EVOLVING ROLES OF ONLINE AND FACE-TO-FACE INSTRUCTORS IN A LECTURE/LAB HYBRID COURSE

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ABSTRACT
Although lecture and lab courses are commonly used in higher education, there are potential problems with this format. However, technology is presenting new opportunities for teaching such a type of a course. This study explores the changes in the role of the instructors when a lecture and lab course evolved into a hybrid course, with the lecture portion of a course online and the labs kept face-to-face. As revealed through the use of discourse analysis, the roles of the instructors were transformed from teacher-centered to student-centered, low-interactor to high-interactor, and low-initiator to high-initiator. There was also an obvious merging or synthesis of the roles of the lecture and lab instructors, particularly in the areas of course administration, subject matter expertise, and face of the course.

INTRODUCTION
In higher education, teaching in a lab/lecture format is common (Perkins, 2005). These courses often consist of one lecturer, generally the expert, in a single large, lecture hall. The courses are complemented by multiple, small-group labs, often taught by adjunct faculty or graduate students. A second scenario is small group lectures (often by one or more instructors) accompanied by similar small group labs. There are potential problems with these formats. Large group lectures tend to lack multiple opportunities for instructor-student interaction, while small group lectures many times require more instructors than are available.

However, the advent of online learning has facilitated a new scenario for these lab/lecture formats. As suggested by current research (Angeli et al., 1998; Bonk and Wisher, 2000; Stephenson, 2001; Zheng & Smaldino, 2003; Murihead, 2000), online instruction varies in comparison to face-to-face instruction, which necessitates a re-evaluation of the online instructor's role. Changing from conventional means of instruction to online methods of teaching can often produce extraordinary modifications in the perceptions of teachers (Dringus, 2000). Some of the challenges and barriers for online learning that have been identified by researchers are the change of roles and responsibilities for instructors (Yang & Cornelious, 2004). Moreover, the changing roles of the teacher have required a change in pedagogies for the higher education lecturer (Yang & Cornelious, 2004).

There is very little research that examines the roles of the lecture and lab instructors when the lecture has gone online and the labs remain face-to-face. The focus of this study is to explore the changes in the roles of the instructors in this new hybrid environment. Due to the nature of the research question surrounding the changing roles and identities of the instructors, the identities and roles building task was selected as a focal point of my discourse analysis. This building task looks at how we use language to get recognized as taking on a particular identity or role (Gee, 2005). It attempts to ask and answer the following research questions for this study:

1. What identities or roles with their personal, social, and cultural knowledge and beliefs, feelings, and values, seem to be relevant to, taken for granted in, or under construction in this situation where the lecture was moved online?
2. How are these identities or roles stabilized or transformed in this situation?
In terms of identities and relationships, what Discourses are relevant (and irrelevant) in the situation? How are they made relevant (and irrelevant), and in what ways?

METHOD
Context. This study examined a course entitled, 'Introduction to Educational Technology.' The course had been traditionally offered in a lecture/lab format through a large College of Education in the United States. Introduction to Educational Technology is an introduction to computer productivity, multi-media,

communications, educational software, interactive media, reference, instructional applications, and ethical, legal and social issues course. It is the main educational technology course that a student takes prior to their application to the Teacher Education program; it is, therefore, critical that it be designed to inform, educate, and encourage students who are considering or might consider teaching as a career choice. This course has also been designed to meet the needs of future educators in applying technology within educational settings. As a result, students leaving the class should be able to demonstrate a sound understanding of technology operations and concepts; apply technology effectively to learning environments; explain methods and strategies for integrating technology to maximize student learning; apply technology to a variety of assessment and evaluation strategies; use technology to enhance professional productivity; and develop an understanding of the social, ethical, legal, and human issues surrounding the use of technology in education.

Data Collection. Data was collected from Samantha and Brian, graduate student instructors of the Introduction to Educational Technology course. Data on Samantha and Brian was from their observations of the course structure, students, and other instructors, researcher memos, and semi-structured interviews. Interviews were digitally recorded and were transcribed by a third party vendor. Questions asked in the interview were the following, however, additional questions were asked depending on the flow of the interview:

1. Why not do both lab and lecture online? In other words, why split it with the lecture online and the lab still face-to-face?
2. How have the roles of the lab and lecture instructors changed since the lecture went online?
3. How are these roles similar to when the lecture was face-to-face?
4. I'm going to list a few roles, and I want you to discuss whether or not you see them as being part of the lab or lecturer's role, and how they have changed since the lecture went online:
   a. Content expert (SME)
   b. Speaker
   c. Formal interactor
   d. Informal interactor
   e. Tutor
   f. Proctor
   g. Course Administrator
   h. Facilitator and guide
   i. Face of the course
5. What do you see as the positive changes to the role of the instructors? Why?
6. What do you see as the negative changes to the role of the instructors? Why?
7. What changes to the roles of the instructors would you make? Why?
8. What implications do you see this change in going online will have for future instructors? (training change, time commitment of instructors, etc.)
9. What future do you see for EME2040? How will it change? What will stay the same? Why?
10. Did students learn better and more deeply than when the lecture was face-to-face? Why or why not?

