**Effective Evaluation of Online Courses in Higher Education:**

**The Development and Validation of Tools and Processes to Meet Changing Needs**

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**INTRODUCTION**

As the face of American society continues to evolve to meet the needs of an emerging information society, so has the use of technology in American education. The proliferation of online courses offered at institutions of higher learning parallels the information explosion available through web-based interfaces.  Dun and Bradstreet (2000) estimated that the number of institutions offering distance-learning programs nearly doubled in 1999 alone (as cited in Eaton, 2002).  As these new models of teaching and learning are advanced and adopted, appropriate tools for course evaluation need to be developed to both monitor and guide progress in this reform movement of course delivery as well as to document successes and failures with precision and accuracy.  With this need in mind, the primary purpose of this study was to develop and validate an evaluation system that can be used to examine the development, delivery, and effectiveness of web-based courses

The various educational program evaluation models in the literature are collectively useful for focusing program and course formative evaluations.  They are especially helpful for identifying what evaluation questions to ask, who to ask, and when and how to ask them.  The best approach to developing an evaluation plan for a given project is to consider the nature of the program to be evaluated, to examine standards, theories, and models that are appropriate for the nature and context of the program, and then to create an amalgam model or framework that fits the program purpose.  The nature of the program evaluated in this study is the design and development of multiple web-based graduate-level courses that comprise completely distance degree programs spanning several colleges within a metropolitan research university.  It also includes the purchase and use of innovative technology to support instruction.  The context is a federally funded development and implementation project at a large metropolitan university, with instructional development and delivery across multiple programs and colleges.  Participants include a central project administration group; a large planning, development, and implementation team; an evaluation team, and a host of graduate students enrolled in the new programs.  In planning the framework for the evaluation of these courses, technologies, and programs, a set of educational program evaluation standards and two evaluation models were used: the Joint Committee Standards for Educational Program Evaluation (Joint Committee, 1994); Stufflebeam's (2002) CIPP project management model, and the Dick and Carey (2001) systems-based instructional design and development model.

*Purpose*

This research was undertaken to assess the pedagogical and technological efficacy of courses converted from synchronous face-to-face formats to asynchronous web-based learning models that meet the needs of adult learners, and that promote accessibility to remote student populations (Innovations in

Technology and Teaching, 2003). The goals of the course conversion processes were to select innovative technology, course content, and delivery methods to enhance student learning; to improve the competencies and skills of participating faculty to effectively support the development of distance learning courses; and to utilize instructional designers whose specific knowledge and skills would serve as a resource to faculty in the development of effective asynchronous courses.

