers the only online Post-Degree Certificate in Special Education in the province of Saskatchewan and produces most of the professionals in special education who fulfill qualification requirements for teaching special education in the province's schools. Further, the certificate is well situated within a national and regional context, as it is one of the few online distance education programs in special education being offered in Canada.

International standards for the preparation of professional practices for special education teachers has been established by the Council for Exceptional Children (CEC), the largest international professional organization dedicated to improving educational outcomes for individuals with exceptionalities. The knowledge and skill standards for professional practice by the CEC was used as benchmarks for the content structure of the Certificate that has been organized around the four levels of knowledge base, application, integration, and extension. The ensuing figures presented surrounding the program's description and content development are artifacts derived from the online courses.

Figure 1 provides an outline of the approved course titles that appear in the university catalogue. The first five three-credit unit courses comprise the knowledge-base level and include content pertaining to the history and philosophy of special education and the high incidence exceptionalities relating to speech and language, learning disabilities, and behavior. The fifth course in this area pertains to collaborative interdisciplinary teamwork as a

common feature and evolving practice in special education. The application level prescribes the designing and provision of supports to students with exceptionalities. The pairing of assessment with instruction in a full six-credit unit course that is integrated with the practicum course comprises the application component. The first half of the assessment and instruction course enables students to learn and practice their assessment and instructional planning skills that prepare them for the practicum that they take concurrently during the second half of the academic year. This alignment of courses at the application level enables students to practice their assessment skills while designing individual student programs in a school-based guided practicum. The final course in the certificate is at the integration level and serves as an opportunity for students to synthesize content and experiences obtained in the other certificate courses. Students, with the support of the instructor, are guided in investigating topics of personal interest in the field of special education. The aim is to prepare students to conduct a review of the literature, develop a set of effective practices related to their topics, and prepare an online presentation of their topic. By doing this, a repository of effective practices for special education teachers is created that can then be accessed by special education professionals to enhance the learning outcomes of students with exceptionalities.

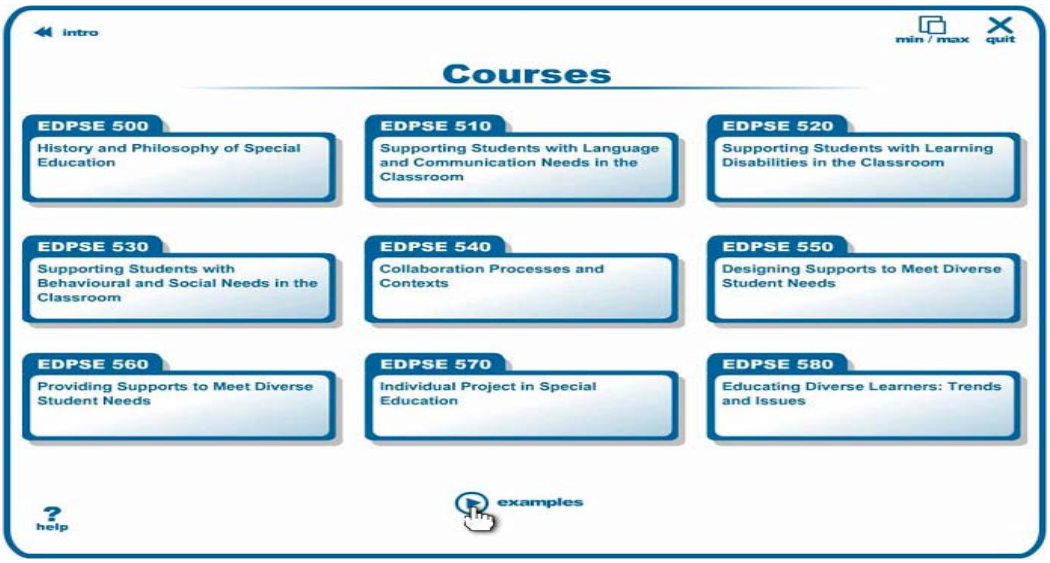


Figure 1. Screen Shot of Courses.

Content Development

Content development of the certificate followed a four-phase implementation plan. To ensure a seamless mode of delivery to professionals wishing to be trained in special education and to uphold quality standards in program development, an implementation plan was created that saw initial content development and instruction occur in a traditional face-to-face setting with the online development of the certificate facilitated by TEL development funding.

