

## Reflective Practice and Inquiry in Professional Development for Online Teaching

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### Abstract

This article is a resource for those new to online professional development. It describes professional development training for faculty preparing to teach online. The primary focus of the training is on pedagogical rather than technical skills. This focus is central for encouraging reflection and inquiry to improve teaching practices. The discussion and summary of results provide an overview of the training and evidence of reflection and inquiry.

**Keywords:** Faculty development, online teaching and learning, assessment, student-centered learning, constructivism

### Introduction

The authors developed, implemented, and facilitated a program to train and support faculty in the effective use of an online course management system, WebCT/Blackboard, at Anna Maria College (AMC). This article describes the rationale, planning process, implementation, assessment, and future goals for ongoing professional development to support online teaching and learning at AMC.

Few faculty members possess the pedagogical or technical ability to effectively develop and deliver online courses (Oblinger & Hawkins, 2006). In addition, regional accreditation requirements recommend an ongoing program of technical, design, and creation support for faculty members using distance education (New England Association of Schools and Colleges, 2001). Regional accreditation also requires that students enrolled in online courses acquire levels of knowledge, understanding, and competencies equivalent to those achieved in similar programs offered in more traditional time periods and modalities. Considering the need and mandate for professional development, AMC supported the development of a faculty certification course to enhance pedagogical and technical skills.

The primary focus of AMC faculty is on the growth and success of their students. Faculty professional development centers on teaching and learning, with the mission of faculty development at AMC to value reflective practices that result in systematic assessment, quality improvement, and openness to growth. To support this mission, the facilitators used an educational philosophy based on research in the field of cognitive psychology and the philosophy of John Dewey (1938). Both Vygotsky (1986/1934) and Dewey believed that thought is a tool and that ideas have flexibility. Vygotsky considered cognition to be primarily a social experience. A zone of proximal development occurs when the person transfers abilities from a shared environment to knowledge within the self. A philosophy in which learning is internally created and socially mediated is called constructivism. A constructivist educational philosophy guides preparation and influences the delivery of faculty professional development at AMC.

Because faculty development focuses on improving teaching, the facilitators used elements of constructivism in designing the WebCT faculty certification course. Adams (2009) explains that relationship building, collaboration, inquiry, and reflection are central elements of constructivism. These elements are seen in the course in several discussion topics. For example, the *Introductions* discussion topic builds relationships, and reflection is encouraged throughout all the discussion questions.

The faculty certification course incorporates a student-centered approach that should produce significant learning. Fink (2003) defines significant learning with a process and an outcome dimension. The process

of learning begins by activating prior knowledge. During the process of learning, participants are highly engaged. The outcomes include significant and meaningful change. Using a student-centered approach could present a potential challenge because faculty develop conceptions about teaching based on their experiences as a student or novice teacher and may have established an orientation to teaching that could limit the way they provide instruction (Holmes, 2004; Northcote, 2009).

Engagement happens with hands-on practice, which is essential to significant and active learning. Constructivist beliefs are the basis for active learning (Stewart, Bachman, & Babb, 2009). The Association for Supervision and Curriculum Development (2010) states, "Active learning is based on the premise that if students are not active, they are neither fully engaged nor learning as much as they could" (para. 11). Course facilitators should consider that active learning may need to be taught, and that participants may resist active learning because they have prior expectations about learning and teaching (Michael, 2007). In addition, facilitators need to be explicit about course pedagogy for the participants to understand the principles of constructivism, significant learning, and active learning.

The facilitators use many techniques to produce significant and active learning during course implementation. These techniques include (a) communicate high, but attainable, expectations clearly; (b) explicitly relate current learning to prior learning; (c) offer a variety of ways to learn; (d) encourage hands-on practice; (e) present information visually; (f) support reflection; (g) provide prompt and concrete feedback; and (h) assign tasks to include revisions (Chickering & Gamson, 1987; Suskie, 2009). Ideally, the WebCT faculty certification course will recognize, develop, implement, and evaluate innovative and effective teaching and learning strategies that foster college student engagement.

## **Method**

### *Rationale*

AMC adopted WebCT as a course management system in spring 2005. Within eighteen months, eleven faculty (about 20%) were using the system without any formal training. AMC's Dean of Academic Affairs invited the facilitators to develop a certification training model for all faculty members who used the WebCT course management system. The goals of the mandatory training would be to assure consistency, quality, and integrity in academic programs, and provide full-time and adjunct faculty members with the opportunity for enhanced and meaningful interaction focused on teaching and learning.