       A system to evaluate the effectiveness of each goal was developed. This consisted of interviews with the instructors and instructional designers, problem logs kept by instructors and designers, a thorough review of documents, including course syllabi, statements of work (SOW), instructional design plans (IDPs), and online course materials, as well as surveys administered to instructors and students enrolled in the courses at various points throughout the semester (see Figure 1). The instruments used to assess course quality and processes were developed through careful review of existing literature and through interviews with students enrolled in online courses. This provided formative information to instructors, designers, and other stakeholders interested in the process.
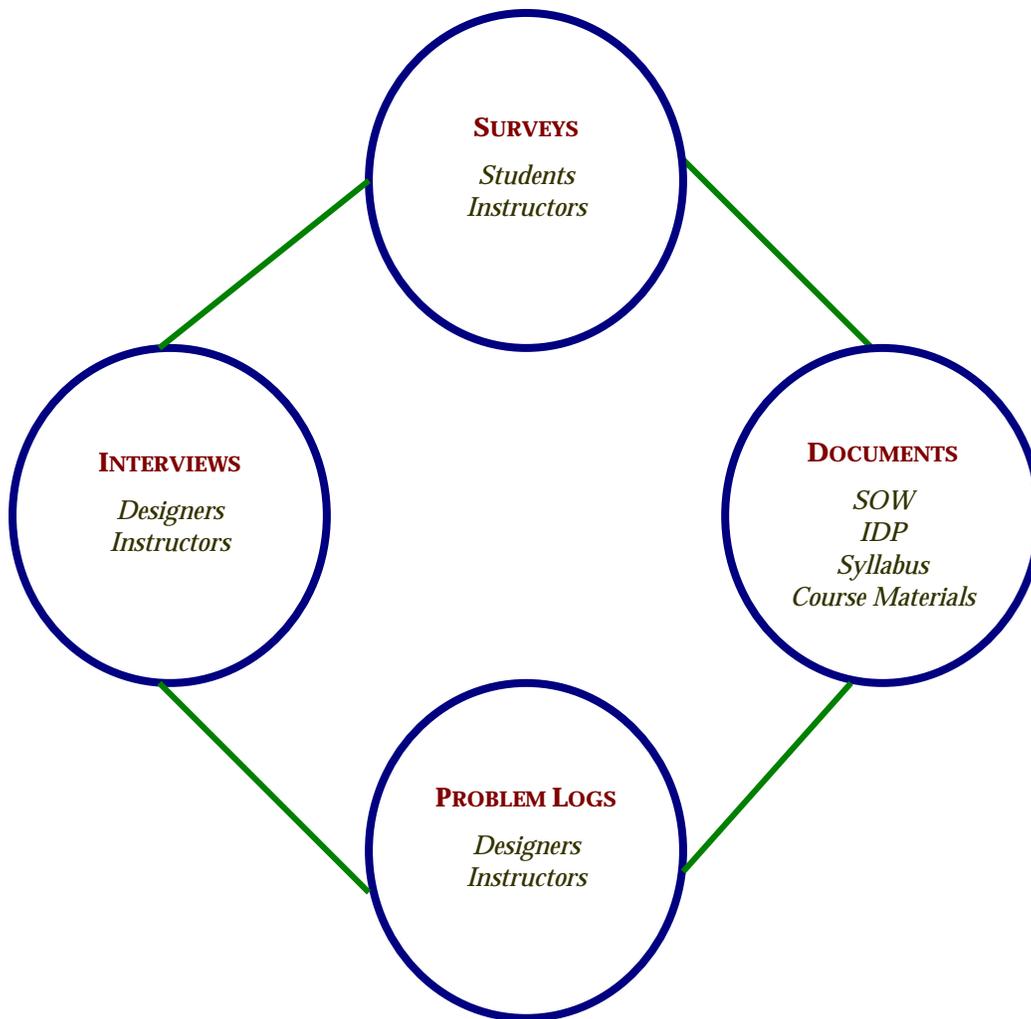
**Figure 1:**  Data Sources for Evaluation

This research was conducted at a Carnegie Doctoral Research Extensive Institution in the Southeastern United States serving a diverse population of approximately 40,000 students across four campuses.  Within this university, there are fourteen individual colleges, including the College of Public Health, the College of Arts and Sciences, and the College of Education.  The development, validation and pilot testing of the assessment system were conducted as part of the evaluation of a grant from the U.S. Department of Education's Fund for the Improvement of Post Secondary Education (FIPSE). This grant provided support for the development of three new online Masters Degree programs in Music Education, Career and Technical Education, and Public Health. Two classes in each of these programs were offered for the first time in the fall of 2003 and served as the pilot samples for the assessment of the evaluation instruments.  An individual faculty member working with an instructional designer developed each course. The majority of courses delivered through the Blackboard System were asynchronous and included online activities and assignments, links to online resources, collaboration through bulletin boards, online submission of student products, and e-mail communication.

