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CURRICULUM ADAPTATIONS WITHIN THE ONLINE ENVIRONMENT

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ABSTRACT

As the demand for online learning increases, teacher preparation programs must offer a variety of courses utilizing E-learning formats. These formats must model effective teaching practices, curriculum design, and adaptations for the online learning environment. In addition, teacher preparation programs—following the Dewey philosophy as well as the psychological aspects of cognition outlined by Piaget—must integrate collaboration and interaction along with project-based learning. Following a qualitative design, this study examined effective practices and curriculum design in order to provide insight into effective practices within the online learning environment. Data were collected from graduate and undergraduate students enrolled in a variety of teacher preparation courses in order to examine: (1) adaptations in curriculum design for the online environment, (2) interactions and collaborations, (3) depth of application of concepts and skills, and (4) preferences and differences with regard to learning styles.

Introduction:

Course designers and professors at institutions of higher education instructing via distance learning modalities can no longer view learners as "blank slates" whose minds are waiting to be filled with knowledge. Rather, they must adopt a constructivist point of view as they adapt learning to the online environment and adopt a more collaborative approach to learning that requires interaction with a variety of entities, inquiry, and multiple resources (Brooks and Brooks, 1993). Furthermore, university professors must also address the needs of those students who make up the rapidly growing population of online learners, the non-traditional student—a population that consists of working adults, second-career students, and those students who are unable to attend classes on the traditional on-site campus (Palloff and Pratt, 2001).

The Study: Adaptations, Explorations, and Examinations

This study examined the curriculum design and adaptations made to three university courses—which are part of the professional education requirements for state licensure—that were delivered entirely online utilizing the WebCT course delivery software. In order to conduct a comparison and gather findings that would improve practice, assignments and

interactions gathered from online students were compared with the same items gathered from students taking the onsite/campus version of the courses. Throughout the semester, assignments, interactions, processes and preferences of the students enrolled in the courses in order were examined to determine the degree of course effectiveness with regard to curriculum design. Students enrolled in the courses represented a variety of programs at the undergraduate and graduate levels—the commonality being that all students were seeking professional licensure as part of their individual programs.

Because of the nature of the inquiry, a qualitative approach was employed. Bogdan and Biklen (1998) suggest that qualitative researchers study a specific setting or situation because they are concerned with the context of the environment. According to Patton (1990), the research design should address specific issues of the inquiry—with considerations made to the purpose, focus, data, and approach taken. In addition, triangulation options were explored in order to address validity and confidence in the findings. Considering the notion that research is conducted to describe a particular phenomena, understand what is taking place, and utilize findings to inform practice, a formative research model (Schensul, Schensul, and LeCompte, 1999) was designed (Figure 1).

