



REQUIRED Cover Page

## APPLICATION FOR PROFESSIONAL DEVELOPMENT GRANT

<b>Choose one:</b> <input type="checkbox"/> Creative activity <input type="checkbox"/> Research activity <input checked="" type="checkbox"/> Professional Enhancement activity	<b>Date of Last PDG Award</b> (Semester and Year awarded): none, new faculty <b>Date of ATU Faculty Appointment</b> (Semester and Year): Fall 2006
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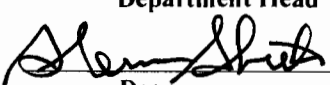
1. Project Title: *Online Solitude: A Lack of Student Interaction*
2. Name of Principal Investigator/Project Director: Rebecca A. Callaway, Ed. D.
3. School (abbrev): EDUCATION
4. Department: Curriculum & Instruction
5. Campus Mail Address: 104 Crabaugh
6. PI/PD Campus Phone: 968-0203
7. Amount Requested: \$2755.70
8. Total Cost of Project: \$2755.70
9. Does this project involve:
10. Duration of Project: Oct 13 – Oct 21, 2006

**Yes No**

- ☐ ☒ human subjects?
- ☐ ☒ animals/animal care facility?
- ☐ ☒ radioactive materials?
- ☐ ☒ hazardous materials?
- ☐ ☒ biological agents or toxins restricted by the USA Patriot Act?
- ☐ ☒ copyright or patent potential?
- ☐ ☒ utilization of space **not** currently available to the PI/PD?
- ☐ ☒ the purchase of equipment/instrumentation/software currently **available** to the PI/PD?

**NOTE:** If the answer is "yes" to any of the above questions, the investigator must attach appropriate documentation of approval or justification for use/purchase.

**SIGNATURES**

	10-17-06
Department Head	Date
	10-19-06
Dean	Date

**This Section to be completed by the Office of Academic Affairs**

PDC Committee Award Recommendation: Yes \_\_\_\_\_ No \_\_\_\_\_  
PDC Committee Proposal Rank: \_\_\_\_\_ of \_\_\_\_\_ Total Proposals.  
Recommendation of VPAA: Yes \_\_\_\_\_ No \_\_\_\_\_  
Recommendation of President: Yes \_\_\_\_\_ No \_\_\_\_\_  
Award Date: \_\_\_\_\_

## PROPOSED BUDGET FACULTY RESEARCH GRANT

1.	Graduate assistant stipend	\$	0
2.	Non-work study stipend		0
3.	Supplies:		0
4.	Travel:		
	E-Learn 2006 Conference <i>(for conference presentation)</i>		
	Honolulu, HI		
	Oct 13- 17, 2006		
	Conference registration		425.00
	Airline ticket		778.30
	Hotel (5 nights)		1250.00
	Meals (6 days)		180.00
	Parking (airport)		60.00
	Mileage to airport		62.40
	<b>Total estimated travel</b>		<b>2755.70</b>
5.	Capital Outlay		0
	<b>TOTAL PROPOSED BUDGET</b>		<b>2755.70</b>

You are logged in as Rebecca Callaway.



World Conference on E-Learning in Corporate,  
Government, Healthcare, & Higher Education

### E-Learn 2006

Thank you for your E-Learn registration which we received S

This is the information that was submitted:

=====

CONTACT INFO:

Name: Callaway, Rebecca

Organization: Arkansas Tech University

Address:

107 Preston Drive

Russellville, AR 72802 US

E-mail: rebecca.callaway@atu.edu

=====

YOU SIGNED UP FOR:

E-Learn 2006 Registration (AACE Member)	\$425.0
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Registration Total: \$425.0

You chose to pay by VISA.