## METHOD

A systematic multi-method approach to evaluating the online courses was employed, gathering data from key stakeholders regarding processes and products, as well as from other relevant resources and documentation.  Initially, a thorough review of the literature regarding current practices in course evaluation, both in traditional classroom settings and distance learning, was undertaken to identify key domains and effective practices.  In addition to the more traditional approach of gathering data from students, typically with a focus on gauging student satisfaction, the perspectives of other individuals involved with online course design and delivery (e.g., instructors and instructional designers) were included in the process.  This variety of data sources is critical because of the complexity of effective instruction via online delivery, both from pedagogical as well as technological perspectives.

### *Data Sources*

Table 1 summarizes the data sources and instrumentation used to gather evaluation information. The instruments described in the table are available on our website (http://sirocco.coedu.usf.edu/itt/website/index.html).  The targeted data sources and instrumentation were designed to complement one another, providing alternative perspectives on the online course experience. Additionally, instruments were constructed to address both technological and pedagogical innovations as well as to gather information regarding the perceived effectiveness of online course delivery.

Table 1
*Multiple data sources for online course evaluation.*

| Data Source | Informant | Instrument, Purpose and General Description |
|---|---|---|
| Interview | Instructors | *Instructor Interview Protocols*<br>Conducted near the beginning of the semester and last approximately one hour. The interview protocol for instructors contains open-ended discussion questions. |
| | Instructional Designers (IDs) | *Focus Group Protocols*<br>Group interviews with the IDs last approximately two hours.  The interview protocol for designers contains open-ended discussion questions. |
| Written Survey | Students | *Beginning of Term Survey*<br>Administered within the first two weeks of a semester. Both open and closed items gather data about the reasons students signed up for an online course.<br><br>*Middle of Term Survey*<br>Administered to students in the mid-point of the semester.  Both open and closed items gather data about ease of use, features, and utility of course delivery.<br><br>*End of Term Survey*<br>Administered during the last two weeks of the semester. Both open and closed items gather data about technological and pedagogical satisfaction. |
| | Instructors | *End of Course Survey and Report*<br>Administered at end of semester. Both open and closed items gather data about instructor experiences and satisfaction. |
| Problem Logs | Instructors | *Instructor Problem Log*<br>Used to gather information regarding issues and problems using, accessing and trouble-shooting technology-based aspects of their course. |
| | Instructional Designers | *Designer Problem Log*<br>Used to gather information regarding issues and problems encountered using technology-based aspects of course design and delivery. |
| Documents | Instructors | *Syllabus Analysis Protocol*<br>A checklist identifying the extent to which technology was used in the course, including course delivery, resources, communication, and expectations.<br><br>*Statement of Work (SOW) Protocol*<br>A checklist identifying specific objectives, strategies, deliverables and expected outcomes from an online course. |
| | Instructional Designers | *Instructional Design Plan (IDP) Protocol*<br>A checklist identifying design objectives, planned instructional strategies, technical specifications and course structure. |
| | Online Course Materials | *Materials Analysis Protocol*<br>A checklist identifying course delivery, resources, communication and instructional strategies evident in online course materials. |

Triangulated methods were employed to gather data using multiple data sources, instruments, and time points.  For example, information from instructors was gathered at two different points in time using two different methods of data collection.  First, face-to-face, semi-structured interviews were conducted with the instructors on an individual basis using an interview protocol.   Instructors were asked to discuss their experiences and training with online course delivery in general, as well as specifics about the design and delivery of their current course.  Specific items addressed support received or needed, satisfaction with their course, both pedagogically and technologically, and their perceptions of effectiveness.  Subsequent information was then gathered at the end of the course using an online survey consisting of both closed-ended and open-ended questions.  Many of the same types of issues were included, although for the latter survey, the use of items employing a Likert scale allowed for a more quantitative analysis to supplement the qualitative analysis of the interviews and open-ended items.  This variety of data sources and data collection methods provides a thorough approach to gathering information employing a structured, though flexible, method of inquiry.