Observations were collected on large group lectures and labs taught by Samantha and Brian. Observations were made at the beginning, middle, and end of the course for each instructor.

Data Analysis. A large amount of data was collected (3 hour interviews with each instructor, 15 weekly class observations and memos from each instructor, and researcher memos that continued throughout data collection and analysis. The first step in the analysis was to take this large body of information and attempt to find the macrostructure (Gee, 2005). Gee argues that sizeable chunks of data have distinguishing ingredients and suggests the process of breaking down the data into these larger structures in order to help determine meaning. The interview and observational data were analyzed by applying this technique to all the data available for each instructor. For Samantha and Brian, this analysis process resulted in a story structure that roughly followed the flow of questions (see list of questions above).

Data was collected and analysis conducted using a constructionist theoretical orientation in order to reveal the ways in which groups take part in the creation of their reality. Of particular interest were the instructors' creation and transformation of their specific roles in an ongoing, organic process of acting on their interpretations and past knowledge and experiences. Gee's discourse analysis (2005) was applied to the unstructured interviews, observations, and researcher memos. This type of analysis was used to help consider how the language used by the instructors enacts social and cultural perspectives and identities (Gee, 2005).

Delimitations. This study involved findings based on instructor experiences in a course where the lab was face-to-face and the lecture was online. The context of this case study needs to be taken into consideration to make

transferability judgments. Lincoln and Guba (1985) explained transferability as the extent to which findings can be applied in other contexts or with other respondents. They suggest that the researcher can provide for transferability judgments possible on the part of those applying. One way this can be achieved is by providing rich, thick descriptions that will help others interested in making these applications to reach a decision about whether such application can occur. In this study, rich, thick descriptions were provided to enable the readers to make transferability judgments to potential applicable contexts.

RESULTS

Large group lecture component. Traditionally, Introduction to Educational Technology has been taught in a large group lecture, small group labs format. The large group lecture consisted of approximately 180 – 250 students meeting twice a week for fifty minutes in a lecture hall classroom. The classroom was equipped with older style wooden stadium seating in a bowl-shaped room which focused downwards towards the floor. Sound and computer overhead technology was also present. Students spread out across approximately 400 seats in preference groups, with the majority of students sitting at the top of the bowl (furthest away from the instructor). Students would take notes on the lecture and occasionally take part in small group discussion activities. Reading and other assignments based on the lecture and textbook were given at the end of a class session and collected at the beginning of the next. Assessments were given in the form of a midterm, final project, and comprehensive final exam. The instructor, Samantha, either taught from the podium or moved back and forth across the stage. The instructional method that she primarily used was direct instruction accompanied by a computer generated slide show presentation. This was due mainly to the size of the class. As a result, Samantha was more teacher-centered than student-centered in her teaching practices. Constrained by the instructional method and the size of the class, she behaved and taught as if she was the subject-matter expert (one who has demonstrated competency and mastery in a particular subject or topic) and was there to communicate knowledge to the student. As a result, this pushed the student into the role of a passive receptor of knowledge and placed Samantha in an increasing position of power in relation to her students – she was in possession of controlling influence.

Samantha also primarily interacted with her students through regulated interaction. Most sociologists define regulated interaction as planned and regulated sequences of social actions between individuals (or groups) who modify their actions and reactions due to the actions by their interaction partner(s) (Wikipedia, 2006). These social actions may occur in a workplace, family, or any other environment. Samantha's interaction time with students consisted of two hours and forty minutes per week, which was two 50 minute lectures and one office hour. She was also available to meet students one-on-one immediately prior to and after each lecture class, by appointment, and via email. She gave a lecture while students listened. She answered student questions during a specified question and answer period. She did not interact with students in accidental, repeated or regular ways during the lecture period (other socially defined ways of interaction). During office hours Samantha assumed the role of a regulated and regular interactor with students. Sometimes these meetings were planned, as a student had set up an appointment. However, most of the time these meetings were unplanned, but still very common occurrences where she would most likely interact with students. With that said, her office hours were sparsely attended by less than 5% of students. Moreover, she thought that both the large auditorium physical facilities and the lecture method seemed to lend themselves more to regulated interaction. According to Samantha, this imbalance in the favor of regulated interaction seemed to be a barrier to learning for her students.

