

A Working Typology of Intentions Driving Face-To-Face and Online Interaction in a Graduate Teacher Education Course

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The study examined the intentions driving face-to-face and online interaction in a graduate online course from the meaning perspectives of the teacher and students. Participants in the study were eight students and the teacher of a graduate teacher education course at a southwestern university. The theoretical framework of the study was based on symbolic interactionism and the methodological approach was based on the canons of interpretive research as Erickson (1986) laid them out. Data analysis identified several intentions driving interaction. These included discussing and exchanging ideas, negotiating aspects of the course, providing feedback, gaining access and status in a setting, and socializing. The discussion and data excerpts clearly illustrate that underneath the surface of what, appear as ordinary day-to-day interaction, there are multiple meanings that are constructed and assigned when participants engage in joint action. Those meanings and intentions are what drive interaction.

The use of information technologies in teaching and learning is blurring the boundaries between traditional face-to-face and distance education. The use of the Internet in education is growing rapidly. According to the National Center of Education Statistics (2001), by Fall 2000, 98% of public schools in the United States had access to the Internet, in comparison to

35% of public schools that had access to the Internet in 1994. Furthermore, the ratio of students to instructional computers in public schools had decreased to 5 to 1, which is the ratio that is considered as the appropriate ratio for effective use of computers in schools. As computers and Internet invade public schools, opportunities for distance education and networked learning grow. There is a strong need to educate teachers how to integrate the Internet and other telecommunication technologies in their teaching. Educational institutions are encouraging, and at times requiring, teachers and faculty to develop online courses. As institutions battle for dominance in the area of online education, few would contest that online education is here to stay.

Several teacher preparation programs offer graduate and undergraduate level courses on the use of telecommunication technologies for teaching and learning. To meet the needs of preservice and inservice teachers, several of these courses are offered at a distance, allowing for place and time independence and at the same time offering the opportunity to students to experience first hand how it is like to be a student in a distance education course.

The study reported in this article examined the social organization and meaning of interaction in a graduate teacher education course delivered by way of a combination of online and face-to-face instruction. Interaction is one of the most important components of any learning experience (Dewey, 1938; Vygotsky, 1978) and it has been identified as one of the major constructs in distance education research (McIsaac & Gunawardena, 1996; Moore, 1989; Vrasidas, 2000; Wagner, 1994). The main question addressed in this study was the following: What are the intentions driving interaction in this course? Data analysis and the detailed descriptions included in this report will show how interaction unfolds in naturally occurring situations and how the meanings of interaction are constructed through social action. A working typology of meanings was generated which illustrates the intentions of the teacher and students driving interaction in this particular course.

Distance education researchers identified four kinds of interaction. Moore (1989) made the distinction between three types of interaction: (a) learner-content, (b) learner-teacher, and (c) learner-learner. Hillman, Willis, and Gunawardena (1994) argued that past discussions of interaction failed to acknowledge the fact that for any of the three types of interaction to take place, the learner has to interact with the medium used for delivering distance education. Therefore, they proposed the learner-interface interaction. Several studies showed that technology skills such as using computer conferencing and electronic mail are important for successful participation in online environments (Ross, 1996; Tsui & Ki, 1996).

Another major theoretical construct in distance education that relates to interaction, is the idea of transactional distance. Moore (1991) postulated that transactional distance is the psychological and communication gap that results from the geographical separation between the learners and the teacher. The two components of transactional distance are dialogue and structure. Structure refers to the overall design of the course. Dialogue can be described as the learner-teacher interaction. Saba and Shearer (1994) conducted a study to empirically verify the concepts of transactional distance, dialogue, and structure. The results indicated that transactional distance depends on the rate of dialogue and structure. When dialogue increases, transactional distance decreases. When structure increases, dialogue decreases, and transactional distance increases. Transactional distance is an important construct in distance education because, understanding the factors that influence the psychological gap between the teacher and student and the student's connectedness with the social environment of the class, will allow educators to design instruction in ways that will reduce the distance and improve student learning.