Surveys were the primary vehicle employed to gather information from students. Three surveys were pilot tested during the semester, each designed to tap a different aspect of the student's experience with the online course.  The first survey was intended to glean information regarding the reasons that a student was taking a course online instead of participating in more traditional face-to-face classroom based instruction.  This survey queried students regarding previous experiences with online courses, the types of factors that influenced them to take a course online (e.g., distance, parking, time constraints), and the resources they planned to use for course participation (e.g., access location, type of platform).  The second survey gathered information about the usability of the online courses.  On this instrument, items addressed such issues as accessibility to course and associated resources, ease and modes of communication with instructors and other students, and utility of features and materials presented.  The third and final survey addressed overall satisfaction with the course, including delivery, content and the instructor.  All three surveys required students to provide a unique identifier allowing the data to be linked, while maintaining confidentiality.

Surveys and interview protocols were carefully constructed using multiple steps in the design process to ensure the necessary breadth and depth of information to serve our evaluation needs.  Using information culled from the initial review of the literature, domains and constructs were identified that needed to be addressed by each instrument.  Once the general domains and constructs were identified, a 12-person team (comprised of measurement and technology specialists) worked collaboratively to construct items and associated response scales.  This process was iterative in nature, with a series of reviews undertaken for each instrument.  After the initial set of items had been developed for each instrument, the grant management team, course instructors, and instructional designers were invited to review the instruments and provide recommendations for revision.

In addition to information obtained from those directly involved with the courses, team members reviewed pertinent course documents (e.g., course syllabi, statements of work, instructional design plans and online course content).  This review was intended to provide evidence related to the breadth and depth of course documentation regarding pedagogical and technological innovations, as well as the degree to which different documents synthesized information for a given course and were reflective of actual course practices.   These documents each have a unique purpose and serve to inform different aspects of course development and delivery.  A syllabus is the primary means of initial communication between an instructor and his/her students.  As such, it should serve to inform the student about the course itself, including characteristics of delivery and resources, as well as provide pertinent information regarding student expectations.  The Statement of Work (SOW) informs administrators and faculty about the general design and characteristics of the course, including expected timelines, delivery of instruction and required resources.  The Instructional Design Plans (IDP) are detailed documents provided by the instructional designers that inform the instructors of their design and delivery plans for the course, including resources to be used, technological innovations and media to be incorporated.  The presentation of materials online allows for unique and innovative uses of technology.  While each of these documents has a unique perspective and purpose, collectively we expected these documents to reflect and complement each other in a consistent manner.

Finally, problem logs were developed for use by both the course instructors and the instructional designers to gather real-time information regarding technology-related problems and issues encountered during course design and delivery.  Faculty and staff designing and delivering online instruction used the problem logs to document problems and issues as they occurred (for example, difficulties accessing their course; problems with software, hardware, or delivery system compatibility; as well as issues with interacting with students).  These logs, in conjunction with the interviews of instructors and instructional designers, and surveys of instructors and student, serve to inform our team of systemic issues that existed while providing a baseline from which to address problems and initiate solutions.

*A Case Study*

The development and implementation of a system to effectively evaluate courses delivered online is a complex endeavor.  To illustrate one method in which the information gleaned from various sources may be synthesized, we present a cross section of our findings within the context of single case study.  The reader is cautioned that what we present here represents a work in progress, and as such, some elements of the system have yet to be analyzed and validated (i.e., problem logs are currently being analyzed and two of the student surveys are still being pilot tested).  The course that we chose for this examination was considered part of the "first wave" of a comprehensive series of online courses under development that are anticipated to fulfill the requirements of a Master's Degree in Career and Technical

Education.  This course, *Current Trends in Career and Technical Education*, was focused on current, emerging and future trends and issues in the field of Career and Technical Education.  The analysis methods that we employed included both qualitative and quantitative approaches.  Data were gathered from instructors, students, and instructional designers, as well as content reviews of associated documentation (e.g., syllabi, statement of work, instructional design plans, and online course content).