Figure 1. Formative Research Model – Description
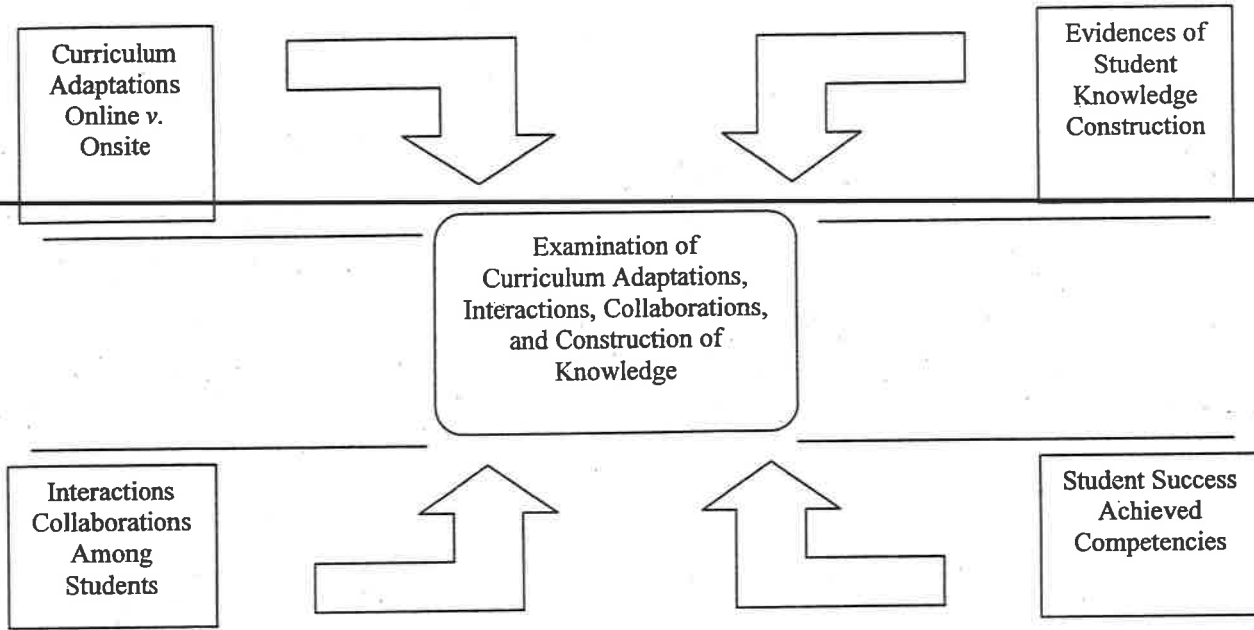
Adapted from Essential Ethnographic Methods (Schensul, Schensul, & LeCompte, 1999).

Three overarching questions framed the study and set the tone and theme of the research. A variety of data sets were gathered in order to examine and analyze multiple sources. Table 1 provides an overview of the data sets with each corresponding overarching question.

Table 1. Overarching Questions and Data Sets

OVERARCHING QUESTION	DATA SET 1	DATA SET 2	DATA SET 3
What adaptations in curriculum design would be necessary in order for students to effectively construct knowledge and become immersed in the online learning community?	Online Syllabus Onsite Syllabus Field Notes Ex: Adaptations	Online Student Tasks Onsite Student Tasks Student Work/Online Student Work/Onsite	Products and Artifacts Field Notes and Collection of Correspondence
Would interactions and possible collaborations assist or hinder student inquiry, construction of knowledge, and the development of competencies and reflective thought processes?	Field Notes Ex: Onsite Dialog Emails Ex: Online Dialog	Field Notes Ex: Onsite Seminars Discussion Forum Postings	Products and Artifacts Student-to-Student Interactions
What processes and preferences would emerge from the study that—when analyzed—would inform and improve practice for future online learning?	Coded Data Sets	Artifacts	Completed Assignments

Note: Data Sets were collected on a weekly basis throughout the semester.

Subjects consisted of both male and female students enrolled in online and onsite sections of the following courses:

1. *FOED 1110—Introduction to the Profession,*
2. *FOED 6850—Cultural Issues in Education, and*
3. *LS 5150—Books and Media for Children.*

Prior to the semester, each course was carefully examined. Following the elaboration theory as outlined by Reigeluth in the 1970s, instruction was organized in increasing order of complexity for optimal learning. Eight basic strategies were followed including (1) organizing course structure, (2) sequencing tasks and activities in a simple-to-complex manner, (3) designing lessons with "lesson sequencers," (4) developing summarizers as often as needed, (5) providing synthesizers to help learners integrate and apply content, (6) utilizing analogies as needed, (7) incorporating cognitive activators in the form of graphic organizers, graphics, and diagrams, and (8) making all content and tasks available at the onset of the course in order to enable learner control. In addition to curriculum examination, course designers—following guidelines offered by Palloff and Pratt (1999)—integrated the following components into each course:

- Focused outcomes and shared goals,
- Teamwork and a variety of collaborative learning tasks,
- Assignments to promote and encourage active learning and construction of knowledge,
- Facilitation, interaction, and a system for regular feedback.

Table 2 provides examples of online course components. Tables 3, 4, and 5 illustrate examples of curriculum adaptations made to a selected assignment in each course.