Instructional Design Phase

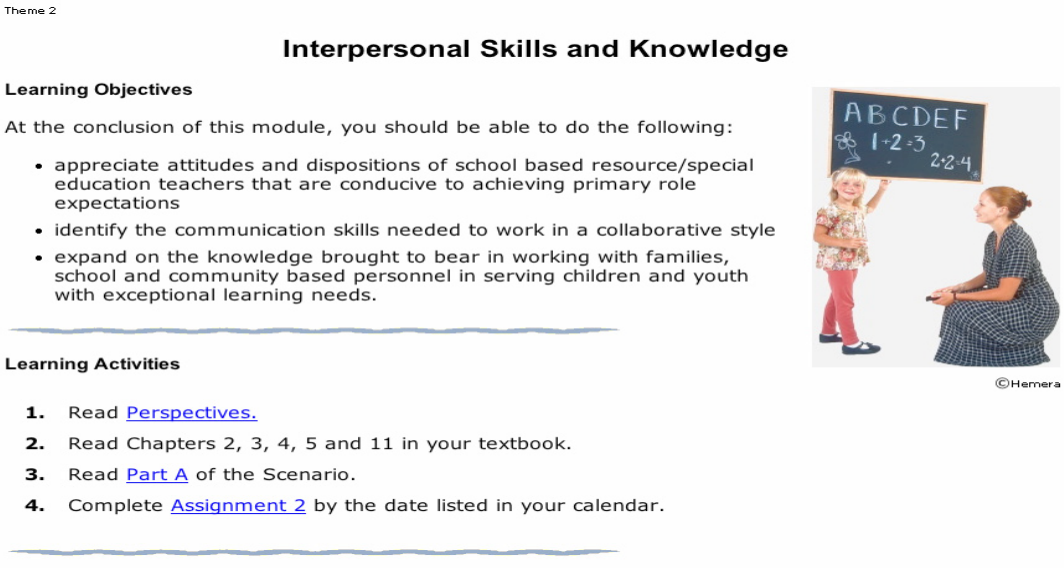
Instructional design took place at the following three levels during the development of the program: (1) university standards; (2) program instructional design; and (3) course-level instructional design.

University standards. A WebCT course TEL template, print-based materials templates, and accessibility standards for students with disabilities were created for all university online courses. This standardization of key elements served as a starting point for the instructional design of the certificate. Using the TEL template ensured that all students would encounter a similar structure when using WebCT and reduced the need for students to relearn how to use material and navigation in each course.

Program instructional design. Early in the development of the program, the department decided that all courses would be similar in look and feel, be highly collaborative, and provide an opportunity for the development of complex thinking skills. One of the first design decisions that needed to be made was how content would be presented within the WebCT environment. Conversations between the program director (department faculty member), project manager (instructional designer) and subject matter experts (SMEs) led to

the decision that content would be organized into themes. The rationale behind the use of a thematic approach is found within the research in educational psychology on cognitive learning. In this respect, the desire for students undertaking the certificate to be able to integrate and apply their learning's to authentic real world contexts was best achieved through a thematic approach (diSessa, 2000; Linn & Hsi, 2000) which employs constructivist and collaborative problem solving (Huang, 2002).

Each theme would contain outcomes-based objectives, an image that represented the overall tone of the theme, and a list of learning activities and assessment tools students might use to learn about that theme. All of this information would be contained on one web page with links to readings, audiovisual resources, and URL's that opened as pop up pages (see Figure 2).


Theme 2

Interpersonal Skills and Knowledge

Learning Objectives

At the conclusion of this module, you should be able to do the following:

- appreciate attitudes and dispositions of school based resource/special education teachers that are conducive to achieving primary role expectations
- identify the communication skills needed to work in a collaborative style
- expand on the knowledge brought to bear in working with families, school and community based personnel in serving children and youth with exceptional learning needs.

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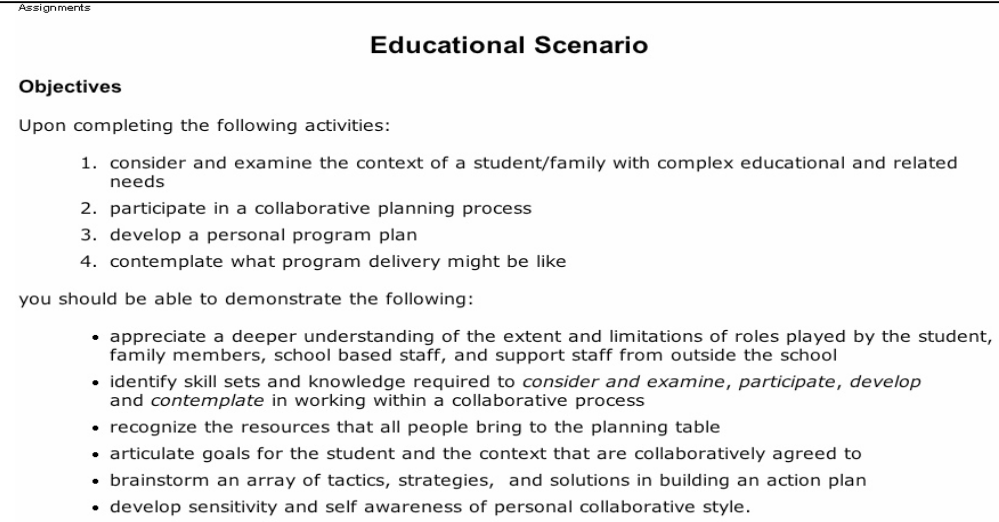
Learning Activities