## RESULTS

### *Student Survey Data*

As indicated earlier, we intend to collect information from students at three points during the semester. As the first and second student surveys are still being pilot tested, for the purpose of this case study, detailed results are only provided from the end of course survey.  This instrument consisted of 30 selected response items (23 items that used a 4-point frequency response scale with responses ranging from *Rarely/Not at all* to *Almost Always* and 7 items that used a 5-point Likert scale of agreement with responses ranging from *Strongly Disagree* to *Strongly Agree*). The items were arranged into three subscales: Delivery of Instruction (19 items), Technology Support (4 items) and Overall Impressions (7 items). Psychometric analyses of responses to these subscales suggest acceptable levels of internal consistency, with Cronbach Alpha Coefficients ranging from .70 (for the Technology subscale) to .88 (for the Delivery of Instruction subscale). The correlations between the subscales (Table 2) suggest a strong, direct relationship between student perceptions of instructional delivery and overall impressions of the course ($r = .75$), with notably lower correlations with technology support.

Table 2
*Correlations Between Subscales on End of Course Survey.*

|  | Delivery of Instruction | Technology Support | Overall Impressions |
|---|---|---|---|
| Delivery of Instruction | 1.00 |  |  |
| Technology Support | .35 | 1.00 |  |
| Overall Impressions | .75 | .40 | 1.00 |

The student responses from the Career and Technical Education course suggest that the students perceived the delivery of instruction in the course to be excellent, with 17 of the 19 items evidencing mean responses of at least 3.7 on the 4-point response scale. Only two items (student ability to skip over familiar course content, $M = 1.5$; and the perceived benefit of prerequisite knowledge and skills for

mastering course content, $M = 3.2$) suggest a need for some improvement in the course delivery. Additionally, responses to the technology support items suggest that students could almost always connect to course materials ($M = 3.8$) and rarely needed technical support to complete the course ($M = 1.5$). Similarly, students reported that technical support was available when needed ($M = 3.4$), and their problems were usually solved when they accessed technical support ($M = 3.4$). Finally, all items addressing overall impressions received ratings of at least 4.5 on the 5-point response scale. For example, students strongly agreed that the technology used in the course facilitated their learning ($M = 4.5$) and motivated them to learn ($M = 4.5$). They also strongly agreed that the course was excellent compared to other courses ($M = 4.6$), and they would consider taking another web-based course ($M = 4.8$).

### *Faculty End of Course Survey*

The faculty end of course survey consisted of 30 selected response items (using a 4-point satisfaction scale, ranging from *Very Dissatisfied* to *Very Satisfied*) and 16 open-ended items. This instrument, designed to augment the information gathered through instructor interviews, tapped subscales of instructor satisfaction (with student learning, technical and collegial support, and satisfaction with the course as a product), experiences in course delivery, dissemination activities and future plans. The instructor for the Career and Technical Education course reported being *Very Satisfied* on 16 of the 30 selected response items, including items addressing student performance, availability of technical support, working with the instructional designer, and satisfaction with the course as a product. Further, the instructor reported being *Satisfied* with 11 of the thirty items, including interaction and communication with students, technology dependability and support received from the department and college. The instructor reported being *Dissatisfied* on only one item (his ability to make changes in the course materials), and did not respond to two items (support received from other instructors and ability to interact with other faculty using technology in teaching).

The open-ended responses corroborated the data obtained from the selected response items. The instructor reported being very pleased with the quality of the students' work in the course the experience collaborating with the instructional designer. Further, the instructor indicated improvements to be made in future offerings of this course in terms of clarifying instructions for students and facilitating communications. Although no dissemination activities have been undertaken, the instructor reported plans for presenting information on his experiences at professional conferences in the future.

### *Document Analysis*

When looking for evidence of the development and implementation of innovative learning models, information gleaned from student and faculty surveys was augmented by reviewing salient course documents, including the Statement of Work (SOW), the Instructional Design Plan (IDP) the course

syllabus and the online course content.  It was felt that this set of documents, constructed and compiled by various individuals, would provide the breadth and depth of information required.