In this environment, Samantha also initiated with her students very little. According to Webster's Online Dictionary (retrieved from http://www.websters-online-dictionary.org/definition/initiate on April 25, 2007), initiate means, "to begin or set going; make a beginning of; perform or facilitate the first actions, steps, or stages of; establish as an institution, custom, or trend". The lecture contained very few opportunities for Samantha to initiate with her students as most of her time was spent speaking. Initiation by Samantha consisted of a) her one weekly office hour (although this was spent waiting for students to come to her for help) and b) approximately twelve hours of written assessment feedback for the entire course. The result of this was that the student was left with the responsibility of listening to and processing the information in her lectures, coming to her office hour or making an appointment to get help, and asking any other pertinent questions.

Beginning the summer of 2005, the large group lecture was shifted to an online format. The physical environment of the lecture hall was replaced by an online learning management system that was built on the principles of social constructivism (Dougiamas & Taylor, 2003). Instead of meeting twice a week during set class times, students interacted with Samantha and her already prepared content in an asynchronous format. The curriculum was no longer delivered primarily through direct instruction. Additionally, the textbook was replaced by a series of relevant web-based articles. Students read web-based articles, took electronic surveys which gave immediate feedback, viewed flash presentations with audio, and interacted with each other and Samantha via forums. Students accessed the online learning environment at their convenience, completing assignments on a

weekly basis. Assessments were revised to reflect the new environment, exchanging the midterm for five quizzes – regularly spaced to provide quicker feedback, eliminating the final exam, and adding weekly writing assignments to increase student reflection on the current topic being studied.

After the shift of the lecture to an online format, Samantha's role as a teacher-centered purveyor and distributor of content underwent a transformation into that of a student-centered facilitator. The following excerpt illustrates this shift:

(After the lecture went online) "I (Samantha) had this conversation with this girl who, I mean it was beautiful. This is what should happen in teaching. She was like "Well, you know, I'm from the psych department. And when you ask this question in this way, I had interpreted it in this way because of my prior knowledge". And I said "Yes, you know, I understand that, but now looking at it within this educational framework and seeing this connections being made to these other elements, can you kind of?" And "Ah yes". You know, kind of facilitating that kind of reason, kind of helping them make the connections."

This shift in Samantha's role seemed to occur for several reasons. First, as an online instructor, the curricular content was already prepared before the course began. As a result, instead of spending time lecturing and preparing lectures, she was able to spend time facilitating students' understanding of the content, supporting them in their learning. Part of this transformation was that she changed from being a distributor of content to being a guide of the content. In fact, she described her experience as going from being "…only a content distributor to being a teacher." This allowed her to be more student-centered in her instruction (references to this shift were counted as 49 individual occurrences in the interview transcripts). Second, as lecturer, Samantha's role seemed to be transformed by the move of the course to the online environment, geographically separating the content from the instructor and giving her the opportunity to change her teaching practices

Moreover, the online environment placed different constraints on her than in the face-to-face lecture environment. In an online environment she had to be more specific and numerous with communication since her students were not physically present. This increased communication from Samantha spawned a boost in the amount of accidental and regulated dialogue with students, as well as an increase in the same kinds of negotiated learning with students (see figure 1). Empowered by this opportunity, Samantha applied her already present constructionist orientation and constructivist methodologies to transform her role into that of a student-centered facilitator. She thus became much more involved in scaffolding student knowledge, providing remedial and advanced help, and guiding students' to construct new knowledge.

The beliefs, feelings, and values of Samantha as a lecture instructor helped in this role transformation. According to interview and observation transcripts, Samantha passionately believed that active learning gets better results than passive learning (five separate occurrences). She also valued facilitation of student's learning, learning with the student, and helping students connect new knowledge to past knowledge and experiences over being a teacher-centered purveyor and distributor of content (seven separate occurrences). Her past experiences and convictions seemed to underlay her belief that a good instructor is much more than a content distributor and should strive to teach her students in a student-centered manner. Samantha firmly believed that teaching is characterized by facilitation of student learning, and a good instructor interacts a lot with her students. She believed that facilitation is a better instructional model to follow than a teacher-centered one, that it supports students in their learning better than a teacher-centered model, and that in facilitation, an instructor learns alongside her students.

When the lecture went online, there was a transformation in Samantha's interaction with students, best described in the following excerpt:

"…that whole feedback process is something that has been added to the communication. Before students didn't really ask me for feedback except for the final project of the course, which is the lesson plan. I mean, now I have students who have consistently asked me for every assignment to give them some type of feedback. Lots of questions clarifying knowledge, or information confusion. Yeah, but it definitely has gotten more personal. You know, after I had a student come into my office she e-mailed me with her personal web site and wanted me to take a look at it and, you know, give my opinion. You know, students who had read my bio in my research area had e-mailed me about what I am doing in video games. They had read I had done travel over the summer, and asked me where I went and stuff like that."