1. Read Perspectives.
2. Read Chapters 2, 3, 4, 5 and 11 in your textbook.
3. Read Part A of the Scenario.
4. Complete Assignment 2 by the date listed in your calendar.

Figure 2. A Course Theme Page Artifact

All courses would, therefore, require students to collaborate in the writing of a marked assignment (see Figure 3). The nature of the assignment would vary from course to course with some courses requiring more than one collaborative assignment. Students in each course would then be assigned to private WebCT discussion groups where they could work on their individual group projects. Students were also encouraged to use the chat and discussions area to discuss generic issues relevant to the completion of the assignments, themes, and readings (see Figure 4).


Assignments

Educational Scenario

Objectives

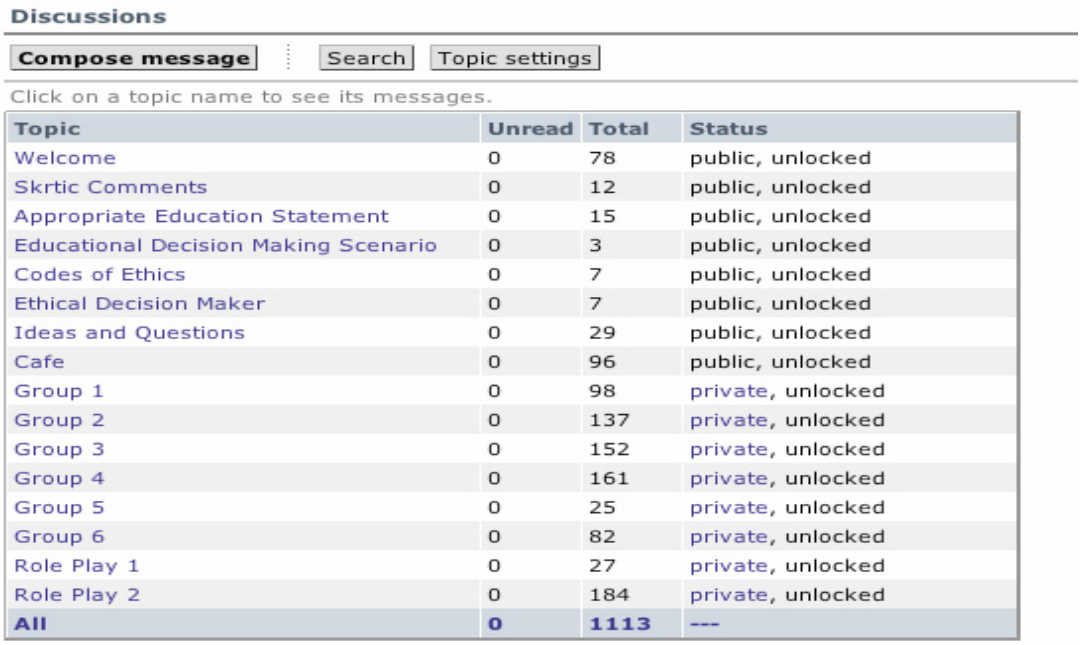
Upon completing the following activities:

1. consider and examine the context of a student/family with complex educational and related needs
2. participate in a collaborative planning process
3. develop a personal program plan
4. contemplate what program delivery might be like

you should be able to demonstrate the following:

- appreciate a deeper understanding of the extent and limitations of roles played by the student, family members, school based staff, and support staff from outside the school
- identify skill sets and knowledge required to *consider and examine*, *participate*, *develop* and *contemplate* in working within a collaborative process
- recognize the resources that all people bring to the planning table
- articulate goals for the student and the context that are collaboratively agreed to
- brainstorm an array of tactics, strategies, and solutions in building an action plan
- develop sensitivity and self awareness of personal collaborative style.