Table 2. Online Course Components

FOED 1110 Introduction to the Profession	FOED 6850 Cultural Issues in Education	LS 5150 Books and Media for Children
• Course Content Units (8) • Course Handouts/Slide Shows • Textbook Readings • Outside Readings/Online Articles • Supplemental Books (2) • Weekly Discussion Forums based on units of study and assessed with Online Forum Rubric • Teleresearch Assignments which integrate unit content materials, current issues in education, and topics closely related to public school teaching • Collaborative Assignments • Individual Mini-papers, Meta-Commentaries, and Projects • Onsite Teacher Interview conducted with a practitioner • Lesson Plan and Materials	• Discussion Boards: • General Class Discussion (1) • Special Topics Forums (6) • Study Groups (5) • Personal Journal (1/student) • Self-Portrait Pages (1/student) • Chat Rooms (5) • Textbook Readings (2) • Supplemental Autobiographical Lit (3) • Novel (Adult) • Essay Collection (Young Adult) • Vignettes Collection (Adolescent) • Online Lecture Notes/Slide Shows • Outside Readings/Online Articles • Online Teleresearch/WebQuests • Online Exhibitions, Museums • Collaborative Group Research Project • Ethnic Study • Group Presentation • Onsite Saturday Seminar • Individual MC Unit Revision Project • Lesson Plan and Materials • Exhibition of Multicultural Units • Individual Essays, Meta-Commentaries • Personal Journal Reflections	• Online Lecture Notes/Slide Shows • Outside Readings/Online Articles • Teleresearch as basis for definition of reading skills and strategies to attain skills • Independent work • Collaborative work via discussion board • Two field experiences--Students interview a reading teacher and assess a student one-on-one • Reading strategy charts • Genre with reading strategies in chart format • Reading teacher interview • Reading assessment with a child and reflection on findings

Table 3. Examples of Curriculum Adaptations—FOED 6850

FOED 6850 – Interaction / Onsite	FOED 6850 – Interaction / Online
- Self-Introduction (no discussion possible) - Personal e-mail person-to-person - Office Phone and Personal Conferencing - In-class Discussion of Topics - In-class Study Groups - Written responses to topics as assigned - Group Project / Common Theme - In-Class Presentation (15 minutes) - Communication between "teacher and SOME individual students" within class discussion - Individual Projects shared by exhibiting/displaying - Assigned Research Topics with written responses including bibliography handout shared in individual small groups within one class session with handouts	"One Word" Activity/Responses –Discussion - Home Pages: Cultural/Teacher Self-Portraits - Discussion and Interaction via postings & email - WebCT email including electronic student lists - Online "chat" rooms and online office hours - General, Special, & Personal Discussion Bds - Study/Inquiry Group Discussion Boards - Study/Inquiry Research Project completed via Discussion Board and Chat Rooms - Group Project presented at end of semester - Projects "published" via online content module - Communication between "teacher and ALL students" via multiple modes - Individual project "published" and available for viewing by all - WebQuests and Online Exhibitions with individual meta-comment essays shared via Discussion Board Posting (abstract) of essays (attachments) with embedded hyperlinks to various websites, museums, archived information investigated

Table 4. Examples of Curriculum Adaptations—FOED 1110

FOED 1110 – Mini Lesson Assignment / Onsite	FOED 1110 – Mini Lesson Assignment / Online
Assignment Components: - A strong, attention-getting beginning – such as a video clip, pictures, props, costume - Presentation of information regarding the selected topic - Learner-Centered activity (for audience participation) - Assessment strategy and closing statement - Preparation: Lesson modeled by instructor as a means of providing an example and examination of online resources and examples. - Presentation: Completed in Teams of 2 - Time: 7-10 minutes - Evaluation/Assessment Tools: - Team Member Evaluation Rubric - Self-Evaluation Rubric - Assessed by Instructor using Rubric - Interaction: Teams interact with instructor in selecting topics, designing lesson and materials. Remainder of class is not involved in planning or dialoging prior to presentation.	Assignment Components: - A strong, attention-getting beginning – such as a video clip, pictures, props, costume - Presentation of information regarding the selected topic - Learner-Centered activity (for audience participation) - Assessment strategy and closing statement - Preparation: Examination of online resources. Topics posted to Discussion Forum and explored via dialog and discussion of relevancy to teaching. - Presentation: Completed individually – by sending materials to each other on a determined schedule. Viewed via Lesson Exchange - Evaluation/Assessment Tools: - Peer and Self Evaluation Rubric - Assessed by Instructor using Rubric - Interaction: Whole group interaction (student-to-student) in selecting topics, designing lesson and materials. Instructor-to-student interaction in selecting topics, designing lesson.