Statement of Work (SOW).  The first document that we analyzed was the statement of work prepared by the project manager and instructional designer.  This document provides the project background, course description and overall objective, strategy, deliverables, and expected outcomes.  The section entitled *strategy* is focused on the delivery mechanism (i.e., Web-based Blackboard), content delivery, collaborative learning strategies, design and packaging issues, timing, and student access to course material.  A variety of methods were planned for the delivery of course content including printed text, digitized articles, websites, streaming video, and multimedia presentations.  Within the section on *collaborative learning*, student-student interactions were emphasized, with the planned implementation of cooperative learning strategies such as role-playing, Webquests, and student monitored discussions within triad and small group learning communities.  In order to access course materials, students would be required to download a series of plug-ins, such as QuickTime, PowerPoint viewer, and Adobe Acrobat Reader.  Additional technical information was provided within the *deliverables* section, noting the necessary analysis of course content and structure, the product to be used, and the proposed training and support.The last section of the statement of work outlined the expected outcomes.  These outcomes suggest that the development and delivery of this course will meet the needs of learners anywhere, anytime and with a cost reduction over time.  Further, the added flexibility will allow faculty more time to provide diagnostic feedback and to 'moderate the student learning in a constructivist model'.

Instructional Design Plan (IDP).  In this document, the course description, course objective and learning objectives are more fully articulated.  Within the design objectives, active learning techniques and collaborative learning are stressed.  Also included in the IDP are sections addressing the intended audience and the course structure, creative design, and technical specifications.  The *course structure* section of the IDP communicates the structure of the online course with respect to announcements, course documents, units, class discussions, focus groups, and resources.  Within this subsection, student collaboration was once again cited and project-based assessments were described.  This subsection also delineated the components of each unit: a) introduction to module, b) review of assignment, and c) course content  (to include: printed and web-based text, audio, video, and multimedia activities).  In the last two sections, themes and colors were identified and specific software requirements were outlined, including requirements for students (e.g., required plug-ins), course builders and the instructor's professional development.  A comprehensive production/task schedule and student schedule are located in the appendices of this document.

Course Syllabus.  One of the last documents to be examined was the course syllabus.  When examining this particular document, we searched for evidence of those key elements that were identified earlier within both the SOW and IDP, as well as evidence of the integration of technology with respect to

six categories:  electronic communication, online resources, delivery vehicle, processes and products, course administration, and equipment and facilities.  These six categories were identified by a team of measurement and technology experts while developing a checklist instrument to analyze individual course syllabi.  Each category contains four or five indicators determined by the experts to represent the category domain.  For example, with respect to *Online Resources*, syllabi were reviewed for explicit references regarding specific online resources for students such as: course syllabi, class notes, readings, or specific websites to view.

The syllabus analysis for this case study revealed many indicators of technology integration.  Initially we noted that access to the Internet was listed as a prerequisite for the course.  Further examination of the course syllabus revealed the integration of technology across a broad range of applications, from email, student instructor postings, to the availability of an online syllabus and course schedule, and the ability to view projects.  Additionally, we found evidence of the online submission of class assignments (and the requirement that all assignments be created using a word processor), the incorporation of class projects in an electronic portfolio and the ability to access grades online.

Online Course Content.  A review of the online courses was conducted to inform our understanding of how individual courses use technology and innovative strategies for teaching and learning.  A multi-category checklist was created to assess technical and pedagogical innovations found within the online courses.  Domains and constructs were identified that generated a picture of how these courses are implementing technological strategies in innovative ways to increase interactions and effectiveness.  A sub-group of the grant evaluation team consisting of instructors, instructional technologists and measurement specialist worked collaboratively to create this checklist.  Throughout the process, the relevant literature was studied, items were reviewed and categorized, and the checklist was assessed using real online courses.  Additional adjustments are being made according to recommendations made by the evaluation team, the instructors and the instructional designers. The review of the courses in manner provides additional information to complement the other data sources providing a vivid picture of the overall courses and the processes that are in place to create online programs.