Figure 3. Collaborative Assignment Objectives Artifact



Discussions

Compose message | Search | Topic settings

Click on a topic name to see its messages.

Topic	Unread	Total	Status
Welcome	0	78	public, unlocked
Skrtic Comments	0	12	public, unlocked
Appropriate Education Statement	0	15	public, unlocked
Educational Decision Making Scenario	0	3	public, unlocked
Codes of Ethics	0	7	public, unlocked
Ethical Decision Maker	0	7	public, unlocked
Ideas and Questions	0	29	public, unlocked
Cafe	0	96	public, unlocked
Group 1	0	98	private, unlocked
Group 2	0	137	private, unlocked
Group 3	0	152	private, unlocked
Group 4	0	161	private, unlocked
Group 5	0	25	private, unlocked
Group 6	0	82	private, unlocked
Role Play 1	0	27	private, unlocked
Role Play 2	0	184	private, unlocked
All	**0**	**1113**	---

Figure 4. A Course Discussion Forum Artifact

The ability to use complex thinking-defined by Jonassen (2000) as integrating creative, critical and information-based thinking within an online environment was another skill required by special education teachers. This skill was important for the application and integration phases of certificate course content. Students needed to be able to apply these skills both collaboratively and individually in the management of complex learning environments. As noted by Huang (2002), this type of approach that is learner centered and collaborative using constructionist-learning principles (i.e. active, real life learning using prior knowledge and reasoning) as applied to adult learning has been increasingly used in online learning environments. Further, these pedagogical practices when applied to an online learning environment occur when distributed problem based scenarios are developed and worked cooperatively among students over time (Jou, Chuang & Wu, 2010; Naidu, 2003). Consequently, to facilitate the development of complex thinking skills, problem-based scenarios were included in certificate courses with the scenarios becoming increasingly difficult with each course.

A school-based practicum experience as the next to last course would provide a further concrete opportunity to improve students' skills in this area. This component of online development mirrored the application and integration phases of the certificate course content, as delineated by the department in the certificate proposal and originally implemented in the face-to-face offerings.

Course-level instructional design. Eight three-credit (one semester) and one, six-credit (two semester) courses make up the certificate program. Allotted time for course development varied between three to six months, which encompassed approximately 100-150 hours of development time. The program director a member of faculty, in the role of principal content developer for the certificate, was responsible for the recruitment of SMEs. Careful consideration was given to selection of the SMEs from faculty and professional bodies in the province involved in the delivery of special education services. Subject matter experts were recruited from special education stakeholder groups including the government, the local school divisions, and the Council for Exceptional Children and faculty. All had previous experience instructing graduate face-to face courses in special education along with a professional background in the discipline coupled with extensive knowledge through field based experiences related to the provision of student support services (i.e. special education). These individuals were approached by the program director to insure quality development and enhance credibility among those involved in provision of services to students with exceptionalities.

The instructional design planning document incorporated the key features of the TEL development template for online courses. The planning document included a list of team members and contact information; an outline of the course organization; resources to be used (including textbooks, multimedia, WebCT); a course assessment plan; dates for completion and delivery to students; and a budget. In addition, the planning document integrated

course objectives and learning activities into the template items that were not part of the original TEL template. The instructional design planning document was completed within the first month of course design by the SMEs and instructional designer/project manager and forwarded to the program director for content approval.

Completing this document usually required one to three face-to-face meetings; depending on how familiar the SMEs were with the design of online learning. The instructional designer was responsible for ensuring that learning activities and assessment matched both the course objectives and the learning needs of online students. The instructional design phase was revisited several times during the development of course materials to ensure a goodness of fit with online development and course objectives as articulated by the department.

Course development. Upon completion of the initial instructional design, the development team (i.e. instructional designer, project manager, subject matter expert, and a representative from the division of media technology) met to discuss content development. The feasibility of timelines and budget were closely scrutinized at this stage. Course development for the certificate was divided along the following organizational structures at the university. First, SMEs wrote mini lectures and descriptions of assessments for course themes. They identified course-reading materials that would be included as either online resources or in printed readings packages. Second, the Instructional Design Group then cleared written copyright and professionally-edited content, put together the readings packages, created HTML pages and uploaded content into WebCT. Third, the Division of Media and Technology produced audiovisual resources (see Figure 5) such as audio-based web pages, interactive images (see Figure 6), video and reproduced multi-media resources such as DVDs as required by the students. Information Technology Services then created the databases used for online courses.