The change to an online environment seemed to shift the interaction level from regulated towards regular, repeated, and accidental interaction (see figure 1). Whereas students seemed to reserve their few questions for

the face-to-face lecture time, in the online environment their questions seemed to multiply, even to the point of asking Samantha for opinions on projects that were outside of the scope of the course. This particularly seemed to increase her accidental – unplanned and likely not repeated – interaction with students. Students also asked her for more and better feedback on assessments, and were more concerned with the quality of their work. This resulted in more regular interaction – unplanned but very common – interaction with her students around the online structure of the course and course assignments.

Samantha compared this kind of interaction to when she taught the face-to-face lecture, where students only requested feedback on the final assignment, while online the students requested feedback on all assignments. This increase in accidental and regular interaction with her students had the effect of increasing the personal relationship between Samantha and her students. Examples that she gave of this are that one student asked for feedback on a personal website, and others asked questions about her online autobiography. These types of interaction also had an upward spiraling effect on Samantha. Interview transcripts reveal that as students opened up and interacted with her in these ways that in turn encouraged her to be even more willing to build personal relationships with her students and to desire to be more accessible and reliable. Samantha's beliefs, feelings, and values helped in this role transformation from regulated interaction to more regular and accidental interaction. She had already believed that the multiplication of teacher-student interactions would increase student learning, and valued the connections with past knowledge and experiences that would take place in an environment that encouraged this. The online environment seemed to both provide the structure for increased accidental and regular interaction as well as release her from the constraints of the face-to-face environment that had kept her from interacting accidentally and regularly with her students. By going online, Samantha increased these kinds of interaction, which she valued as a tool to increasing student learning (see Figure 1).

Samantha	Time spent in accidental interaction	Time spent in regular interaction	Time spent in regulated interaction
Face-to-face lecture instructor	0	16	48
Online lecture instructor	79	158	7

Figure 1: Time (in hours per course) spent in different types of interaction between instructor and students, face-to-face and online

When the lecture went online, Samantha's role as an initiator greatly increased, which is best exemplified in the following interview excerpt:
Samantha: "I think that there has definitely been a shift. I think it has been a good shift, though. I think the lecturer has had to take, believe it or not, more of an active kind of preemptive attitude with the class because it is easier to read people when you are giving a lecture by looking at their faces and body language.

Interviewer: Even with the 200 people?

Samantha: Exactly, you know. But online you can't get that feeling unless you are going to the discussion boards and putting out calls to contact me. You know, you have to be so much more rigorous with the grading and, you know, grade things as soon as they come in."

Observation data shows that instructor-initiated feedback on assessments increased to 5-10 hours a week, or approximately 180 hours per semester (see Figure 1). In addition, the amount of time Samantha spent replying to student's questions via email and her collaboration time with the lab instructor also increased significantly. She seemed almost forced to take on an active, preemptive attitude, being involved by reading student postings on the online discussion boards, initiating with students on the discussion boards, and providing more and quicker feedback on assignments. Samantha's beliefs and feelings, and values seemed to help in this transformation to high initiator (see Figure 2). She had already believed and was passionate about the idea that initiating is better than being passive and that a true instructor/initiator supports students through consistent initiation. As a result, through the move to the online environment, her beliefs, feelings, and values about initiation were empowered to be more fully expressed than in the face-to-face lecture environment.

	Time spent in instructor feedback on assessments	Time spent in email communications with students	Time spent in planning and collaborating with lab instructor
Face-to-face lecture	16	5	2
Online lecture	80-160	20	20

Figure 2: Time (in hours per course) spent in instructor initiation with students, face-to-face and online

Small group lab component. Traditionally, each small group lab held approximately twenty students and met once a week in a university-provided computer lab containing Macintosh G5 computers. The room was also equipped with an instructor's computer that provided sound, video, and computer projection technology. Students sat in seven rows of computers which were perpendicular to the front of the room and the projection screen. The labs were taught according to the instructor's preference. Some instructors provided guided, step-by-step instruction through the use of pre-set software tutorials, while others allowed students to work independently while providing one-on-one support. After a particular software program was introduced, students would first complete a pre-set tutorial on the software consisting of step-by-step instructions. This tutorial would then be followed by a student-generated project using the same software. Students would be assessed based on technical proficiencies in each software package and on how well their project fit into an educational environment.

Participation was also assessed based on student lab attendance. One of the lab instructors, Brian, functioned in the role of a facilitator. He spent most of his time during class in either one-on-one or small group facilitation of knowledge. As a facilitator, Brian came along side individual and small groups of students and helped them to understand new knowledge and skills based on their past experiences and knowledge. As a result, most of his instruction was student-centered as opposed to teacher-centered. Constrained by the instructional method and his own beliefs about teaching and learning, he behaved and taught from a student-centered, constructivist perspective. As a result, this pushed the student into the role of a co-constructor of knowledge and placed Brian in a more equal position of power in relation to his students – he was in possession of controlling influence, but was also a co-learner and co-constructor alongside his students. He was available to meet students one-on-one immediately prior to and after each lab class, during three weekly office hours, by appointment, and via numerous email communications.