The online course content analysis revealed many aspects of technology innovation being incorporated into the course examined for our case study.  Examination of the online course materials revealed that this instructor provided information regarding how to use the technology embedded in the course.  For example, the instructor included an inventive method to communicate to students how to use the interface, plug-ins, etc. within the course.  This information was communicated in an appealing and rapport building manner by utilizing a web based presentation containing screen shots and the instructor's voice. Another aspect of the course found to be innovative was the redesign of the hard copy syllabus to an electronic network of information.  In other words, the syllabus utilized hyperlinked navigation to other areas within the course and to outside resources constructing a blueprint of the course.  An example

of an innovative resource that the instructor utilizes is an online resource to minimizing plagiarism.  This website resource allows the instructor to submit student assignments to assist in identify plagiarism. Lastly, review of the student assignments uncovered an innovative use of Webcast video presentations to enhance content provided through reading and discussion with authentic examples.

*Faculty Interview*

The instructor of this course displayed a high degree of satisfaction with the delivery of this course in an online venue, regarding both the pedagogical and technological aspects of the course.  One of the primary benefits cited by the instructor of this delivery mode of instruction was the scope of availability of the course to individuals who do not reside locally.  This instructor indicated that collaboration with the Instructional Designer was especially beneficial.  From a pedagogical perspective, the instructor felt that the online environment fostered open communication and discussion, indicating that, based on prior classroom experiences with the same course, students in the web-delivered course tended to share ideas and resources more often.  From a technological standpoint, this instructor found that the use of asynchronous discussions between small groups of students helped foster a community atmosphere and facilitated the exchange of ideas and opinions.  Additionally, students constructed personal websites and had a cohort site that they could use to display their portfolios.  The interview supported the emphasis found in the SOWs and IDPs regarding collaboration as well as the availability of various tools such as the use of an online gradebook.

The main concerns cited by the instructor regarding their experience with the online delivery of the course were the issues and limitations encountered in systemic support of the course, both administratively and technologically.  The instructor estimated that for just one course, about ten hours each week were spent doing general administrative functions such as emailing students, posting materials, etc.  This does not include development of materials, grading and scoring, and other instruction-focused activities.  Additionally, it was noted that without the assistance of an Instructional Designer the effectiveness and creativity of the delivery of the course would have been diminished.  Limitations of the available technology were also a detriment to effective and efficient course delivery.  Based on institutional licensing, there was no choice in the delivery system used and this instructor encountered a variety of issues related to the use of that system.  At times the system was unavailable for both students and the instructor.  Additionally, students had problems retrieving and downloading resources, and one student even resorted to dropping the class after failing to gain access to the course within the first four weeks.

*Instructional Designer Interview*

Two interviews were conducted with the instructional designer assigned to this course. This instructional designer's assignment included working simultaneously on the development of three courses. An estimated 150 hours were spent  to create each course, including time devoted to creating the Instructional Design Plan, designing the course structure, and uploading the course content.  The designer consulted with the faculty member on a regular basis during the analysis and design phases, and obtained his "sign-off" on each phase.  The designer expressed general satisfaction with her job and enjoyed working with the faculty member.  The designer was also positive about the developmental support that was available, which included access to graphics and video production personnel.

A few negative themes also emerged from the interviews. A great deal of frustration was caused by the course management system (Blackboard). The designer felt the structure limited the types of innovations that could be implemented, and an updated version of Blackboard had recently been installed on the university's server, which caused numerous technical hurdles. Another aggravation was the extremely short timeframe.  In some cases, content or revisions (coming from the faculty member) were delayed, causing a very short turnaround time for the designer. During the initial offering of the course, the designer remained actively involved, providing technical support for the students and revising content as necessary. In addition, this designer is currently  training the faculty member  to use Blackboard, so that the instructor will be able to maintain and update the course when the grant period ends.