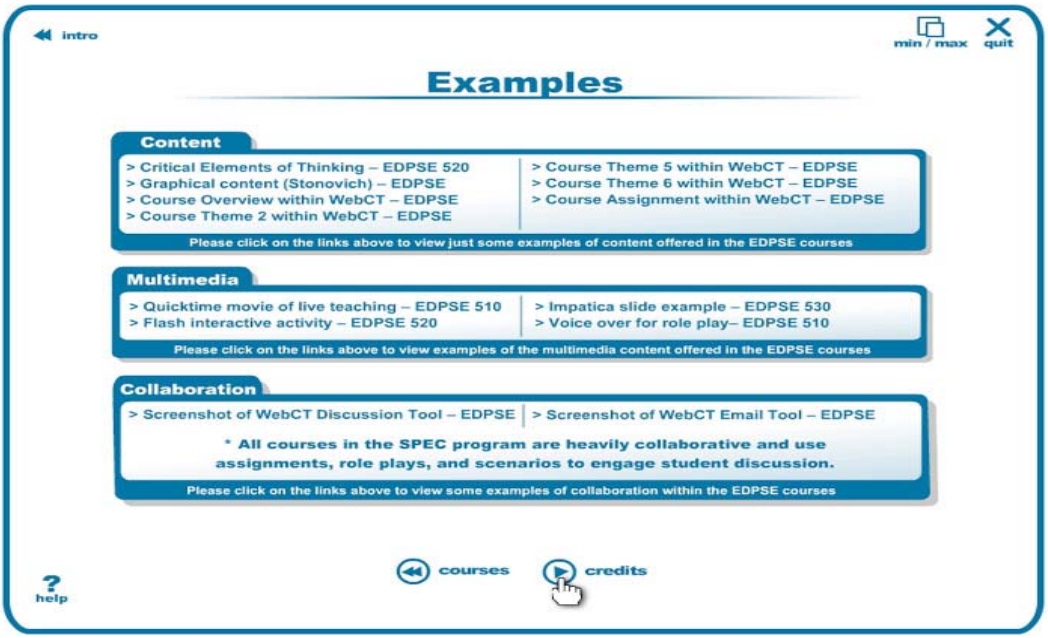


Figure 5. Examples of Audiovisual/Course Content

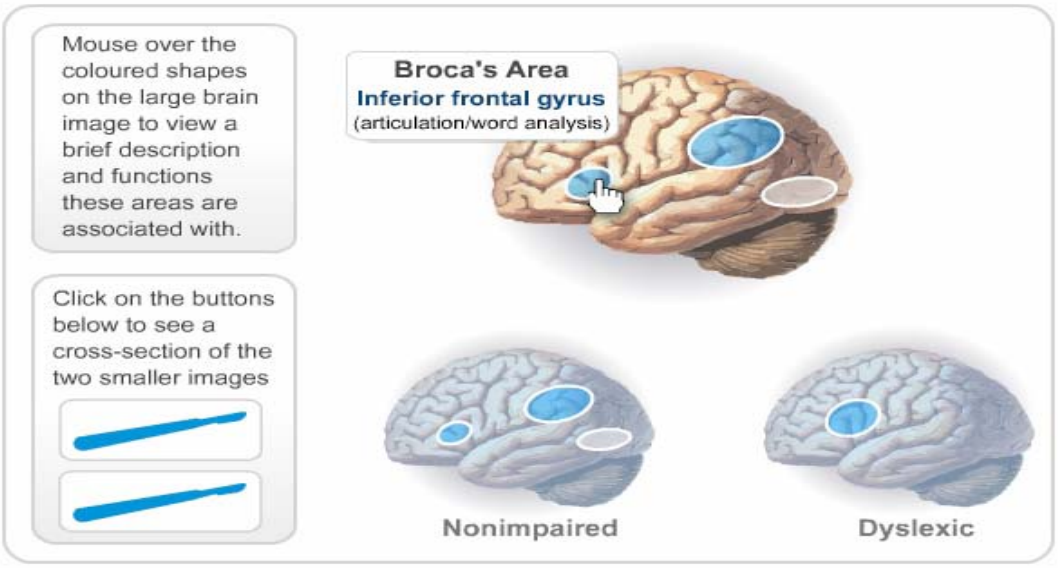


Figure 6. Flash Interactive Image Artifact of Dyslexic Brain

With the completion of the online development, a pilot online offering was provided to students. During the course pilot, the program manager, who was also the instructional designer, acted as a support person for both the instructor and the students in order to identify ongoing issues that instructors and students would have. The choice to use the program manager instead of the director for the program was based on their knowledge of the online learning platform being used and their ability to troubleshoot issues that arose around the program's implementation with both instructors and students. Information Technology Services provided courses for the instructors on how to use WebCT course delivery tools and provided a helpdesk system for technical questions. Having technical support for both faculty and students in online learning environments is a key component of maintaining successful online courses. Owusu-Ansah et al. (2011) suggest discussing with students areas of difficulty accessing online material and how to 'troubleshoot' or get help from information technology support. Having support staff available and collaboration with other faculty who know more about technology needed can be very helpful in making teaching online courses less challenging (Owusu-Ansah et al., 2011). By understanding the difference between online and face-to-face learning environments, faculty members will better be able to design online courses and be able to shift from one modality to the other (Keengwe & Kidd, 2010). Online instruction shares many features with face-to-face teaching, however, its flexibility for students makes it unique. When comparing face-to-face to online learning Keengwe and Kidd (2010) explain that online learning "goes beyond planned subject learning to recognize the value of the unplanned and self directedness of the learner" (p. 534). For some faculty members, realizing that face-to-face and online environments are so different requires support programs to help them gain the skills and knowledge related to course delivery and facilitation in an online environment (Keengwe & Kidd, 2010).