The AMC Electronic Learning and Teaching (ELT) committee reviewed, approved, and recommended the faculty certification course to the Dean of Academic Affairs. The ELT committee decided the certification course should be comprised of technological training (30%) and pedagogy (70%). It should also include a general WebCT orientation, discussion of terminology, effective practices in e-learning and teaching, mentoring, and coaching. Faculty participants must successfully complete 80% of the course to become WebCT certified.

The original version of the course was delivered to the first group of faculty in December 2006. The course has since been taught eight times with the technical support of the WebCT administrator. The course is presented in a blended model and has been revised each semester to better meet the needs of the faculty and to model effective teaching practices. The number of face-to-face sessions has varied based on feedback, faculty need, and technological skill level.

### *Participants*

The Dean of Academic Affairs invited full-time and adjunct faculty members interested in using the WebCT course management system to participate in the training. To date, fifty-one faculty members (thirty-six full-time and fifteen part-time) successfully completed the course. Certified faculty represent a variety of academic disciplines: nursing, education, humanities, business, criminal justice, science, visual art, music therapy, sociology, psychology, fire science, and social work.

### *Design*

The certification course was comprised of technological training or process skills and pedagogy or content knowledge. The facilitators purposefully designed the course to guide the participants to differentiate between these skills and knowledge to effectively teach in the electronic learning environment. In designing the course, the facilitators considered faculty members' personal experiences with teaching and learning, technological skills, and subject expertise. The plan was to create a community learning environment where faculty could work together as both students and course designers. The facilitators developed intellectually stimulating activities to promote a deeper

understanding of active teaching and learning. Designed activities allowed participants to explore technology, assessment strategies, pedagogy, reflective teaching and learning, and innovative practices.

In designing the faculty certification course, the facilitators used a variety of resources. They relied on the Quality Matters (2006) standards and website as well as information from the WebCT Impact 2006 8th Annual User Conference (Henne, 2006; Smith, 2006). Because the facilitators are both from the field of education, they used research from Bloom (1956), Chickering and Gamson (1987), Darling-Hammond and Bransford (2005), Fink, 2003; Vygotsky (1986/1934), and Wiggins and McTighe (1998).;

### Course Objectives

The facilitators designed the WebCT course so that participants experienced it from both course designer and student perspectives. The course and syllabus were developed to support the following objectives. Activities and experiences were designed to facilitate participants' ability to:

1. Discuss effective teaching and learning.
2. Utilize a variety of questioning strategies (open-ended, clarifying, values, connective, relational, synthesizing, and application).
3. Discuss research-based practices to include the importance of peer review.
4. Practice course design in the WebCT environment.
5. Develop a syllabus using a template and posting the syllabus to WebCT.

The first two objectives were the primary focus for the faculty certification course. Participants experienced the student perspective as members of the course and as course designers; a "sandbox" was available where they could experiment with the development of a course that they would teach in the future.

### Implementation

Faculty members who participated in the course shared their interests and expertise during face-to-face meetings and through online discussions. Facilitators encouraged participants to discuss effective teaching and learning strategies through the discussion topic. They guided participants to use a variety of questioning strategies. The first three topics, *Introductions*, *Netiquette*, and *Community Icebreakers*, were led by the facilitators, and methods for asking open-ended questions were modeled. The questions were posted in a discussion thread.

Next, participants were instructed in the technique for facilitating a discussion thread. First, they read a short article and reviewed a sample open-ended question. Alone or with a partner they wrote a lingering question in paragraph form. The expectations for the open-ended question were that it be original, relevant, and elicit a range of responses. The questions began with a link to the reading. After writing the paragraph, participants shared their questions through the discussion board.

For the remainder of the course, participants were assigned responsibility for leading discussions on predetermined topics that focused on the course content readings; those who were not leading the discussions were discussion participants.

After the first group of participants facilitated a discussion, both groups reflected on and discussed the following questions:

- How did it feel to be a facilitator?
- How did it feel to be a participant?
- How might you provide feedback on discussions?
- What criteria would you use?
- How will you encourage students to be active and involved?
- How much will participation and discussion be worth in your course?