Transactional distance, the psychological gap between the student and teacher, relates to the notion of *social presence*. The term *social presence* is derived from research in the field of social psychology of telecommunications. According to Short, Williams, and Christie (1976) who coined the term, social presence can be defined as the degree to which a medium allows the user to feel socially present in mediated situations. Social presence is a quality of the medium itself. Different media have different degrees of social presence. It is hypothesized that the more cues transmissible by a medium, the more social presence characterizes the medium. Therefore, media such as interactive video, and multimedia computer conferencing, carry with them higher degrees of social presence than text-based computer-conferencing systems. However, Gunawardena (1995) found that social presence could be promoted in online environments by employing strategies, such as collaborative learning, which encourage interaction. Therefore, distance educators can structure for interaction and dialogue thus reducing transactional distance.

Face-to-face classroom interaction has been examined for decades. Mehan (1979) conducted one of the most prominent studies of face-to-face classroom interaction. He examined interaction by observing naturally occurring classroom events and found that during classroom lessons the predominant pattern of interaction was Initiation-Response-Evaluation (I-R-E). That is, the teacher initiates a topic and calls upon the student to respond. The student responds and the teacher evaluates that response. Mehan (1980)

also found that teachers and students have agendas that are either explicit or implicit during interaction. These agendas are the driving forces that shape interaction and social organization in the classroom. In Mehan's words:

Students, like teachers, have objectives that they would like to meet during the course of a given classroom event, a school day, a year. And, like teachers, students employ others and their surroundings as contexts for achieving these objectives. The simultaneous presence of students' and teachers' agendas suggests that the classroom be viewed as a social activity in which teachers and students mutually influence each other and collaboratively assemble its social order (p. 139).

In most of the research conducted in distance education, intentions driving interaction, agendas, and the participants' meanings were ignored. For Blumer (1969), the meanings of the interacting parties were crucial in studying interaction. The present study's interpretive theoretical and methodological ideas are based on the three premises that Blumer posed for symbolic interactionism. First, human beings act upon the world on the basis of the meanings that the world has for them. Second, the meaning of the world is socially constructed through one's interactions with members of the community. And third, the meaning of the world is processed again through interpretation. The traditional approach to research tends to ignore the importance of meanings in shaping behavior (Erickson, 1986). Interpretive research focuses on the perspectives of the actors involved and attempts to understand the multiple layers of meaning represented by human action.

The author defines interaction as the *process consisting of the reciprocal actions of two or more actors within a given context*. The minimum interactional sequence consists of two reciprocal actions. Interaction always takes place in response to others' actions or in relation to others. Interaction is an ongoing process that resides in a context and also creates context. There is a reflexive relationship between context and interaction that prevents us from isolating interaction from its context. To examine human action and interaction following interpretive methodology, it is important to examine carefully the context and the moment-to-moment events that lead to further interaction among people.

SETTING

The unit of study was a graduate teacher education course at a major southwestern university. The course dealt with the use of telecommunications

for teaching and learning and was delivered in a combination of face-to-face and online instruction. Participants in this study were the eight students enrolled and the professor of the course. Pseudonyms were used for the teacher and students. Two of the students were already teachers in K-12 and three were teaching at the college level. The other three students were hoping to be appointed as teachers upon completion of their graduate studies. Online interaction was supported with the computer conferencing software *FirstClass* and a website that had information about assignments, schedule, and resources. *FirstClass* is an advanced text-based computer conferencing system that allows for synchronous and asynchronous communication. It integrates electronic conferencing, electronic mail, access to information databases, file transfer and sharing, and real time online discussions among multiple users.

Class met the first five weeks face-to-face in a computer lab (Table 1). Then class met two weeks online, one face-to-face, one online, one face-to-face, four online, and two face-to-face.