P.O. Box 3728, Norfolk, VA 23514 USA 757-623-7588

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Confirmation:  
**C8LDN9**

Print your boarding pass  
at **continental.com**  
within 24 hours of your flight ✈

Issue Date: August 03, 2006

Traveler	eTicket Number	Frequent Flyer	Seats
CALLAWAY/REBECCAA	0052173998312	CO-BE109993	1A/25L/32A/1A

#### FLIGHT INFORMATION

Day, Date	Flight	Class	Departure City and Time	Arrival City and Time	Aircraft	Meal
Fri, 13OCT06	2628 <sup>1</sup>	Q	LITTLE ROCK ARK (LIT) <b>6:35AM</b>	HOUSTON BUSH INTL (IAH) <b>8:02AM</b>	ERJ-145	
Fri, 13OCT06	1	Q	HOUSTON BUSH INTL (IAH) <b>9:35AM</b>	HONOLULU HNL (HNL) <b>12:45PM</b>	767-400	Lunch
Sat, 21OCT06	72	V	HONOLULU HNL (HNL) <b>9:10PM</b>	HOUSTON BUSH INTL (IAH) <b>9:55AM</b>	767-400	Breakfast
Sun, 22OCT06	2483 <sup>2</sup>	V	HOUSTON BUSH INTL (IAH) <b>10:35AM</b>	LITTLE ROCK ARK (LIT) <b>11:55AM</b>	ERJ-145	

<sup>1</sup>Operated by EXPRESSJET AIRLINES INC doing business as CONTINENTAL EXPRESS

<sup>2</sup>Operated by EXPRESSJET AIRLINES INC doing business as CONTINENTAL EXPRESS

#### FARE INFORMATION

##### Fare Breakdown

Airfare:	712.56 USD
Tax:	35.04
U.S. Flight Segment Tax:	13.20
U.S. Security Service Fee:	10.00
U.S. Passenger Facility Charge:	7.50
Per Person Total:	778.30 USD

##### Form of Payment:

VISA  
Last Four Digits 5784

**eTicket Total: 778.30 USD**

The airfare you paid on this itinerary totals: 712.56 USD

**The taxes you paid on this itinerary total: 65.74 USD**

Fare Rules: Additional charges may apply for changes in addition to any fare rules listed.  
NONREF/OVALUAFTDPT/CHGFEE  
Cancel reservations before the scheduled departure time or TICKET HAS NO VALUE.

#### eTicket Travel Reminders

- **Check-in Requirement** - Bags must be checked and boarding passes obtained at least 30 minutes prior to scheduled departure. Baggage will not be accepted and advance seat assignments may be canceled if this condition is not met.
- **Boarding Requirement** - Passengers must be prepared to board at the departure gate with their boarding pass at least 15 minutes prior to scheduled departure.
- Failure to meet the **Boarding Requirements** may result in cancellation of reservations, denied boarding, removal of checked baggage from the aircraft and loss of eligibility for denied boarding compensation.
- Bring your boarding pass or this eTicket Receipt along with photo identification to the airport.
- The FAA now restricts carry-on baggage to one bag plus one personal item (purse, briefcase, laptop computer, etc.) per passenger.
- For up to the minute flight information, sign-up for our Flight Status E-mail at continental.com or call 1-800-784-4444; in Spanish 1-800-579-3938.
- If flight segments are not flown in order, your reservation may be cancelled.
- For the most current status of your reservation, flights and other important policies, go to continental.com.
- Your eTicket is non transferable and valid for 1 year from the issue date unless otherwise noted in the fare rules above.

**Sunshine on Sale Regency Club 2006 Offer Code: FALL06** Rate DetailsFree Night not included in total rate, but will be deducted at check-out. **Offer Code: FALL06**

Room Type:		Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
<b>Regency Club Ocean View</b>	Week 1	550.00	550.00	550.00	550.00	550.00	550.00
	Week 2	580.00					
Room Details							

Total Price Per Room: **4430.00 USD<sup>1</sup>**

<b>Regency Club Mountain View</b>	Week 1	480.00	480.00	480.00	480.00	480.00	480.00
	Week 2	510.00					
Room Details							

Total Price Per Room: **3870.00 USD<sup>1</sup>****Hyatt.Com Rate** Rate Details

Rate requires full prepayment and is subject to special cancellation penalty.