Table 5. Examples of Curriculum Adaptations – LS 5150

LS 5150 Exploring Literacy / Onsite	LS 5150 Exploring Literacy / Online

• Classroom based oral and written instruction
• Students'watch a video, participate in discussion, and do minor research via library resources or the web
• Modeling of Why Reading is Hard segment by instructor
• Students work in a face to face group during class for the post video viewing
• Whole group face to face discussion follows
• Two charts with literacy strategies required
• Answers to questions after video viewing; some are factual, most are reflective
• All parts must be typed and submitted in class
• Assessment is based on video elements and quality of strategies
	• Web based written instruction
	• Students must do intensive research via the web as background
	• Students work independently at first and then participate in discussion through web portal (asynchronous)
	• Two charts with literacy strategies required
	• Two field experiences—
	   o Students interview a reading teacher and
	   o assess a student one-on-one
	• All parts must be typed and submitted through the online course portal
	• Assessment is based on depth of reflection for field experiences and quality of strategies

Findings, Discussion, Reflections

Stevens-Long and Crowell (2002) offer insight into online learning when saying that computer-mediated learning presents one of the greatest opportunities and most important challenges ever faced by university professors. This challenge became quickly apparent by course instructors involved in the study because of several emerging patterns. Egon Guba (1978) describes qualitative research as a "discovery-oriented" process that minimizes investigator manipulation of data and setting and places no prior constraints on what the outcomes of the research will be. Although the overarching questions were designed to examine how curriculum adaptations would assist and facilitate the process of knowledge construction, the course instructors did not anticipate the differences among students with regard to online versus onsite delivery. Clandinin and Connelly (2000) suggest that stories illustrate the importance of learning and thinking narratively as one frames research puzzles, enters the field of inquiry, and composes field texts. In order to provide a rich and thick description of what took place, the following findings have been organized according to the themes that emerged as the study progressed. Utilizing the questions as a framework—data were collected, coded, and analyzed. In order to provide an overview of findings, one assignment from each class was selected and compared with regard to onsite and online curriculum adaptations. Findings gleaned from the data sets include:

Overarching Question #1 – Curriculum Adaptations – After examining both the online and onsite completed student tasks, artifacts, and products, two themes emerged as follows:

1. *Creativity versus. Bland* - Online student overall project and lesson designs were more in-depth, creative, and student-centered than the onsite students' work.

Online students demonstrate a richer list of sources and use the sources to construct the required information.

This was an interesting finding considering the fact that the online students received oral and written guidelines for each assignment and were given time in class to discuss expectations. In addition, instructors modeled lessons for onsite students—online students just examined text-based assignment guidelines and viewed slide shows. Students enrolled in the online version of the courses submitted assignments that in general were written in a more sophisticated voice, were more creative, and illustrated application of content and skills to a greater degree than the onsite students.

Online students demonstrate a richer list of sources and use the sources to construct the required information. When asked, online students indicate that they have an expectation of spending 9-12 hours per week on class work. On-ground students indicate that they expect to spend only 6 hours per week on the class (3 out of class hours and the 3 hours in class). On-ground students use only the provided resources; their bibliographies do not show independent research.

It seems that the opportunity for and ease with which content could be explored via website links motivated students to delve into activities and writings with greater enthusiasm and more motivation, thus producing such exciting, informative, and extremely interesting products.