Participants were asked to consider how they might use discussions to promote learning within their

courses. The facilitators shared sample rubrics to assess participation in discussion topics. The remainder of the course developed technical skills while reinforcing effective teaching and learning strategies.

### Measurements and Analysis

To determine the effectiveness of the WebCT faculty certification course, the facilitators measured and analyzed course discussion threads, participants' sandboxes, and the course evaluations. Ongoing analysis throughout the course served to provide formative assessment, and the course was revised based on needs, interests, and preferences. In a summative fashion, the analysis was used to improve future revisions of the course. Data were analyzed to generate categories, comparisons, and relationships among responses. Through open coding, data were closely examined and compared for similarities and differences. The analysis identified participant inquiry and reflection, which are indicators of significant learning (Fink, 2003) and central elements of constructivism (Adams, 2009).

*Discussion Threads.* Throughout the course, participants engaged in online conversations through discussion threads. The threads were divided into different topics that allowed participants to create discussions around specific subjects. The facilitators provided materials and resources including scholarly articles, PowerPoint presentations, and URLs on each topic. Directions for how to participate in each discussion thread were provided and included guiding questions to help participants focus on inquiry and reflection.

*Facilitator-Led Discussions.* The facilitators led the first three discussion topics, *Introductions*, *Netiquette*, and *Community Icebreakers*. The goal was to model methods for responding to participant postings by rephrasing key points, providing additional resources, and asking open-ended questions to promote further discussion. Participants were expected to respond to the initial posting, to two other participants, and to anyone who responded to them.

*Introductions.* The first discussion topic led by the facilitators was *Introductions*. The purpose of this topic was to encourage participants to learn about each other beyond the classroom environment, to model open-ended questioning techniques, and to demonstrate responses that promote discussion. Participants introduced themselves to their colleagues and answered one of the following questions:

- If you were on a deserted island and could only bring one book, which book would you bring? Why?
- If you had to describe yourself as an animal, which animal best matches your personality? Explain?
- What are three websites you go to every day and why?

Analysis of the *Introductions* thread showed participants sharing personal information, identifying commonalities, asking clarifying questions, and providing resources to their colleagues. Facilitators responded to each participant by commenting on a point of interest in the posting, adding personal information, and asking an open-ended question to encourage additional discussion. The *Introductions* topic provided an opportunity to build a sense of community and presented a chance to preview participants' netiquette skills.

*Netiquette.* The second discussion topic, *Netiquette* or rules that guide electronic written communications, required that participants review a PowerPoint presentation. The facilitators provided the following guiding questions:

- How did you learn the "rules" of emailing?
- Can we assume students know our rules?
- How will you communicate your expectations about netiquette to students?
- Would you add any rules or considerations that we may have missed in the PowerPoint presentation "What Is a Quality Course?"

Analysis of the *Netiquette* topic demonstrated that participants learned netiquette as they learned new technology. Participants discussed that as technology changes there are new expectations that can create confusion. They reflected that new technology requires a learning curve for teachers and

students, trial and error, observing others, and assistance in learning the rules. Because of the learning curve, instructors should assume nothing, set clear expectations, hold students accountable, and have a student policy and procedure guide.

The majority of participants who responded to the final guiding question felt that the PowerPoint presentation adequately covered the rules and considerations of netiquette. One participant suggested an addition to the PowerPoint in regard to the lack of ability to read body language with online communications. This response became the focus of a reflective discussion about the importance of considering the fact that students who communicate nonverbally may initially find the online environment difficult to navigate. After reading the discussion about nonverbal communication, a participant responded, "I wonder if students who have visual limitations could be able to teach us something about this. How do these students make up for the lack of visual cues when they participate in face-to-face courses? Is there something they can teach us that would make electronic learning more effective?"

*Community Icebreakers.* The third discussion topic, *Community Icebreakers*, is the last of the initial facilitator-led discussions. Participants were asked to read and reflect on the *Seven Principles for Good Practice in Undergraduate Education* (Chickering & Gamson, 1987). The guiding questions that provided focus for the *Community Icebreakers* topic were:

- How do icebreakers fit in?
- How do you make learning collaborative and social?
- How do you build community?
- How will you have students participate in activities that encourage them to get to know each other?