It is also important that supportive pre course instructional activities be provided for learners to acquaint them with the tools and their usage so they understand their role and responsibilities in online learning environments. This is necessary because "many online users apply face-to-face communication skills to an online environment" (Tu, 2002, p. 21). Moreover, these activities will promote retention of students in an online learning environment because they have learned the necessary readiness skills required for online learning (Packham, Jones, Miller, & Thomas, 2004). If online learning is an accessible and flexible learning environment and if educators desire their learners to be highly collaborative in their professional practice then it is important that learners are provided the requisite training necessary to embrace online learning. Since many students enrolled in the program came with varying computer literacy skills. A mini orientation on WebCT was created online that would show up one month before the course start date.

LESSONS LEARNED

To help conceptualize effective practices relevant to the development, implementation, and instructional design of a post-secondary online program, a visual model is depicted. The model is based on Greer's (1992) project management for instructional design, but also blends structural components relating to the process of implementation for online programs. In Greer's (1992) model there are three phases that include project

planning, instructional development and follow-up. Project planning includes the determination of the scope of the project (i.e. materials, schedule and cost estimate) and project organization (i.e. assigning team members, start off meetings, and work schedule). The second phase of Greer's (1992) model comprises program instructional development. This phase, according to Greer (1992) is comprised of five steps. These steps include the gathering of information needed for instructional development, the developing of a blueprint for content development and the creation and testing of draft materials which then result in the production of the final content masters. The third phase is defined as follow-up, whereby materials are reproduced and distributed.

What differentiates the present model from Greer's (1992) work are nuances specific to the implementation process of a newly-developed program that are integrated within an instructional design project development framework. As illustrated in Figure 7, the seven-phase process for program implementation includes: program implementation planning; program content development; program development management structure; program instructional design; program implementation; program revisions and maintenance; and program stabilization. Within each phase are actions for effective practices and the resulting impact of such actions on the program. From an implementation perspective, the practices articulated are based on what are deemed most important to the development of an online program.