2. *Orientation to Technology* - Online students utilized technological skills to a greater degree when designing lessons and completing assignments. Although both online and onsite students were required to utilize technology as much as possible, findings indicate that the online students appeared to be more comfortable with technology and were operating at a higher level of technological literacy than the onsite students. Onsite students view the web-basis as an optional component and will balk when required to use the course web portal.

Specifically, as students became more at ease with online course navigation and utilization of WebCT course tools, they "relaxed" within the online learning environment and were able to profit from exposure to the technological aspects of the course in addition to course content. Examples include utilization of graphics, incorporation of web resources, presentation, and materials design. In addition, because all communication on line must be communicated in a format other than oral verbalization, students were obligated to express themselves in written format. As a result, the art of writing was engaged in on a daily basis and the writing skills of the online students evidenced a better command of the written word than that of the onsite students. Examples include individual writing assignments, meta-commentaries, self-portraits, and personal journal entries.

3. *The Face-to-Face Dilemma* – As the semester progressed and data were collected, it was clear that the products and assignments submitted by the online students were clearly at a different level academically. With this knowledge, course instructors closely monitored onsite students—encouraging students to discuss assignments for clarity, incorporating group sessions during class time, and providing additional guidance.

However, with all of the extra assistance, onsite student assignments did not improve to the degree of the online students. An interesting question to explore might be whether or not online students get to know classmates and instructors better within the online learning environment than do onsite learners within the face-to-face classroom settings. To explore this emerging pattern, further examination is needed of: (1) differences in populations, (2) age and gender differences, (3) learning preferences, and (4) online course adaptations and activities.

Overarching Question #2 – Interactions and Collaborations – An analysis of field notes, forum postings, products and artifacts as well as e-mail exchanges yielded the following findings:

1. *Collaboration and Dialog* – The exchange of ideas within the online environment was required and encouraged in the form of weekly Discussion Forum and Special Topic Discussion Board postings and e-mails among students as well as to instructors. The onsite students were required to engage in dedicated, focused Discussion Forums in the same manner as online students. Both were evaluated based on an online forum rubric developed by instructors.

   However, although most of the online students adhered to rubric guidelines (Example: Post initially and respond to peer postings throughout the week; Utilize and incorporate at least two outside sources to support your postings; etc.), onsite student postings were more superficial and low-level in terms of application of terms, skills, content, and content processing. On ground students rarely plan or prepare well for a discussion. They were less likely to adhere to the guidelines.

   Online student postings, however, illustrate content processing, application, and construction, elaboration, and explanation of knowledge and ideas. The Discussion Forums provided an avenue for discourse with peers in the online environment. For on-ground students, the Forums were just one of many avenues for discourse; therefore, they were not viewed as that important—even though students received a grade for postings.

   Some discussion opportunities are not suggested, but not required. The goal is peer support. Several problems emerged in the on-ground class. Shallow discussion on topics occurred. An extrovert talker can take control of discussion and overwhelm others in the group. Students may lurk in the discussion board and not participate actively.

2. *Interaction with Instructor / Each Other* – Not surprising, the online students interacted individually with the instructor at a higher rate than the onsite students did. The interactions in the form of e-mails and phone conversations took place on a daily basis. Even though onsite students were given opportunities to interact with instructors, not all students interacted on an individual basis. Findings indicate that the interaction between the instructors and individual students assisted the students with clarification of assignments, formulation of ideas, and elaboration of opinions.

   Although onsite students were given ample opportunities to interact with each other, students typically interacted at a deep learning level when required to do so. On the other hand, online students engaged in exchange of ideas via email to each other on a regular basis. Study groups were utilized at a high degree within the online environment; however, onsite students rarely sought out each other's assistance and/or advice within the classroom or via online chats and discussions. Fear of failure at having to make public statements of opinions and ideas is also a possible cause for the lack of in-depth discussion by an on-ground student. In the library science course, the instructor noted that the students who had the weakest postings were the same students who seemed unsure of their abilities to handle the online environment.