Analysis of the *Community Icebreakers* thread showed that participants shared a variety of specific icebreaker activities they have employed in their classrooms. Ideas included sharing a favorite website, providing information about a favorite book or hobby, or participating in an online survey on learning styles and discussing similarities and differences. In addition to sharing ideas about icebreakers, they reflected on the assigned readings.

*Participant-Led Discussions.* After sharing in an activity designed to assist participants with the development of open-ended questions, participants were assigned responsibility for facilitating discussions that focused on the course content readings; those who were not leading the discussions were discussion participants. The facilitators posted an opening question, responded to all participants, worked to keep the discussion thread on topic, and provided a summary of the thread to include a list of any resources. The topics that were led by participants were *Objectives*, *Learner Interaction*, *Resources and Materials*, *Assessment and Measurement*, and *Effective Feedback*.

*Objectives.* Facilitators for the *Objectives* discussion were asked to reflect on the Quality Matters (2006) standards for learning objectives. Guiding questions included:

- *How will you write measurable objectives?*
- *How will you design your course to meet your objectives?*
- How many of the competencies identified in the article do you possess?

Analysis of the *Objectives* topic demonstrated that participants reflected on objectives from a variety of experiences. Participants who were new to teaching requested pragmatic assistance with generating objectives. Participants who taught in programs that involved external accreditation helped others to realize the requirements of predetermined course objectives.

Some participants discussed the importance of reviewing objectives throughout the semester. Others reflected on objectives as they relate to the program level, course level, and lesson level. One participant stated, "the course objectives should flow well from the program objectives. I will be working to ensure that the individual unit objectives also flow well from the course objectives."

*Learner Interaction.* Facilitators for the *Learner Interaction* discussion were asked to reflect on the Quality Matters (2006) standards for learner interaction and use the following guiding questions to frame their discussion:

- *How will you use questioning techniques in your course?*

- *How will you use instructional strategies and WebCT components to promote learner interaction?*
- How many of the competencies identified in the article do you possess?

A question generated by one of the facilitators for the *Learner Interaction* thread presented an example of reflection on the need for liveliness in teaching.

Liveliness appears an essential ingredient in bolstering and assuring levels of active participation. It seems, then, apparent that the media used for relaying course content can either elicit or dampen curiosity! If we seek to cultivate high levels of motivation and stimulate intellectual and personal growth on the part of hopefully many excited learners in the class, what practical steps can be taken to foster this good "Learner Interaction" and build genuine interest?

The summary of the discussion on liveliness in teaching provided a synthesis of the discussion and an overview of the breadth and depth of the topic that was covered in the discussion.

Our discussion yielded a sense of the potential and promise that new media offer to the academy as well as a cautionary sensibility around possible denigration of the teaching enterprise when and if resources are poor or lack truth in reporting. . . . I do think we can make the claim that a critical evaluation of resources may preclude problems and ensure a class is committed to veracity as well as creativity in the new, media-rich contexts we currently enjoy and which can surely enhance the learning experience and our life ventures.

*Resources and Materials.* Facilitators for the *Resources and Materials* discussion reflected on these guiding questions:

- How do your instructional materials have depth in content and comprehensiveness for the student to learn the subject?
- How do you accommodate different abilities of students?
- How do you present instructional materials in a format appropriate to WebCT, which are easily accessible to and usable by the student?
- How do you make the purpose of the course elements (content, instructional methods, technologies, and course materials) evident to students?

Analysis of the *Resources and Materials* thread illustrated participants' willingness to share the materials and resources they used and ways they might change as they move to an online format. "Some of the issues brought up included how to utilize technology for group work and the challenge of how to overcome the 'face-less,' impersonal aspect of online teaching." Resources were provided that discussed the issue of technology in the classroom and the important consideration that both students and faculty come to the classroom with differing technology skills. Other discussions "raised the question of information versus knowledge and of material that might be classified as entertainment and what educational purpose that material might have." Some postings posed questions regarding the "use of 'open sources' such as Wikipedia and the educational value of them if used properly."

*Assessment and Measurement.* Facilitators for *Assessment and Measurement* reflected on a PowerPoint presentation that focused on Quality Matters (2006) standards for assessment and measurement. Guiding questions included:

- How do you align the types of assessments selected to the learning objectives and course activities and resources?
- How is your grading policy transparent and easy to understand?
- Are the assessments selected appropriate for WebCT?
- Do you use both formative and summative assessment strategies?