Table 1
Schedule of Class Meetings

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Meeting	F	F	F	F	F	O	O	F	O	F	O	O	O	O	F	F
Note: F=face-to-face meeting; O=online meeting																

Students were required to collaborate and work in pairs to moderate one online and one face-to-face discussion. Moderating a discussion typically consisted of the following interactional sequence. First, moderators posted questions and material online in the asynchronous discussion board for their peers to read and prepare for the discussion. Students read the material, prepared for the discussion, and responded to the questions posted by the moderators. Then, if the discussion was scheduled to take place face-to-face, the moderators would give a brief presentation of the topic and then assign specific tasks to pairs of students for discussion. After the pair work, pairs reported their findings to the whole class, followed by a discussion by all students and the teacher. Similarly, if the discussion was scheduled online, the moderators introduced the topic, assigned pairs, and asked them to enter private chats for discussing specific topics. After 20 to 30 minutes, all the pairs were invited back in the main chat where they presented their findings and discussed with the rest of the class. Finally, the moderators summarized their findings and posted them online. This pattern was the same for the four face-to-face and four online discussions moderated by students.

METHODOLOGY

To address the research question of “what are the intentions that drive interaction,” the approach followed was based on a symbolic interactionist theoretical framework (Blumer, 1969) and Erickson’s (1986) methodological ideas. Data were collected during a 16-week period in Fall 1998. Data sources were face-to-face class observations, semi-structured interviews, online messages, students’ assignments, and synchronous chat transcripts. All observations and interviews were recorded and transcribed. Interviews were also conducted after the initial data analysis to get the participants’ opinion about the findings. For data analysis the inductive and deductive stages proposed by Erickson were followed. After multiple readings of the data, a list of intentions was generated. Evidence was then looked for that both supported and disconfirmed the categories generated. Based on careful data analysis and weighing of all the evidence, only the categories that were supported by enough evidence were adopted.

For Erickson (1986), the fundamental validity criterion for interpretive research is defined by the attention paid to “the immediate and local meanings of actions, as defined from the actor’s point of view” (p. 119). After the particulars are closely examined, the concrete universals can be reached and claims about the meaning of interaction in online courses can be made. Generalizability begins within the case at hand. In this study the author attempted to find instances that illustrate recurring themes in the setting examined. The reader should compare the findings of this study with their contexts and others that they are familiar with, to see if the results of this study generalize to their cases.

The validity of this account depends, among others, on the comprehensiveness of the study and description of the procedures followed. This study should be judged for coherence and not for correspondence of the findings with the “objective” world. By presenting a detailed, comprehensive, and coherent account the reader is allowed to act as a coanalyst of the study and make judgments about the strength of the categories that will be presented.

DATA ANALYSIS AND RESULTS

According to symbolic interactionism, individuals act on the world based on the meanings that the world has for them (Blumer, 1969). The data from this study support the idea that all human action is purposeful. Interaction in this course took place when participants attempted to achieve a

task or meet a need. The author first read the complete data record three times. Multiple readings of the data allow the researcher to better understand and digest the information collected from the setting and identify major themes. During the first three readings, ideas from the data were recorded, noted, and documented in memos. After reading the data transcripts, it was clear that interactions that took place in this course were driven by the intentions of the participants. The data was then read for the fourth time, notes were taken, and detailed memos on instances indicating kinds of intentions that participants had while engaging in interaction were written. By carefully examining online messages, memos, and interview, observation, and synchronous chat transcripts, it became clear that behind each interaction there was an intention and a task which participants attempted to accomplish. The researcher then proceeded more systematically and sorted messages and transcript excerpts according to the intention they were illustrating. Tables were created and examples of interactions according to the intentions that were driving them were organized. Some of the interactions had one clear intention behind them. Other interactions served multiple intentions.

The discussion that follows illustrates examples of intentions that drove face-to-face and online interaction in this course. Table 2 illustrates the intentions of the participants identified in the study in alphabetical order with a respective example of interaction. The intentions of the participants identified in this study were the following: (a) allocate learner accountability, (b) collaborate on projects, (c) discuss and exchange ideas, (d) evaluate student learning, (e) facilitate student learning, (f) gain status and access in a setting, (g) get good grades, (h) get or provide help on technology, (i) get or share information about the course, (j) help the moderators, (k) learn about telecommunications, (l) model expert behavior, (m) moderate discussions, (n) motivate students, and (o) negotiate aspects of the course. Only a few of the intentions summarized in Table 2 are discussed in detail. Direct quotes from the data illustrate the complexity of interaction and how in several occasions there were multiple intentions behind each interaction. In addition, the data segments discussed illustrate the great overlap among intentions driving interaction and the difficulty for establishing clear-cut categories and boundaries for classifying interactions. All text messages and chat transcripts are presented as they were downloaded from the online conferences. Spacing, capitalization, and typographical and grammatical errors were left as they were when participants created and posted them online.