Before the lecture went online, Brian interacted with his students in a very accidental way. As he passed by the computer lab, he would often see his students working on an assignment and stop by to see how they were doing. Even if he saw a student eating lunch in the union building he would approach them and ask how they were doing. Also, he would also send out an email to remind his students of when his office hours were and when particular assignments were due. During class and office hours, he interacted more regularly with students, providing verbal and written feedback on assignments, and tutoring students one-on-one and in small groups. His only regulated interaction with students was when he planned short lectures or small group activities for the lab.

Brian was also a frequent initiator with students. He regularly initiated with students to discuss lab activities and projects, both inside and outside of class. In class he initiated with students through frequent question and answer times, providing easy to understand feedback and grading, and stopping by random students and asking how they were doing. Outside of class, he used email, impromptu visits with students when he saw them in the computer lab or elsewhere, and office hours to initiate with his students. This high level of initiation led students to perceive him as readily willing and available to help when they needed him.

When the large group lecture was shifted to an online format, the small group labs were left in their same format. The lab sections met in the same physical environment described above. However, changes to the lecture cascaded into the labs, forcing changes there as well. After the lecture went online, the lab instructor was the only face-to-face instructor with whom the students interacted, and this interaction increased in quantity, type, and geographic location. If a student wanted to talk to their instructor about an issue, they met with Brian, which led to a huge increase in the quantity of his interaction with students. This is despite the fact that Samantha was still available to meet in face-to-face office hours. Also, the type or breadth of issues handled by Brian increased to include lecture, as well as lab-related matters. Finally, his interaction with students increased in many locations – before, during, and after class, as well as during office hours. During class, Brian took on a larger role as content distributor, which increased his interaction with students. Interestingly, this seemed to increase student confidence in communicating with Brian, resulting in an increasing position of power in relation to his students – he was in possession of more controlling influence with his students. (The increase in the types of interaction with Brian, regular and regulated, demonstrated this increase in power. This is because interactions over issues of assessment, homework, projects, grades, etc. were present only after the shift to an online lecture. See Figure 3.)

Brian	Time spent in accidental interaction	Time spent in regular interaction	Time spent in regulated interaction
Face-to-face lab instructor	32	83	16
Online lab instructor	56	50	32

Figure 3: Time (in hours per course) spent in different types of interaction between instructor and students, face-to-face and online

Much of the types of interaction that Brian had were through one-on-one or small group tutoring, and this was unchanged through the move of the lecture online. He still had many opportunities in and out of class to accidentally and regularly interact with his students. However, when the lecture went online, there seemed to be a cascade effect that spilled over into the lab environment, increasing the amount of regulated interactions he had with students. Brian found that he had increased responsibilities in course administration and proctoring online assessments, which required more regulated interaction with students. The net result of this was less time during class for accidental and regular interaction between him and his students. This seemed to result in increased student use of Brian's office hours, as well as increased email interaction, in order to offset the loss of the accidental and regular interaction time. Brian's values, beliefs, and feelings were counter to those that underlie regulated interaction. As a result, he reported feeling torn between "teaching" students and communicating necessary information. However, he also felt that the move online would better the course overall, so he was willing to make the necessary changes to his instruction.

Brian's initiations with his students also continued after the lecture went online. However, his role as initiator was now transformed through the addition of added responsibilities. Prior to the course going online, he had no responsibilities in course administration and proctoring of online assessments. However, now he found himself deluged with a large amount of verbal and electronic communication from students regarding both of these areas. Further, after he answer students' initial questions, more questions on other non-lab oriented activities began to fill up his voicemail, email inbox, and class time. Interview transcripts revealed thirty seven separate references to increased administration, proctoring of online assessments, email, and face-to-face questions.

For example, "…when the class ends I always have students coming up and ask one question about this or that… they might ask us a question about when it's going to be graded or when will the answers be on the web and things like that… which makes the instructor need more time to answer those individual questions."

All of these emails, questions, and increased responsibilities led to an increased amount of time that he needed to initiate with students on these areas. He initiated regular email communication regarding upcoming online assessments. In class, he set aside time at the beginning or end to share announcements concerning these assessments, as well as any other course administrative announcements. He also devoted an entire lab class to the introduction to the online learning environment software. As a result of all these things, Brian's role as initiator greatly increased.