Room Type:		Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
<b>Deluxe Ocean</b>	Week 1	402.00	402.00	402.00	402.00	402.00	402.00
	Week 2	419.00					
Room Details							

Total Price Per Room: **3250.00 USD<sup>1</sup>**

<b>Ocean View 2 Double Beds</b>	Week 1	352.00	352.00	352.00	352.00	352.00	352.00
	Week 2	369.00					
Room Details							

Total Price Per Room: **2850.00 USD<sup>1</sup>**

<b>Mountain View</b>	Week 1	302.00	302.00	302.00	302.00	302.00	302.00
	Week 2	319.00					
Room Details							

Total Price Per Room: **2450.00 USD<sup>1</sup>**

<b>City View</b>	Week 1	252.00	252.00	252.00	252.00	252.00	252.00
	Week 2	269.00					
Room Details							

Total Price Per Room: **2050.00 USD<sup>1</sup>****Picnic on US** Rate Details

Room Type:		Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
<b>Deluxe Ocean</b>	Week 1	402.00	402.00	402.00	402.00	402.00	402.00
	Week 2	402.00					
Room Details							

Total Price Per Room: **3216.00 USD<sup>1</sup>**

<b>Ocean View 2 Double Beds</b>	Week 1	352.00	352.00	352.00	352.00	352.00	352.00
	Week 2						
Room Details							

# Online Solitude: A Lack of Student Interaction

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**Abstract:** Optimum online learning environments include student-to-student exchanges, frequent communications with the professor, discussion forums, problem-based learning, clear expectations for assignments, prompt posting of grades, challenging course content, and support. This study examined the actual experiences of three graduate students whose online classes provided limited opportunities for interactive learning, no interactions with other students, and limited interactions with the professor. Data collection included interviews and examinations of course materials. The students recount their experiences, their frustrations, and their decisions to persist or withdraw from the courses.

Research on the design of online learning environments examines the importance of interactions in building community, facilitating learning, motivating students, increasing satisfaction, and persistence in pursuing online learning (Bober & Dennen, 2001; Carnevale, 2001; Chang, 2001; Moore & Marna, 2005; Murphy & Mahoney, 2001; Northrup, 2002; Tello, 2002.). Strategies for enhancing student interactivity in online courses include small group discussion forums, prompt responses to students' emails, student-to-student exchanges, and opportunities to participate in problem based learning (Durrington, Berryhill, & Swafford, 2006). Online students expect prompt posting of grades on assignments, clear expectations for assignments, well delineated grading criteria, and challenging course content (Mupinga, Nora, & Yaw, 2006). Graduate students in online courses want interactions that include innovative instructional strategies, peer collaboration, and a support system (Northrup, 2002). Tello (2002) found that online students preferred asynchronous interactions including threaded discussions and emails to synchronous interactions. Mupinga, Nora, and Yaw; Northrup; and Tello found that online students expect instructors to provide prompt, frequent, and appropriate feedback. These research studies document some of the optimum conditions necessary for students' success in online courses.

Tello (2002) examined persistence in online courses and found that instructional interaction was found to be a key component in students' persistence in online courses. He found that other reasons for not persisting in online courses included working more than 40 hours per week, not being in a degree program, lack of instructor contact, and disappointing course content.

Courses with limited opportunities for interactive, engaged learning do not produce the most effective online learning environments (Sims, Dobbs, & Hand, 2002). Limited interactions with the instructor and limited or no interactions with other students enrolled in the class are other factors that contribute to less than optimum

conditions for learning in an online environment. Students enrolled in these online classes experience frustration as they struggle to comprehend the course materials and deal with feelings of isolation.

## **Purpose of the Study**

This exploratory case study examines the actual experiences of three graduate students participating in online learning classes with limited instructor-to-student interaction, no student-to-student interactions, and limited challenging, interactive learning.

## **Method**

This case study examines the experiences of three graduate students enrolled in online courses offered by universities in two different southern states. The students had not previously enrolled in online courses. Becky has a doctorate in education and enrolled in a geographic information systems class to pursue her own interest in learning more about global information systems. She worked independently and did not have contact with any other students enrolled in the class. Course materials were presented in Blackboard course management software. Josh and Christie are degree seeking graduate students enrolled in an economics class and pursuing a MBA in International Business. They interacted with each other regarding the class but did not interact with any other students enrolled in the class. Course materials were presented in WebCT course management software. All three students have extensive experience with technology, have access to high-speed Internet connections, communicate well through writing, are self-motivated, and are self-disciplined.

Data collection consisted of structured interviews, discussions, and examinations of course content including textbooks, syllabi, and quizzes. The interviews were used to gather data about the students' experiences and perceptions of their first online courses. Data was analyzed using the constant comparative method (Glaser & Strauss, 1967). Analysis of the data revealed three themes 1) limited instructor-to-student interactions, 2) lack of student-to student-interactions, and 3) limited challenging, interactive learning.