Table 2
Summary of Participants' Meanings of Face-To-Face and Online
Interactions According to Intention

Intention	Example of interaction
Allocate learner accountability	Teacher discusses with students and asks their input on structuring the online discussions.
Collaborate on projects	Student works with a classmate to moderate a discussion.
Discuss and exchange ideas	Student posts a response to the moderator's question in the asynchronous discussion folder.
Evaluate student learning	The teacher evaluates students' homework and assigns grades.
Facilitate student learning	The teacher makes the information relevant to the students' experiences.
Gain status and access in a setting	Student contributes a message in a discussion to influence admission in the program.
Get good grades	Student responds to teacher questions.
Get or provide help on technology	A student helps a classmate to post a message using FirstClass.
Get or share information about the course	A student asks the teacher a question about the evaluation procedures in the course.
Help the moderators	Students and teacher participate in the discussions.
Learn about telecommunications system.	Student asks a question about a delivery system.
Model expert behavior	Teacher demonstrates moderation of discussions and asks the students to take notes.
Moderate discussions	Student moderators assign pairs during an online discussion.
Motivate students	The teacher praises a student's contribution.
Negotiate aspects of the course	Students discuss with classmates and the teacher the expectations for class discussions.
Provide feedback	Student moderators comment on a classmate's contribution in a synchronous chat.
Socialize	Student chats with peers during class about issues not relating to the course.
Submit homework	Student submits homework for the teacher to grade.

Get or Provide Help on Technology

A common interaction during the beginning of the semester was driven by students' intention to get help on using technology. All online interactions were mediated through *FirstClass*. Students often needed to login in *FirstClass* to check for new messages in their personal mailbox or for contributions in the asynchronous discussion folders. There were several instances in the data, which indicated that students interacted face-to-face to get or provide help on technology. The example below is from a face-to-face class observation during which Marina is asking for help from Tony. Marina came in the classroom a few minutes before class started and tried to log in *FirstClass* but had difficulties.

The time is 1: 38 PM. (Two minutes before class begins.) Marina came in and sat in the second computer of the first row. Tony is sitting next to her, to her right, reading her e-mail. Marina put down her bag to the left of her chair while she says to Tony:

Marina: Hello Tony, how are you doing?

Tony: Hi Marina, good, I guess, how are you?

Marina: I'm all right.

Then Marina sits down in front of her computer, takes her mouse, and launches *FirstClass*. While trying to login she gets an error message and the computer makes a warning sound. She then turns to Tony and says:

Marina: Hey Tony, can you help me out here?

Tony: (turns towards her) Hey, what's up? (And slides her chair towards Marina)

Marina: It doesn't let me get in! What am I doing wrong?

In the above example Marina could not log in *FirstClass*. Face-to-face there were several instances that students helped each other or asked the teacher for help. The above example indicates how Marina asked the student next to her for help. Marina was a novice in the class and she engaged in several interactions with the intention of getting help on technology related issues. Other students who needed help on technology asked a peer or the teacher for help on using *FirstClass*, using an Internet browser, or using the projector for class presentations.

Discuss and Exchange Ideas

The following example demonstrates how students' and teacher's intentions for discussion and exchange of ideas were met through a sequence of interactions. In the excerpt, during a face-to-face class meeting, the teacher asked students who attended other online courses to talk about their experiences. Helen and Tara raised their hands. The abstract begins from the point where Helen finishes describing her experiences and says that she really liked online courses.

Dr. Jones: Did you like them?

Helen: I LOVED them. I learned a lot from them (emphasize "loved").