Synthesis of roles: Lecture and lab instructor roles merging? A curious synthesis of the two previously exclusive roles of lab instructor (Brian) and lecturer (Samantha) also took place when the lecture went online. Prior to the lecture going online, most responsibilities and roles were divided between instructors of the lecture and lab portions of the course. Responsibility for explaining and assessing lab assignments and training and tutoring students in software capabilities belonged to Brian and Samantha was not involved at all. Delivering lectures, proctoring midterm and final exams, and grading lecture projects were the sole province of Samantha. However, after the shift of the lecture online there seemed to begin a merging of Brian and Samantha's roles, as illustrated by the following interview excerpt:

Samantha: "I mean, like I said we have kind of had this flow of stuff between both of the roles, between lecturer and lab instructor, and I think both of us have taken on additional responsibilities that maybe we didn't have before. But, you know, I think it has made the class a stronger class."

The realm of course administration used to be the responsibility of the lecture instructor. After the lecture went online, Samantha still retained the majority of responsibility in this area. However, Brian also took on the course administrative responsibilities of course announcements, proctoring of online assessments, and participation in the planning and implementation of the course. The merging responsibilities seemed to be encouraged by the move of the lecture to an online environment, a good professional relationship between Samantha and Brian, a common goal and focus, and their dual commitment to excellence. These elements helped Samantha and Brian's mentality to shift from that of a "lone ranger" instructor to that of team instruction.

Another area that seemed to merge for Brian and Samantha was that of expertise of subject matter content. When the lecture was face-to-face, the instructors exercised expertise over their instructional domain. The lecture instructor was the subject matter expert (SME) of educational technology in the classroom, educational theory and software, productivity software, Internet safety, web resources, preparing content for delivery, online evaluation and assessment, digital technologies, distance education, and the digital divide. On the other hand, the lab instructor was SME of all of the software packages used (Microsoft PowerPoint, Microsoft Excel, Inspiration, Adobe Dreamweaver, Adobe PhotoShop, iMovie), operating systems (PC and Mac) and individual tutoring skills. However, with the shift of the lecture to an online environment these subject matter expertises merged. Students began to ask more questions about the lab to the lecture instructor and vice versa, leading both Samantha and Brian to become more of a SME of each others' materials. Samantha and Brian's beliefs, feelings and values acted to support this synthesis. They firmly believed that being an expert of any domain is relative, and that the important thing was that they know a little more than their students.

Brian said, "I think that the instructor needs to be as knowledgeable as possible. I really don't like the word expert, because in my personal belief nobody is the expert of anything… We know as much as we can. Things change so much, especially in technology and in the integration of technology that the word expert is like a big hat for anybody."

Samantha said, "You know, they (lab instructors) have had to become more of a content expert what the course is covering, and they have gotten more lectures. So I think it has developed more of a synthesis of the roles."

This attitude toward being an subject matter expert helped Samantha and Brian as they were growing in their own knowledge of the others' domain – they didn't feel like they had to have everything mastered in order to teach some of it effectively. They also believed that subject matter expertise was only useful if they could effectively use it to help make connections between students' past knowledge and experiences and the subject matter. Also, application of content, not just content for the sake of content, was highly valued by Samantha and Brian. This belief and value helped them to bridge the gap between lab and lecture, helping students to see many connections that would have otherwise gone unseen. Their beliefs and values helped to drive the synthesis of these roles. These attitudes toward being a subject matter expert were referenced sixteen times in the transcripts.

A final area of merging of the instructors' roles was that of the "face" of the course. This role is defined by the researcher as the individual who, in the eyes of the student, becomes synonymous with the course. Prior to the move of the lecture to an online environment, students referred to the course as being taught by the lecture instructor, and frequently referred to the course as "Samantha's course." Students would often ask lab-related questions to Samantha and acted as if she was the final authority for the course in terms of grading, dealing with student issues, etc. However, this changed after the lecture went online. Brian became more synonymous with the course. This was evident from multiple observations of students' informal conversations, referring to, "Introduction to Educational Technology…. my instructor is Brian," without any reference to Samantha, and that students sought out Samantha much less for lab-related questions. In other words, the "face" role became more evenly divided between the lab and lecture instructors. Physical sight of an instructor increased the "face" role for Brian, and lack of physical presence acted to decrease the "face" role for Samantha. However, Samantha learned that her "face" role could be maintained or increased through increased informal online communication and feedback – resulting in increased personal relationships with students. Brian learned that he could increase his "face" role by teaching the lab skills within the framework of the lecture content, thus helping students to connect the lecture theory to the technical lab skills.