## **Results**

Examining the themes that emerged from the data analysis offers insight into the impact of less than optimal learning conditions on the experiences and perceptions of students participating in their first online courses. The following sections of this paper examine the actual experiences and perceptions of the students.

### **Online Undergraduate Global Information Systems Class**

#### ***Course Content***

Course materials included a textbook, software, and assignments posted in Blackboard. The required assignments came directly from the textbook and were step-by-step instructions for learning to use the course software. Assignments were completed in a lock step fashion that simply required students to click in the designated places with little or no explanation as to why they were clicking. This insured that all students' correct answers would be exactly the same. The assignments resulted in the construction of a database of information that was not personally useful to Becky. Creation of a database of information that was not personally relevant and no opportunities to interact with other students in the class to discuss the usefulness or potential applications of the various elements of the software meant that learning in this class was simply the rote application of meaningless clicks.

#### ***Interactions***

Blackboard allows students to interact through discussion boards, group work areas, email and online chat sessions. Discussion boards, groups and chat sessions were not configured by the instructor and were therefore not available for student use. The course discouraged interaction between students in the class. Assignment answers

were objective. Each assignment contained a reminder at the bottom of the document reminding students of their commitment to the university honor code. Therefore, discussion of assignments with other students could be viewed as violating the university honor code. No class projects or group discussions to facilitate students' understanding and learning the course content were assigned. The instructor typically emailed assignment clarifications and due date reminders. Assignments were submitted through email attachments or Blackboard's digital drop box. Although grades were posted in the Grade Book in Blackboard the instructor provided no feedback on incorrect answers.

### ***Quizzes***

The course was designed with two due dates per week. Weekly assignments would be due on Monday night with a quiz on Thursday night. Quizzes were objective and similar in format to the course assignments. Quizzes were scheduled for a specific window of time on Thursday night. In this regard, the course was as date and time sensitive as a face-to-face class. Becky dropped the class just before the mid-term examination.

## **Online Graduate Economics Class**

### ***Course Content***

Course materials included an economics textbook, textbook study guide, a novel coauthored by the professor, and *PowerPoint* slideshows posted in WebCT. The optional textbook study guide contained chapter summaries, practice problems, multiple choice questions, and true/false questions. Course content did not include any activities, projects, or lecture notes to facilitate learning economics. Since there were no lecture notes that highlighted sections and topics from the book Christie felt like she only got a big picture with no deep understanding of the content. There were no homework assignments and no midterm or final exam. There were instead approximately 30 module quizzes and all were timed except for the first few. Students could take the quizzes as many times as they wanted, however, only the grade on the first one counted. Students were required to take half of the quizzes by the midterm and the remainder of the quizzes by the end of the class.

*PowerPoint* slideshows for each chapter were posted in WebCT. The content of the slideshows did not correspond to the material in the textbook, study guide, or the novel nor was the material included in the quizzes. The slideshows presented supplemental information that was not useful in understanding course content or passing the quizzes. The numerous pictures and diagrams in the slideshows indicated that a great deal of time had been spent creating them. Once Josh and Christie realized that the material in the slideshows did not appear on the quizzes they quit spending time viewing them.

The novel attempted to incorporate economic principles as the story unfolded, which proved somewhat helpful in understanding the implementation of economic principles. The novel content was considered offensive, which was deemed a hindrance in learning the course content.

### ***Interactions***

WebCT provides email and a discussion board, which could have been used for student-to-student interactions. The students did not use these components and the instructor neither required nor encouraged students to use them.

The professor emailed the students articles from the Wall Street Journal on topics pertinent to the class. The articles were never discussed nor did the information in the articles appear in quizzes. The students surmised that it was the professor's way of helping them connect economics to the real world.

The professor sent one or two emails to the whole class urging them to take the quizzes and not wait until the last minute as one half of the quizzes were to be completed by midterm and the other half of the quizzes were to be completed by the end of the semester. Students' expectations were that the professor would provide feedback and answers to questions similar to that received in face-to-face classes.