Dr. Jones: Are they different? Let me ask you this, (turns towards Tara) did it take you a lot to get used to?

Tara: Probably, the computer background, and I like writing, I like writing like that and I don't, you know, give me the materials and I will read it and do the work. I like it, you know.

Dr. Jones: That's an assumption.

Helen: Ahm (nods her head in agreement).

Dr. Jones: That's an assumption as educators that we have to make that students WILL (emphasize "will") read the online material.

Tara: Not necessarily because first of all they may not read it...

Dr. Jones: Number one, number two, they might not get anything if they do.

Tara: We trained students very well not to read the online stuff [in combined online and face-to-face classes]. Why should I read it when I'll listen to you talk about it, right?

Dr. Jones: That's right, which BRINGS UP (emphasize "brings up") the different characteristics and expectations. What do you guys expect from your students?

This is an example of how students and teacher engaged in discussion. The previous isolated interaction is just one of many examples during

which the teacher poses a question, and after a few student contributions, introduces a new topic. He assigns students to talk, evaluates their responses, and continues with the discussion. The first question listed above is a part of a broader interactional sequence during which students and teacher were discussing their experiences with online courses. The last question, which asks what the participants expect from their own students, is a gesture from the teacher that indicates the introduction of a new topic. The teacher's contributions to the interaction indicate multiple intentions. He moderates the discussion, motivates the students by making the information relevant to their experiences, gets them involved in the discussions, and facilitates their learning. Helen and Tara participate in the discussion to exchange ideas and also learn more about the class topic.

Get Good Grades

There are several examples from the data which indicate that students engaged in interaction with the intention of getting a good grade. For Susan, it was clear that one of her major intentions behind her interactions was to get a good grade. During the interview she stated: "I would do anything for a few extra points."

Marina, although she doesn't think of herself as being "very grade oriented," indicated that grades are associated with status in society. During the interview she stated that "...the student's grade is like status. It is socio-economically important. You get good grades, you get good education, you get more money." Grades are associated with high status and a student who wants to improve her status or gain access to a setting needs good grades. From the eight students enrolled in the course, five of them made it explicit that grades were important for them. Only Tara stated that grades were not important to her and that she was mainly interested in the class topic. She was interested in telecommunications and she was in this class "to better learn" how to incorporate telecommunications in her teaching.

Socialize

Interaction also took place with the intention to socialize. Participants engaged in interaction to socialize and talk about issues not relating to the course. In the online environment there were a few brief sequences of socializing. These sequences usually took place at the beginning and end of

chat sessions. The online environment was rarely used for socialization. As one of the participants indicated, “*First Class* was mainly used for work related issues.” From analyzing the teacher’s mailbox, as shown in Table 3, he only sent one message that was with a clear socialization intention. In addition, students sent him only two messages that were driven by socializing intentions and 39 messages that dealt with course issues. Careful examination of the data and interview transcripts indicated that participants’ need for socializing was met during face-to-face meetings and they did not need to socialize during the online component of the course. Furthermore, the teacher did not encourage socializing online, since he only posted one message of socializing nature. Therefore, students did not socialize online. During the online chats there were a few brief exchanges such as greetings and brief discussions of topics not relating to the course. These socializing interactions usually took place at the beginning and towards the end of chats.

Table 3
Teacher's Personal Mailbox

	Intention driving interaction	
	Socialize	Course related
Messages sent by the teacher	1	44
Messages sent by students	2	39

Face-to-face there were instances where participants engaged in informal exchanges, usually before class, during breaks, during pair work, or at the end of the class. The following example is from the last face-to-face class meeting during which participants were presenting their final projects. The week before this face-to-face class meeting, class had an online meeting moderated by Tara while she was in New York. In the following example, the teacher asked in class who wanted to present her project first and Tara volunteered. As Tara walks towards the instructor computer, the teacher asks her about New York.

Dr. Jones: By the way, who is going first?

Tara: I’ll go first (and she gets up from her sit, which was at the back of the room).