Analysis of the *Assessment and Measurement* thread showed participants shared practical strategies and tools for assessment and discussed the pros and cons of a variety of methods. Exploration of assessment in inquiry-based learning promoted discussion of authentic assessment and the use of rubrics "guided by what the real world expects of a practitioner in the field." Participants reflected that

“obtaining input from students in the development of rubrics, or relying on the requirements of an external body or professional performance standards” may be helpful when developing assessment criteria. Participants grappled with “achieving equitable assessment when students may be bringing different experiences and perspectives to the project.”

*Effective Feedback.* Facilitators for the *Effective Feedback* discussion were asked to reflect on:

- Which strategies provide effective feedback to the student?
- How do you use formative assessment strategies?

Analysis of the *Effective Feedback* topic demonstrated that there was a general consensus among participants regarding the definition of effective feedback. They agreed that “effective feedback should include positive and encouraging language with importance on being polite and respectful. In addition, the content must be relevant and individualized.” A list of attributes that can and should be observed were developed:

- Timely
- Clear
- Thorough
- Consistent
- Equitable
- Professional

Participants discussed different ways feedback could be delivered by the instructor as well as “mechanisms that best enable students to self-assess their own performance.” A majority of participants were able to gather the information they needed for feedback from classical methods of outside assignments and quizzes. “Should a student exhibit difficulty in any area, the instructor would schedule a conference and try to work with the student on a more individualized basis.” Most of the participants felt this model could be easily adaptable to online learning.

The final discussion topics, *Best Practices* and *Resources for Further Study*, were led by the facilitators. At this point in the course participants had completed instruction on course design and had worked in their sandbox. Each discussion topic opened opportunities for reflection and inquiry. As the course continued and colleagues shared their thoughts, reflective topics such as the discussion on nonverbal communication were added to course content.

*Sandbox.* Participants designed their initial course in a sandbox or course shell. Designing in the sandbox allowed for hands-on practice and permitted facilitators to provide prompt and concrete feedback on the three layers of course design. Participants reflected on the feedback and used inquiry to make the required changes.

Layer One is the initial display or homepage of the course in WebCT. It includes the color scheme, upper and lower text blocks, preloaded links to Layer Two, and a frame with a preloaded course menu. There are nine items on the standardized course design template in Layer One. See Figure 1 for a visual representation of the layers.

Analysis of the common errors in Layer One included:

- Changed the colors of the course template or background color of the text blocks.
- Added too much information or too little information to the upper text block, which was designed to provide the basic course information (course number, course name, class meeting day, times, place, and instructor’s name).
- Added additional links to the four preloaded links.
- Omitted the date in the lower text block, which is intended to initially welcome students and provide updates as the course progresses.
- Did not change the preloaded message in the lower text block.
- Created a message that might not be perceived as welcoming in the lower text block.

- Deleted or added too many links to the course menu, which included four preloaded links. Participants could add up to two additional links; some added up to six additional tools.

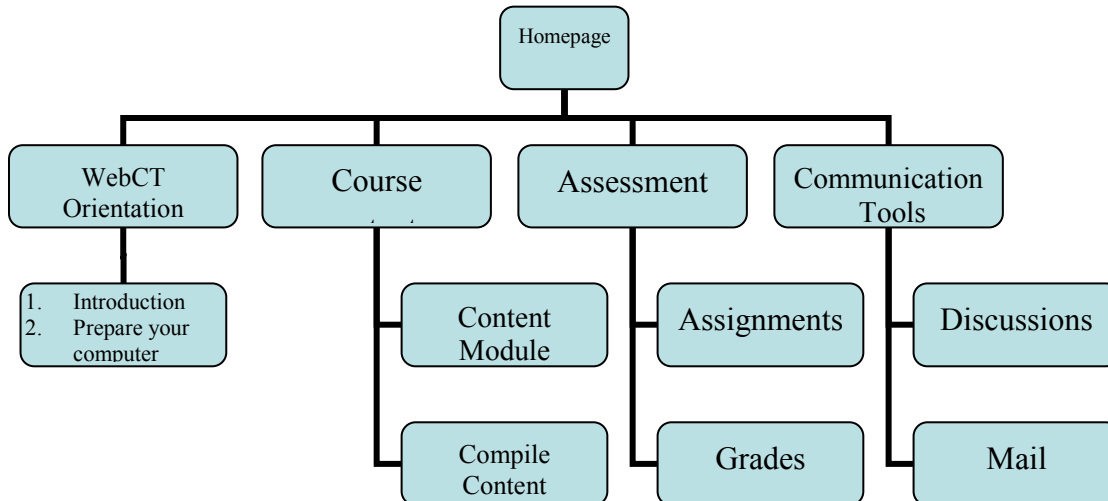


Figure 1. Visual Representation of Course Design Layers.