   On ground students are comfortable with an isolated lecture / note format and do not think that a major portion of the course will consist of group work

Overarching Question #3 – Processes and Preferences – After coding and organizing data sets, several processes and preferences emerged from the study. The processes and preferences that were gleaned from student assignments, coded data sets, and artifacts include these:

1. *Active Involvement versus Stagnant Involvement* – An analysis of all data sets collected indicates that an interesting phenomenon was present and prevalent among the onsite students. With relation to active involvement, the online students were actively engaged to a high degree. The rate of interactions in terms of peer-to-peer interactions and student-to-instructor interactions occurred at a high level. Students enrolled in the online sections of each course engaged in conversations and interactions on a regular basis; silence is possible within an onsite learning environment but definitely not an option in the online learning environment. In many instances, the majority of students enrolled in the onsite sections remained silent and passive during class sessions as opposed to the daily interaction and communication among students and teachers within the online course sections. Information gleaned from data sets indicate that the thought processes of onsite students centered on getting a grade, as the main focus. These thought processes differed greatly from the online students in that most of them engaged on a regular basis and took an active role in their own learning. Evidence of these processes includes (1) rate of engagement and interactions, (2) working ahead on assignments, (3) seeking out additional information, (4) unsolicited feedback noting the benefits or more interaction with classmates and teachers, and (5) sending inquiries to instructors on a regular basis in order to gain additional information.

On-ground classes are bound by time and place constraints and students expect to meet ONLY within the allotted time/space—the "endure-it factor." Field experience assignments generate complaints and usually result in less than high quality work. Because online classes do not have specified time/space limits, field experience assignments are taken in stride. Students apply same standards for performance and are unwilling to submit less than their best work

2. *Work Habits and Preferences* – Although most online students engaged actively—working ahead on units and adhering to deadlines, onsite students were less timely with regard to completion and submission of assignments. The majority of onsite students—even when given the opportunity to submit assignments early—did not capitalize on early submissions and time management. Online students, however, regularly worked ahead of schedule allowing themselves time for revision, and they usually submitted assignments ahead of schedule and deadlines.

Conclusion

As university professors and instructors continue to adapt and redesign courses for the online environment, more and more are finding that—even with minor adaptations—online students differ greatly from their onsite counterparts. The broad ranges of learning styles and diversity represented by those students enrolling in online courses present greater challenges to instructors. However, one must not forget that the populations of students who enroll in the onsite versions of classes are becoming more and more diverse also. In terms of curriculum development, findings gleaned from

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data sets collected indicate that there is additional inquiry that must be addressed in motivating those students who enroll in the onsite sections of typical university courses. Although onsite students and online students appear to differ in terms of engagement, work habits, preferences, and interactions—it seems that there is much work to be done with curriculum development that would yield better results with onsite students. If the online environment is one that draws a more serious, professional, and dedicated student, where does that leave onsite teaching? The process of constructing knowledge requires scaffolding, modeling, and coaching. Although the onsite students were provided opportunities for all of these, findings show that these alone did not enable the onsite students to truly internalize new knowledge and construct new knowledge in different and new situations.

To embark on the journey of online teaching, challenges must be realized. First, the course designer and instructor must acknowledge that curriculum changes and adaptations must be made in order for the online student to acquire and apply new information. Second, multiple opportunities for interaction and multiple configurations for collaboration must be integrated into the course. For those instructors and course developers who continue to teach onsite, traditional courses, much can be learned from the online environment. Onsite students must be encouraged to interact and to become active learners in acquiring and constructing knowledge. Second, onsite students need additional motivation and opportunities to take part in real-world simulation and application of meaningful content acquisition. Last, both onsite and online students must be empowered to take responsibility for their own learning so that they too become the coaches and scaffolds to others. Perhaps the most important information gleaned from this study may be that university professors continue to model effective practices in order to encourage and foster the construction of knowledge and the development of lifelong learners.

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