Dr. Jones: Tara is jumping right at us (smiling). Ok, here she is. (He then asks Tara who did her moderation last time from New York). Hey, how was New York?

Tara: IT WAS WONDERFUL (with emphasis).

Dr. Jones: You wish you were still there?

Tara: Yes I do. Couldn't be any cooler than it's here (referring to the change in weather here that is getting cold).

Dr. Jones: That's true.

The above brief friendly exchange between the teacher and Tara illustrates multiple intentions. One intention might have been the teacher's and Tara's need to socialize. In addition, the fact that the teacher initiated such an interaction might be a way of rewarding Tara for volunteering to present first. This instance is just one of several from the face-to-face fieldnotes that indicate how people engaged in informal interactions. Such informal interactions usually took place during breaks, at the beginning or end of class, and during transition time when there was a change in class activities.

Collaborate with Peers and Moderate Discussions

A few kinds of interactions have been identified so far which were purposely isolated from their broader context to illustrate their intentions. In this section a longer sequence of interactions that made up a typical interactional sequence is discussed. This will be on the process of preparing a discussion, moderating, and summarizing the results. Several kinds of interactions shown in Table 2 are taken and situated within a broader context, as they form a larger interactional sequence.

As discussed in the "setting" section, part of class requirements was that students collaborate and work in pairs to moderate one online and one face-to-face discussion. Molly and Stacey collaborated to moderate the first scheduled online discussion on audiographics. Audiographics is a communication system used in distance education that allows exchanging of information in audio and graphical format. One of the intentions behind the moderation of discussions was to collaborate with peers and meet class requirements. Molly posted two messages with the intention to prepare the online chat. One of the messages had information that related to the discussion and the other had two questions. The questions were the following: "How could an instructor embed any of the audio or audiographics programs into their instruction? and "What would be your prime consideration in choosing an audio/audiographics delivery system, and what audio/audiographics system would you choose?"

During that week's asynchronous discussion, Stacey sent a personal message to all students the same day the questions were posted, with the intention to remind her peers to participate. Stacey's message reads: "Please check out the postings Molly and I made to the discussion board and reply when you have a chance!"

In addition to the above intention by Stacey, there is another hidden intention that was revealed during the interview with her. Stacey applied for admission to the program offering the course and as of the time of the above discussion, she had not been admitted. She had just moved from the East Coast and it was her first semester in this university. It was very important for her to get admission to the program and she was trying hard in all the courses she was attending to give good impressions. During the interview Stacey stated: "Myself I am not a natural leader, but I go out of my comfort zone to prove myself I guess. I wasn't accepted into the program until just a couple of weeks ago so I was trying to make my mark, with this class and another class, so, to speak up more often."

She makes it clear that she would go out of her "comfort zone" to "make her mark" in the class and project a good image of herself by participating and interacting more often. A message that taken out of context would seem that is just a reminder, takes a different meaning knowing the history and intentions of participants.

Participants' intentions are not always clear. This was one example of how individuals' intentions, such as the intention of getting a better grade and gaining status and access to the program, were a factor that influenced interaction. By "speaking up more often" and showing interest in the course, Stacey increased her chances of getting a better grade, which could influence her admission to the program. In addition, Stacey's intention is illustrated by the fact that she demonstrated a high level of interaction with her peers and teacher. For example, she has the second highest number of messages sent to the teacher. She sent a total of 10 messages to the teacher (Table 4). Therefore, several of her interactions, which on the surface might seem as taking place with the intention to socialize, or discuss, could also be driven by her intention of getting admission to the program.

Tara, on the other hand, had a genuine interest in learning more about the subject matter of the class. Therefore, her interactions were driven by the intention to learn and that is why she exchanged 18 messages with the teacher, which is the highest number of messages exchanged between the teacher and a student. During the interview, when asked to explain why she had the highest number of message exchanges with the teacher, she stated: "I am really interested in distance learning and I communicated often with

Dr. Jones who provided me with lots of insights and resources relating to my homework and final paper.”