Layer Two of the AMC standardized course design template has five sections: course content, assessment, communication tools, the syllabus, and resources. Analysis of the common errors in Layer Two included:

- Neglected to upload the course syllabus file to the syllabus tool.
- Overlooked using the AMC standardized template to develop the course syllabus.
- Unchanged preloaded items of additional materials and Web links.
- No pages or tools added to resources, which is linked to the course menu.

Participants added their specific course materials to sections in Layer Three. There were a total of four items in Layer Three: adding information to course content, assessment, communication tools, and resources. Analysis of the common errors in Layer Three included:

- Failure to upload files to the headings in course content.
- Not adding details such as due dates, questions, and points in assessment.
- Failure to add instructions for students in discussions.
- Included `http://` twice when adding a URL to resources.

Layer Three presented the most difficulty based on the analysis of the data. In Layer Three, participants needed to upload files and create the delivery model for their course. Layer Two required the least amount of additions because the WebCT administrator preloaded much of the layer into the course shell. The facilitators provided specific and concrete feedback on the sandbox. Many participants required individual attention and technical assistance to understand how to add materials to their sandbox. Participants were encouraged to experiment and “play” in the sandbox as a form of inquiry.

**Course Evaluations.** At the end of the certification course, participants were required to provide feedback as part of their assessment process. The course evaluations produced a 100% response rate and clearly indicated possibilities for improvement. Over time, the facilitators revised the course evaluation form and, in spring 2007, aligned the current form with the Quality Matters (2006) standards. All faculty members completed items on a Likert scale and responded to open-ended questions. The results shown in Table 1 are from a total of eighteen faculty members who completed the course from



spring 2008 to summer 2009. A Likert scale assessed the quality and support systems of the faculty certification course design using Quality Matters standards.

A series of open-ended questions were used to evaluate course content. The responses were compiled and transcribed into a summary document. The facilitators read the transcribed data, line by line, and divided the data into meaningful analytical units. Next, the data were coded with inductive category names developed by the facilitators by directly examining the data. The questions on the course evaluation were:

- What did you enjoy most about this experience?
- From the perspective of a WebCT student, describe your significant learning.
- From the perspective of a course designer, describe your significant learning.
- How might you change your teaching based on this course?
- How could we improve this course and facilitation?
- How can we improve the infrastructure of electronic teaching and learning at Anna Maria College?

Participants reflected that they enjoyed the experience and gained technical skills, information and resources, and pedagogical knowledge including the demonstration of effective facilitation. They appreciated the collegiality of the experience. Two faculty members responded that they can empathize with their college students more effectively after participation in the course.

Significant learning was reported by the participants. Understanding the importance of socially mediated learning was an area of growth for about half of the participants. The participants also learned much about the role of the facilitator, including the time commitment involved in teaching online. They gained new technical skills and have access to many new resources.

Participants will change their teaching practice based on the certification experience. Changes reported include the use of a variety of methods for learning such as creating opportunities for student interaction; improved organization and clear communication of expectations; promoting relationship building; aligning measurable objectives, activities, and assessment; and utilizing new assessment techniques.

The facilitators received specific information on how to improve the course. The content could be improved by making expectations clearer, allowing more time for the course, providing additional support, and spending more time working on course design with more instruction on assessment components. The facilitation could be improved by allowing for more socially mediated learning, providing more prompt and concrete feedback, relating current learning to prior learning more effectively, and offering more hands-on practice of technological skills.

AMC could improve the infrastructure of electronic teaching and learning by hiring more personnel for ongoing professional development and technological support. This could include the creation of a faculty certification instructor guide, the development of a formal mentoring process (train the trainer model), and a voluntary peer-review process. There is a need for more physical space on campus for larger computer labs. Technological upgrades should be continually supported with funding and personnel. One participant suggested that the certification course could include a discussion on educational philosophy. In addition, the college should plan curricular changes to offer students more technological training and guidance.