The role changes discovered above are all confirmed in the literature focused on courses that make a complete shift to an online format. First, one of the primary instructor role changes when a course goes online is the change from the role of a teacher-centered purveyor of knowledge to that of a student-centered facilitator. It is widely suggested that online instruction is a good format for student-centered facilitation (Volery, 2000; Webster and Hackley, 1997; Wu & Hiltz, 2004; Yang & Cornelious, 2004). Ascough (2003) argues that this is due to the lessening of control over the class that the instructor experiences in an online environment. Also, as Knowlton (2000) has suggested, online education involves the instructor and students together as a community of learners. The instructor serves in the facilitator roles of coach, counselor and mentor of the students. According to Maor (2003), facilitator is perhaps the most challenging role of the online teacher. It is considered the most difficult role because the instructor has to constantly evaluate the process of peer interactions, select and filter information for student consideration, provide thought-provoking questions, and facilitate well-considered discussion (Kettner-Polley, 1999; Maor, 2003).

Another primary role change defined in the literature was the change from a low-level interactor to that of a high-level interactor. Volery (2000) suggested that the role of the online instructor changes because the level of interaction has changed in online delivery. According to current research, the provision of instructional and emotional support to students (Muirhead, 2000), and an increase in social interaction and focused communication (Bonk *et al*., 2001; Kanuka & Anderson, 1998; McAlpine, 2000; Moallem, 2001; Murphy & Cifuentes, 2001; Oliver, 2000; Saba, 2000) contribute to this increase in the level of instructor interaction. Social interaction is sustained by constant communication that uses many different forms. Focused communication necessitates the online instructor's facility to supply detailed and regular information about course goals and objectives, assignments, and expectations. This would include providing feedback and instruction, probing, asking questions, stimulating the discussion, synthesizing students' comments, and referring to outside resources or experts in the field. Focused communication from the instructor supports students' learning and encourages student interaction. This works to change the instructor's role from a low level interactor to that of a high level interactor.

A third role change is the change from a low-level initiator to that of a high-level initiator. In online instruction, faculty initiate contact with students through features such as e-mail, online office hours, and synchronous chat rooms (Gueldenzoph, 2003). To be a high level initiator, communication must involve more than mass e-mail messages to the entire class. Individual, reflective e-mail to each student should be maintained on a regular basis. Additionally, a high level initiator role carries with it increased responsibilities in management and administration. Maor (2003) confirms this when she talks about her, "…managerial role… co-ordinating the unit, intervening during the semester to keep the momentum of discussion going and frequently e-mailing individual students" (Maor, 2003, p. 133). This role seemed to go beyond mere administration into the realm of instructional design (Zheng & Smaldino, 2003), co-ordinating the unit and overseeing tasks, course structure and requirements (Vonderwell & Turner, 2005).

IMPLICATIONS

Emerging Discourses. According to Gee (2005), Discourse occurs when language and non-language are merged to enact specific identities. In other words, people use language and ways of interacting, feeling, believing, valuing, and using various sorts of objects, symbols, tools, and technologies to recognize themselves and others as meaning and meaningful in certain ways. These uses of language and non-language create Discourses. Two discourses seemed to emerge from the data as relevant in this situation: the Discourse of being a good instructor, and the Discourse of technological change.

The Discourse of being a good instructor was first evident in the language used by Samantha and Brian. Terminology like student-centered, focus on the students, choice for students, interaction, active, social constructionist, constructivist, guide, facilitator, connecting new knowledge with previous knowledge and experiences, initiator, team player and co-constructor of knowledge were used approximately 190 times in the interviews to create an identity of a good instructor. Based on these references, both Samantha and Brian viewed the actions of a good instructor as quality communications with students while assessing students' learning through the use of real-world, authentic assessments. Their interactions were more informal; with students as a guide, facilitator, and co-learner, and with other instructors as peers and co-learners. Samantha and Brian possessed strongly integrated values of the students coming first before anything else, as well as learning being more important than grades combined with beliefs that students are too focused on grades, learn better when instruction is facilitated, not disseminated, and that students need to have their desire to learn reawakened through good instruction. These beliefs and values strengthened the kinds of language, actions, and interactions shared by Samantha and Brian above. They preferred the location or place of a small group, face-to-face class best, although an online class was much preferred to a large group lecture hall. Finally, Samantha and Brian used the tools of guided inquiry, collaborative projects, independent study, and online learning environments to enact their identity of a good instructor.

The Discourse of technological change was evident through the language used by the instructors. Language like embracing and accepting were used by Samantha and Brian to enact the identity of an individual that supports technological change. Their actions that supported this language were early adoption of new technologies and an availability to instruct students in how to use virtually any technology. Interactions that influenced this Discourse were the Samantha and Brian's interaction with technological change and their encouragement of others to adopt technological change. Of significant note was that Brian spoke the language of technological change, yet minimized his interaction with it, while Samantha both spoke and interacted fully with technological change. This seems to indicate that Brian provided counter talk to the Discourse, helping to redefine the identity of an adopter of technological change through his reticence to adopt change. Values and beliefs of Samantha as an immediate adopter were that change for the sake of change was virtually always a positive thing, and that

adopting new technological change is also almost always positive. The reticent adopter (Brian) seemed to counter these beliefs with a desire to only adopt technology that would fit his current instructional practices. Tools used by both Samantha and Brian to make this Discourse relevant were the actual technology available, as well as their theoretical orientation and instructional methodologies.