*Case Summary*

The data gleaned from the various data sources revealed a great deal of optimism and satisfaction with the development and delivery of this particular online course.  Data gathered from surveys suggested that both faculty and students were very satisfied with the delivery of the course.  Further, both students and faculty were satisfied with the level of technological support.  With respect to the analysis of course documents, commonalities and differences were observed.  For example, all documents consistently provided course descriptions and learning objectives.  As might be expected, however, the statements of work and instructional design plans placed more emphasis on the integration of specific technologies.  For example, while the delivery vehicle was advanced (i.e., Blackboard) in the course syllabus, there was scant evidence of the use of streaming video or multimedia presentations suggested in the SOW and IDP. Further, the heavy emphasis on collaborative learning that was articulated in both the SOW and IDP was somewhat less evident in the course syllabus.  From our interview with the instructor, we learned that students were employing technological skills in the creation of personal websites, used a cohort site for display their portfolios, and were involved in other collaborative activities.  These activities were also noted in the statement of work and the course syllabus.  The analysis of the course content provided the

perspective related to the actual delivery of the course, which exhibited many innovative aspects.  This type of finding reinforces our confidence in the use of multiple methods of data analysis and synthesis.

While most of the findings of our case study suggest positive experiences, there did appear to be a few areas that could be targeted for improvement.  First, both the instructor and instructional designer expressed frustration with the delivery vehicle (i.e., Blackboard).  However, this complaint was not evidence in responses from students.  Timing and time commitments were also observed to play a part in the development and delivery of online courses.  Despite these matters, there did appear to be a general level of satisfaction when all of the evidence is viewed collectively.

## CONCLUSION

The results of this study provide evidence that both the delivery and evaluation of distance-learning courses needs to be carefully and thoughtfully planned through collaborative efforts of individuals.  Both faculty members and instructional designers indicated that effective development and delivery of distance-learning courses is predicated on a close and collaborative working relationship.

Data gathered from the initial stages of the development of an effective evaluation system of online courses will be used to inform further development and fine-tuning of our instrumentation and data gathering processes.  The synthesis of information gleaned from our content review of course documentation allowed us to unearth commonalities and illuminate irregularities or inconsistencies between and within document sources.  In this vein, we will continue to refine our instrumentation, as well as solicit feedback from designers and instructors in order to estimate the degree to which the actual course delivery aligns with the documentation of a course.  Additionally, efforts will be focused on developing templates that will guide the revision of course documents to insure consistent inclusion of all of the relevant components.  Further, information gleaned from problem logs will allow for the identification of potentially challenging issues and concerns.  Formative feedback provided to instructors and course designers, as well as to project administrators regarding the types of improvements and upgrades needed to support successful, ongoing course developments are expected to enhance the pedagogical and technological soundness of the graduate programs.

By all indications, we are experiencing an almost historical shift in the way we approach instruction, at all levels.  It is critical that we examine the effective use of technology if we hope to prepare college graduates with the necessary tools to compete in a technologically advanced society.  Clearly, appropriate methods and tools are needed to assess how well we are accomplishing this endeavor.  The results of this initial research on developing such a system verify the complexity of the issue while further underscoring the need for comprehensive, systematic evaluation programs.

**SIGNIFICANCE AND FURTHER RESEARCH**

       As the proliferation of distance-learning opportunities continues in this era of educational accountability; educators, administrators, and institutions will need to have tools and methods available to ensure that the courses and programs they offer continue to meet the requirements of accreditation, policy-making, and funding agencies.  This study provides a foundation upon which to build and develop the necessary tools and methods that can be readily adapted and used by a host of individuals and groups involved in higher learning, be they faculty, administrators, or regulating agencies.

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