## **Discussion**

### *Findings*

Fink (2003) describes six aspects of significant learning, one of which is learning how to learn. Learning how to learn requires inquiry and reflection or learning how to seek information and construct knowledge. Fink defines inquiry as the ability to ask and answer questions. In the faculty certification training, evidence of inquiry included formulating questions, sharing resources, and effectively facilitating discussions. Reflection allows people to make meaning of experiences and information. Evidence of reflection included acknowledging new technical skills, engaging in dialogues to search for the meaning of course experiences, and writing about their learning process. Using these definitions of inquiry and reflection, the facilitators analyzed course discussion topics, participants' sandboxes, and the course evaluations. The analysis confirms that the faculty certification course effectively promoted inquiry and reflection for the participants.

Table 1. Likert Scale Items from WebCT Faculty Certification Course Evaluations.

(SD = Strongly Disagree, D = Disagree, N = Neither agree or disagree, A = Agree, SA = Strongly Agree, NR = No Response)

Standard Quality	SD	D	N	A	SA	NR
<p><b>Learning Objectives (essential)</b></p> <p>A statement of the specific and measurable knowledge, skills, attributes, and habits that students are expected to achieve and demonstrate as a result of their educational experiences in a program, course, or module was clear.</p>			1	4	12	1
<p><b>Assessment and Measurement</b></p> <p>I received specific comments, guidance, and information provided in response to an activity or assessment. Feedback was integrated to the established criteria, and the instructors provided reasons for the accompanying evaluation and the resulting grade.</p>				4	13	1
<p><b>Resources and Materials</b></p> <p>The course provided instructional materials that support the stated learning objectives. The materials had sufficient breadth, depth, and currency to learn the subject. The instructional materials were logically sequenced and integrated.</p>			1	2	14	1
<p><b>Learner Engagement</b></p> <p>The learning activities promoted the achievement of stated learning objectives.</p> <p>Learning activities fostered instructor-student, content-student, and if appropriate to this course, student-student interaction. The requirements for course interaction were clearly articulated.</p>			1	2	14	1
<p><b>Course Technology</b></p> <p>The tools and media supported the learning objectives and were appropriately chosen to deliver the content of the course. The tools and media enhanced student interactivity and guided the student to become a more active learner. Technologies required for this course were either provided or easily downloadable. Instructions on how to access resources at a distance were sufficient and easy to understand.</p>				6	11	1
<p><b>Support Systems</b></p>						
<p>The course instructions articulated or linked to a clear description of the technical support offered.</p>		1	1	4	9	2
<p>The course instructions articulated or linked to an explanation of how the institution's academic support system can assist the student in effectively using the resources provided.</p>		2		4	8	3
<p>The course instructions articulated or linked to tutorials and resources that answer basic questions related to research, writing, technology, etc.</p>		1		6	8	2

### Limitations of the study

This study was limited in several ways. The results are applicable only to the facilitators' work setting, and the sample size was relatively small (N = 51). The facilitators collected data randomly; therefore, a more systematic approach to data collection would strengthen the findings.

### Conclusions and Future Research

The facilitators have observed that successful course completers use the pedagogical knowledge from the course in both blended and face-to-face courses. For further study, the facilitators plan to research whether faculty members experience shifts in pedagogical beliefs after developing and teaching an online course.

Based on course evaluations, the addition of mentoring and peer review are needed at AMC. If these processes are implemented, the facilitators will study the effectiveness of faculty support after the initial training. Are there differences between early adopters and the faculty who were required to participate in the certification course?

This article described the rationale, planning process, implementation, assessment, and future goals for ongoing professional development to support online teaching and learning at AMC. The WebCT faculty certification course effectively supports inquiry and reflection in faculty and, according to one participant, supports the recognition and respect of one's own diversity and that of others: "We are from varied fields, social work, psychology, English, business, economics, religion, history, writing, fire science . . . and our collaboration has been awesome . . . who would have thought that? Maybe this is a lesson for us about online students . . . who come with different agendas, cultures, ethnicities, socioeconomic status . . . and yet we find common ground."

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