CONCLUSION AND FUTURE DIRECTIONS

As revealed through our use of discourse analysis, the roles of the instructors were transformed from teacher-centered to student-centered, regulated interactor to accidental and regular interactor, and low-initiator to high-initiator. These roles changes are confirmed in the literature discussed above.

There was also an obvious merging or synthesis of the roles of the lecture and lab instructors, particularly in the areas of course administration, subject matter expertise, and face of the course. Relevant Discourses exposed were that of being a good instructor and that of being an adopter of technological change.

There are five lessons that we learn from Samantha and Brian's experiences with teaching a blended course that could be applicable on a wider basis:

1. ***Understand your instructor's perspective*** on what is a good instructor. If the instructors in this study had begun with different theoretical orientations and teaching practices, their roles would most likely have changed in a different manner. If you are seeking to transition a course to a blended approach you must consider what your instructors bring to the table. One instructor may be a gifted lecturer while another may be outstanding at leading and facilitating discussions. Choosing the right person for the right environment in this case may mean giving the online lecturer role to the instructor with the discussion facilitation skills and finding another place for the other person. It will also most likely result in less of a learning curve for the instructor as he or she becomes familiar with the online environment.
2. ***Consider your instructors and students familiarity with technology.*** Not every course is well-suited for an online environment, and one of the factors that contributes to that is the instructor's comfort around technology. Is the instructor fearful of new technologies, or do they embrace it? Are the students familiar with technology, or do they hold a more apprehensive attitude? Addressing these concerns may mean choosing a different instructor, providing more technology training for instructors.
3. ***Get rid of the lecture/lab division.*** The instructors of this course suggested that the lab/lecture division be abolished. In its place will be a course structure that is divided into groups of students. The three current instructors (two lab and one lecture) will each teach three labs and be responsible for the online lecture instruction of the same students. A uniform online curriculum will help control for individual teacher differences and assure high quality content, opportunity for more future research and an opportunity to market the course statewide.
4. ***Train, train, train.*** Instructors also listed the need for teacher training as a high priority for future directions. It was suggested that training in issues related to time, technical aspects, how to teach online, and audience analysis were needed. It was also suggested that new instructors should "shadow" experienced instructors in an apprentice-master arrangement. This methodology would help new instructors to approach teaching equipped with realistic expectations, competent pedagogical and technical skills, and confidence in instruction.
5. ***Go with the flow.*** Moving a large group lecture to an online environment will most likely create potential opportunities to construct a more student-centered instructional environment. Instead of resisting change and trying to keep traditional roles and responsibilities intact, embrace change. Here's a few ways you can do this:
   a. Allow the increased interaction with students to replace more formal information conveyance techniques.
   b. Permit traditional assessments to give way to more authentic, online projects.
   c. Take advantage of the opportunites for collaborative learning that a blended environment affords.
6. ***Time is of the essence.*** Crucial to a shift to a blended approach is the large increase in time commitment for instructors. It is important to be aware of this increase, and to plan accordingly. Plan for more instructors, and increased hours in current instructor's schedules. Meet with your instructors to envision them for this change, and equip them with the planning skills necessary to work together as a team instead of merely as a group of individuals. In our study, the move to an online environment prompted more interaction between instructors, forcing all instructors to be subject matter experts of both spheres of content, spreading responsibilities across all instructors, and creating an instructional team rather than individual instructors. Be sure that your team is ready for this kind of shift as well.

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However, the aforementioned literature is focused on courses that make a complete shift to an online format. Other research looks at blended formats of the same course (partially online and partially face-to-face). A shift to an online environment for teaching and learning can lead to a big change in the roles of instructor.

Finally, the results of the narrative analysis were laid as a tracing upon the discourse analysis results, and conclusions were made regarding the similarities and differences. Both methodologies were used in order to provide methodological triangulation (Mathison, 1988), thus increasing the validity of the study.

And narrative analysis (Labov 1972). Following Labov's (1972) narrative methodology, data analysis consisted of dividing the narrative into clauses that were then cataloged into six components; abstract (summary), orientation (sets the scene), complicating action (central details or problem), event (actual happening), evaluation

(narrator judgments), and coda (conclusion and reflections). This methodology allows the researcher to understand the central themes of the narrative and to become acclimatized with the narrator's perspective and interpretive framework. This analysis was applied to the narrative and journal notes of one of the lab instructors.