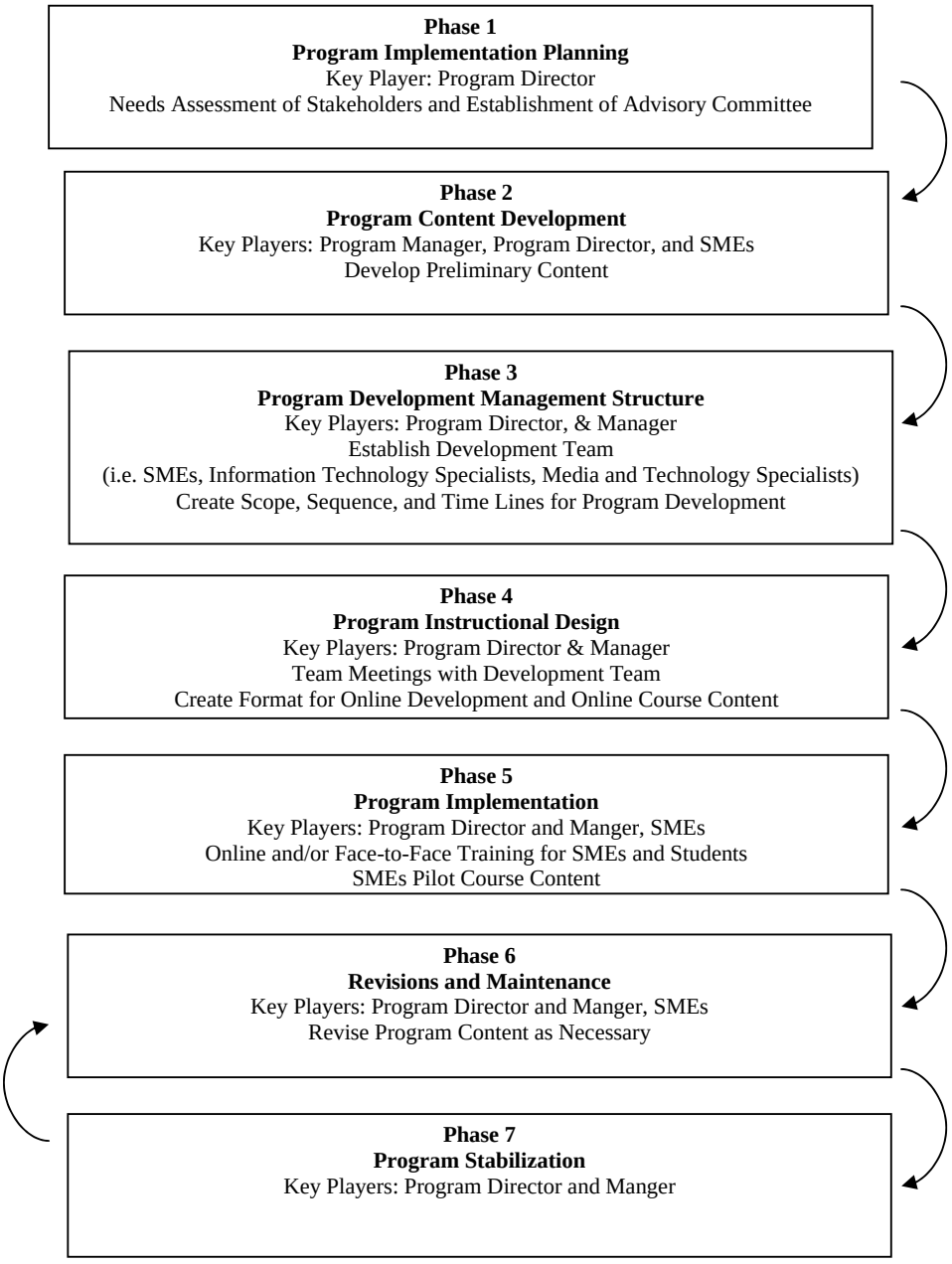


Figure 7. An Instructional Design Model for Program Implementation Development

The first phase of the model pertains to program implementation planning. Salient features of this phase relate to the undertaking of a needs assessment and the formal involvement of stakeholders in the implementation planning process. The purpose behind a needs assessment is to identify stakeholder requirements and how those needs can be met. Stakeholders in this instance refer to those professionals or organizations from which community-based support is derived and input requested surrounding the content and purpose of a specific program.

As the first phase of online program implementation, the identification of stakeholders and their formal involvement in the governance structure of a newly planned program through an advisory committee is viewed as essential if partnerships are to be established. From a program management perspective, this is important because it begins to formalize some of the existing informal linkages that might have already developed to

accommodate service delivery. This phase is characterized by public relations initiatives conducted by program directors to inform community members and professionals alike regarding the efficacy of a particular program. Program directors promoting online learning need to have highly developed communication skills as public education seminars and cultivation of stakeholder allies who would advocate for the program's implementation are viewed as essential and necessary to creating community readiness for a newly developed online program. Shea-Schultz and Fogarty (2002) argue that stakeholder involvement is of paramount importance to achieving buy-in for newly developed online learning initiatives. Making the business case for online learning requires outlining the benefits to key stakeholders that includes the need, cost effectiveness, accessibility, and flexibility of online learning environments. Moreover, by actively involving stakeholders in the governance structure through an advisory committee ensures that they will have a voice in the creation of a newly developed online learning environment and be supportive of its implementation.

The second phase of the model relates to program content development. In this phase the initial content model is developed. Program content development is derived from input provided by the needs assessment and stakeholders. In turn, as content is developed, feedback to stakeholders can be provided ensuring their involvement in the process. Our experiences led us to believe that content first delivered in a face-to-face format is more easily developed for online learning because the SMEs recruited to develop the online content have the opportunity to develop and experiment with the content in a more traditional manner of delivery that they were comfortable with. As a result, some of the issues pertaining to the structure and flow of content delivery are addressed and revisions to the original content model are more easily facilitated by the SMEs, who now have experience in its delivery.