### ***Quizzes***



Quizzes on the textbook consisted of approximately 20 multiple choice and true/false questions, which students were given 1 hour to complete. The questions and answers came from the study guide and were one third of the grade for the class. The questions on the quizzes were randomly generated so students received individually constructed quizzes. When students finished these quizzes they immediately received their grades. This prompt feedback was important to Josh and Christie. As students in the class took the quizzes their scores were posted within ranges for others in the class to see. The students' individual grades were not posted but they could determine how many students had scored As, Bs, etc. Christie expected the quizzes to be more challenging than in class monitored exams. And in reality the quizzes were more challenging than other business exams she has taken in the classroom environment. Since the answers were in the study guide Christie merely read the text but did not make any effort to memorize or fully understand the content. Without the study guide she commented that she would have had to put in more time studying. The quizzes insured that the students focused on the key points in the chapters.

Quizzes on the novel contained 6 to 10 short answer questions written by the professor. These were timed quizzes and students were given one to two hours to complete them and were two thirds of the grade for the class. The questions were partly based on economic references in the novel or on the novel storyline. Since the novel merely referenced or discussed economic principles rather than explaining them, students used the textbook and the Internet to look up answers to the quiz questions. In this way the novel supported and extended the textbook and provided the students with examples of practical applications of economic principles. Some questions required students to apply economic principles and use higher order thinking skills to answer the questions. Often the questions skipped around to content in textbook chapters three to four chapters further ahead of the content specified for that quiz in the syllabus. This was confirmed by consulting the textbook index. Some of the questions on the quizzes used terms not found in the text, so Josh and Christie searched Google and Wikipedia. Reliance on the online encyclopedia, Wikipedia, increased as the class progressed. Wikipedia was the preferred reference to find definitions and explanations of these terms. Josh commented "One of the reasons we did so well on the course was because Wikipedia is so good. It has lots of economic terms." When asked if he found the course content challenging Josh's response was "Only when I encountered a term on the quiz that I had never encountered before. It was challenging to find a definition of the new term and be able to answer the quiz question in the allotted time."

Christie found the short answer questions difficult just because of the lack of feedback from the instructor regarding incorrect responses and questions that were outside the scope of the textbook reading. Christie stated, "You simply saw your answers and a score when you received your grade. There was no indication as to what part of the answers were right and wrong." Emails to the professor about quiz answers that did not receive full credit resulted in responses that gave a reference for the material in the question or simply a restatement of the question. While the professor may not have fully addressed Christie's questions regarding her grades, her emails to the professor were answered. Additionally, grades on the short answer quizzes were received in spurts rather than shortly after completing the quizzes. The short answer quizzes were the most frustrating part of the class. Josh and Christie both felt that knowing their grades and the reasons for point deductions on the previous quizzes would have helped them determine how to respond to essay questions on the next quizzes.

Taking timed tests was stressful as they were uncertain as to what would happen if they encountered problems with WebCT. If there was the possibility of a thunderstorm and their electricity might go out they would not begin a quiz. They knew they would lose their Internet connection if they lost power. They were uncertain of how the professor would respond if they were unable to finish the quiz due to a loss of electricity.

When asked what they liked least about the course both commented on the lack of interaction with the professor, being tested on material that they were not yet required to read, and the frustration resulting from the uncertainty of knowing exactly why points were deducted from quizzes. Additionally, Christie commented, "... for an online class I expected more material to be presented online resulting in less need for purchasing a textbook." Josh responded, "I did learn many things from the course, but those were from reading the book. I don't feel I need to pay tuition to read a book."

## **Conclusion**

Becky reported that she felt little satisfaction when she completed an assignment because she did not have a grasp of the topic covered. Rote clicking according to the directions in the assignment resulted in no real knowledge gain. The lack of challenging, interactive learning and isolation from other students resulted in Becky deciding not to persist in the class. Becky commented, "this was an undergraduate course and my perspective and expectations of the course may be very different from the average undergraduate student. I have the textbook. I could pick this up on

my own without the aggravation and frustration of an online course." In addition to the disappointing course content, Becky's lack of persistence in the course can also be attributed to the fact that she was working more than 40 hours per week and was not in a degree program (Tello, 2002).