Table 4
Messages the Teacher Sent and Received from Individual Students

	Messages sent by student	Messages received from the teacher	Total exchanges with individual students
Tara	11	7	18
Stacey	10	5	15
Susan	7	2	9
Marina	5	4	9
Helen	3	3	6
Molly	1	3	4
Tony	2	2	4
Tammy	2	1	3
Total	41	27	68

Helen responded to Molly’s questions on Sunday before Monday’s discussion. The end of her message reads:

...People may want the convenience of distance education but they also have to pay for the delivery of their instruction. Until I have the opportunity to see these technologies first hand I can’t recommend either of them above and beyond video or basic online instruction. Actually, I think they are more suited to the business world than the education world.

And, with that totally opinionated and closed-minded harangue behind me... :) I’m off to bed. Got to go to work in an hour and a half.
Ciao!

This is a simple sequence that shows the first stages of preparing a discussion. Molly and Stacey as the moderators post the questions with the intention to get their peers preparing for the online chat. Helen responds to the questions, participates in the discussion, and expresses her views about the topic of audiographics. In addition to the intentions of participating in the discussion and submitting homework, this message also illustrates Helen’s intention of socializing with peers. The use of the “:)” emoticon, and the closing sentence of the message, indicate Helen’s intentions to socialize and communicate with her peers. She stated in the interview that, “the joking around” helps her feel socially present during online interaction. There were numerous examples in the data that illustrated Helen’s intention to socialize with her peers.

On Monday during the online chat, the moderators posted questions to the whole class. Then, they invited pairs of students in private chats and assigned them specific tasks. Participants were discussing their assignment and at the same time playing audio and video files downloaded from the Internet. After the pairs worked for approximately 20 minutes, they were invited back to the main chat where they reported their findings.

This pattern of interaction was typical in all online chats. The moderators post a request, ask the groups to present their work, and then the groups post their findings. In such interactional sequences there are multiple intentions from students. The moderators are trying to get the discussion moving and have their peers report their findings. Students' participation in the discussions had another intention. Four students stated during the interviews that one of the reasons they were participating in the discussions moderated by their peers, was to "help the moderators" carry on the discussion. During the interviews students stated that their classmates were very helpful and that they were helping the moderators and collaborating during the discussions. For example, Molly in her interview stated: "...People are nice you know. They are helping the moderators. I realized that if I don't talk I am not helping the moderators do their job, you know? So I changed my mind and I think I spoke up a few times... (laughs)."

Moderating and participating in the discussions was required in this course. For the moderators to be successful in their task, their peers needed to participate and collaborate during the face-to-face and online meetings. Hence, several of the interactions during the discussions also had the intention of helping the moderators conduct the discussion in an effective manner.

At the end of the online meeting on audiographics, which lasted approximately 58 minutes, the teacher asked the moderators to stay a few minutes longer to talk about the discussion. The excerpt below begins from the point where the teacher praises the moderators for doing a good job.

Dr. Jones: Stacey and Molly, I thought you guys did a great job.

Stacey: thanks

Helen: Yes you did

Molly: Thanks

Susan: I agree!@

Tony: i really liked your second question....right on target great job you guys!

Dr. Jones: What I need from you now is to post a moderators report in the folder. In it discuss your feelings on the successes and challenges of moderating.

Dr. Jones: Also discuss things you would recommend for future moderators.

Molly: One report I guess

Helen: PLease

Dr. Jones: Overall an outstanding job!

Dr. Jones: Yeah, one report from both of you.

Stacey: Thank you, we'll post that asap [as soon as possible]

This is an example of the teacher and peers giving feedback to the moderators. Then, Dr. Jones asks from Stacey and Molly to post a moderators' report in which to detail the successes and failures of the discussion. This interactional sequence serves several purposes. One of the teacher's intentions was to praise the moderators, evaluate them, and provide them with positive feedback. Another was to ask them to reflect on their experiences so that their peers can learn from today's chat, avoid similar pitfalls, and use some of their techniques that worked well in future discussions. In response to the interaction, the moderators posted a report reflecting on the outcomes of the discussion.