The program content development phase should see the initial formation of the content development team that includes all SMEs involved in content development, the program director, and project manager. Team meetings facilitated by the program director and project manager are held whereby a timeline for face-to-face delivery and online development are presented. Collaborative consultation should characterize the team meetings with topical discussion surrounding the sequencing of deliverables, thereby ensuring a more even and informed approach surrounding content development of the program.

The third phase of the model involves the establishment of the program development management structure. In this phase, the real job of the project manager begins. A project management team is established based on required resources for the program in question. In this case, the project management team included representatives from the Instructional Design Group, Information Technology Services, and the Division of Media and Technology. The project manager and program director outline the scope, sequence, roles, responsibilities, and budget allocations for the project management team. A timeline for development is discussed, as are the means to enhance both vertical and horizontal communication through regular meetings of the project management team. At these meetings status reports pertaining to program development are presented.

Phase four of the model is concerned with program instructional design. Team meetings characterize this phase of the model with the SMEs. If SMEs have had the opportunity to deliver the program to be developed for online learning in a face-to-face format then the transition to online content development is easily facilitated. During this phase, a format for online content development is established. This provides a consistent look and feel for the online platform being used across courses in the program. Critical to this phase is the need for training of the SMEs in online content development. It is advisable that in large post-secondary learning organizations that an accessible training session on the use of tools and instructional methods common to the online platform be provided.

The SMEs then meet on an individual basis with the program director and project manager to draft a contract and establish milestones for the deliverables of all content. The SMEs are responsible for the development of content themes, in consultation with the program director. Contracting the SMEs, and establishing milestones for deliverables tied into a schedule ensure the timely delivery of thematic content. The project manager then drafts the instructional design document that outlines specifics relating to course description, pre and co-requisites, credit hours, student assessment, project team members, learning resources, and themes working individually with the SMEs towards the online development of the themes for a specific course. Depending on the resources required to develop the course, the project manager/instructional designer will consult with other members of the project management team for purposes of integrating audio, visual, or print resources.

Program implementation characterizes the fifth phase of the model and involves the piloting of a particular course or program. At the implementation phase, all SMEs who have delivered the course face-to-face and have developed online content now have the opportunity to pilot the online version. Having received training in the

use of the online platform, the SMEs now have the opportunity to work through the implementation of the course, which is crucial for the revisions and maintenance phase, as the knowledge and experiences garnered will aid in further development of the course or program.

For students enrolled in online courses, opportunities are made available for either face-to-face or online training in the use of the online learning platform. Students should also have requisite knowledge of relevant computer technologies. The ability to use the Internet, navigate web pages, send email with attachments, and understand the rudiments of word processing programs is essential if the individual is to succeed in online learning. It was found that those enrolling in the certificate came to the program with a wide variety of competence in the use of computer technologies. Research surrounding web-based instruction has demonstrated those students who lacked confidence in their internet skills, and who did not have the proper tools or access to the appropriate computer technologies, tended to dislike online learning (Thompson & Lynch, 2003).

The establishment of feedback linkages to the funding agency and other stakeholders also characterizes the program implementation phase. Every effort is made to monitor program implementation, so that challenges to the process of implementation are addressed. Optimally, revision and maintenance of course content would lead to short cycle decisions that would better inform program implementation and lead to program stabilization, phase seven. Given the model presented, a feedback loop between phase six, revisions and maintenance, and phase seven, program stabilization, is depicted indicative of the necessity for the revising and maintaining of online program content that ultimately leads to program stabilization.

LIMITATIONS

The study is limited in that it is a single case study design based on a coordinated decentralized cost-recovery business model in which distant or continuing education initiatives were pre-existing within the institution. The interpretation and generalization of this study needs to be understood within these limitations.

CONCLUSION

The collaborative design and implementation of online courses is a multifaceted process when a whole program is to be launched, as opposed to an individual course. The model presented for replicable online learning practices is based on experiences in developing the Post-Degree Certificate in Special Education as illustrated in the case study. Within this context, the model developed represents best practices for a coordinated decentralized team approach to online development in newly developed online learning programs that are funded at the post-secondary level. Although research pertaining to effective practices for program management for online courses has been published (i.e. Greer, 1992; Caplan & Graham, 2008; Naidu, 2003), the present model is unique because it captures nuances specific to the implementation process. In conclusion, from a project development perspective collaborative consultation and the establishment of interdisciplinary partnerships require a clear delineation of the scope and sequence of a project and the ensuing roles and responsibilities formulated for the project design team to ensure that a quality product is delivered on budget and on time.

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