While Josh and Christie's class had limited challenging, interactive learning and limited instructor-to-student interactions, they persisted in the course. Their persistence may in part be attributed to the fact that they had each other for support. Christie commented, "I do not know if I would do it again if I had to do it by myself. I need to be able to ask questions to facilitate learning. I know I am self-motivated so I knew I could make it through the class."

Online classes fit Josh and Christie's busy work schedules, which include traveling out of the country and working long hours at times nights and weekends. Christie felt that the online course format that the instructor set up was effective because she could learn at her own pace. She was not rushed to get assignments and homework done by any certain date. Josh appreciated having only two due dates for completion of the course quizzes. He noted, "With my work schedule, it (only two due dates) allowed me to put things off when I was busy, and then catch up or get ahead when I wasn't. I was able to finish the course a month before the end of the semester." The opportunity to take the half of the quizzes during the first half of the semester and half of the quizzes during the second half of the semester appealed to both of them. However, the flexibility in taking the quizzes would have resulted in the professor at times being overwhelmed with quizzes to score. Grading the short answer quizzes would have taken a great deal of time and hence resulted in students receiving the grades in spurts. Whereas the course might not have provided optimal online learning conditions as described in the research papers cited earlier in this paper, it did fit their schedules, and they did have each other for support. In order for course work to mesh with students' busy work schedules it may be that there is a trade off between the opportunity to obtain a degree and the optimal conditions for online learning.

The courses in Josh and Christie's degree plan are offered both online and face-to-face. They carefully consider the course content when they make decisions about whether to register for online or face-to-face classes. For example, statistics and accounting they plan to enroll in the face-to-face sections where they can ask questions in class when they do not understand the material. They recognize that to be successful in the statistics and accounting classes they need face-to-face interactions. It is up to students to carefully consider what they need to be successful in courses and to determine whether face-to-face or online classes best suit their needs, when they are able to make choices about course delivery.

Many factors intersect when professors and students are confronted with the demands of online courses. Students' perceptions are based on their prior experiences with face-to-face classes. Professors need guidance and support as they restructure face-to-face classes to the online environment to meet the needs of busy students who like the flexibility available in online learning environments. Perhaps by examining the perceptions and experiences of first-time online learners insights can be gained as to impact of less than optimal conditions on students' learning and persistence in pursuing degrees online.

Becky is now teaching two online graduate classes and based on her personal experiences with an online course is working on providing interactive learning environments with challenging course content. Her online courses provide students with opportunities for student-to-student interactions, frequent communications from the professor, problem based learning, clear expectations for assignments, prompt postings of grades, and support. Josh and Christie continue coursework toward their MBA and have since enrolled in two more online courses.

## References

- Bober, M. J., & Dennen, V. P. (2001). Intersubjectivity: Facilitating knowledge construction in online environments. *Educational Media International*, 38(4), 241-250.
- Carnevale, D. (2001, Feb. 21). What matters in judging distance teaching? Not how much it's like a classroom. *The Chronicle of Higher Education*.
- Chang, S. L. (2001). What types of online facilitation do students need. In the Annual Proceedings of Selected Research and Development presented at the National Convention of the Association for Educational Communications and Technology. Atlanta, GA.
- Durrington, V.A., Berryhill, A., & Swafford, J.. (2006). Strategies for enhancing student interactivity in an online environment. *College Teaching*, 54(1), 190-193.
- Moore, J. L., & Marner, R. M. (2005). A comparative analysis of online discussion participation protocols. *Journal of Research on Technology in Education*, 38(2), 191-212.
- Mupinga, D.M., Nora, R.T., & Yaw, D. c. (2006). The learning styles, expectations, and needs of online students. *College Teaching*, 54(1), 185-189.

- Murphy, K. L., & Mahoney, S. E. (2001). Buy-in to online courses: reflections from e-learners' journal papers. Proceedings of WebNet 2001: World Conference on the WWW and Internet. Orlando, FL.
- Northrup, P. T. (2002). Online learners' perceptions for interaction. *The Quarterly Review of Distance Education*, 3(2), 219-226.
- Sims, R., Dobbs, G., & Hand, T. (2002). Enhancing quality in online learning: Scaffolding planning and design through proactive evaluation. *Distance Education*, 23(2), 235-248.
- Tello, S. F. (2002). An analysis of the relationship between instructional interaction and student persistence in online education. Unpublished doctoral dissertation. University of Massachusetts Lowell.