The interactional sequence can be summarized into the following steps: (a) the moderators post questions in the asynchronous discussions, (b) students respond to those questions and prepare for the discussion, (c) moderators assign groups with specific tasks during the class meeting, (d) groups report their findings, (e) class as a whole discusses the weekly topic, (f) teacher and peers provide feedback to the moderators, and (g) moderators post their reflections online. This pattern was typical in all eight face-to-face and online discussions moderated by students and it illustrates that the flow of interaction is created when participants constantly fit their actions into their peers' actions. All actions described were linked and they led to further interactions. For each interaction there were multiple intentions for different participants. The whole sequence discussed on moderating a discussion illustrates how smaller interactional sequences reside within broad-

er interactional contexts. The context for each interaction is partly provided by the broader interactional sequence and also constructed during interaction.

DISCUSSION

Thorough and detail data analysis indicated that interaction in this course was purposeful. Interaction took place to meet a need or accomplish a task. Meanings of interaction were organized in Table 2 and classified according to intentions driving interaction. There was no attempt to include all possible interactions and provide an inclusive and exhaustive classification. The focus during data analysis was to identify and organize interactions which were typical in this course and to illustrate how interaction unfolds in naturally occurring classroom events. The findings of this study do not attempt to provide prescriptions for how online courses should be structured, nor do they attempt to explain everything that might have influenced interaction in the course. Rather, they are suggestions that are based on detailed observation and analysis of this particular course. Researchers and practitioners should be the judges of whether the findings relate and are applicable to their cases.

The complexity of life in the everyday classroom was illustrated in the discussion of interactions that had multiple intentions and which were not easily identified, unless connections were made from other pieces of data. The kinds of interactions identified were not based on just one source of data but on multiple sources. No category was generated from a single source. Cross-checkings with multiple sources were done to examine the typicality or atypicality of interactions and intentions. In addition, follow-up interviews with the participants were conducted to get their feedback on the findings and intentions identified in the study. For example, Susan's intention to get good grades is not only illustrated in the interview, but also by the frequency of her face-to-face and online interactions in the course and the data collected in the follow-up interviews.

The great overlap that exists among intentions driving interaction is an indication of the complexity of the nature and meaning of interaction. The intention of the teacher to facilitate student learning is a very broad intention that is also manifested in interactions that were driven by other intentions. For example, when the teacher provides feedback, or models expert behavior, he/she also has the intention to facilitate student learning. When the teacher makes the information relevant to the students' experiences, he/she motivates students and at the same time facilitates their learning. When

a student asks for help on how to use the conferencing system, he/she also demonstrates interest in the course, which might also be done with the intention to learn or get a better grade. There are no clear-cut boundaries that separate different kinds of interactions according to intention. The meanings of interaction identified in this study are just general themes that emerged from the data.

The study followed a different approach to examine interaction than those approaches traditionally employed and recommended by distance educators (Hillman et al., 1994; Moore, 1989). Thus far, distance educators have focused on the four kinds of interaction of (a) teacher-learner, (b) learner-learner, (c) learner-content, and (d) learner-technology. The typical distinction of interaction, following as the only criterion the interacting parties, limits the scope and breadth of the study of distance education. In some instances it is appropriate to identify the interacting parties that are engaged in interaction. However, interaction is a perplexing construct and requires close and detail examination of its context. This study framed interaction following symbolic interactionist ideas. Such an approach reconceptualizes interaction and emphasizes the importance of socially constructed meanings from the actors' perspectives. No two interactions are ever the same. Human action is constantly constructed anew, even in the case of the most customary events (Blumer, 1969; Erickson, 1986). To understand interaction, we need to know what preceded it and what followed. To understand a message posted in a discussion, we need to know what preceded that message and what followed. What was the question by the moderators? What were other students' responses? What is the history behind past discussions? The discussion of the interactional sequence of moderating a discussion, from the posting of the questions to the posting of the moderators' report at the end, illustrates how multiple interactions tie under a broader sequence with multiple intentions behind each interaction.

al: This idea of intentions driving interaction relates to Mehan's (1980) work on the idea of personal agendas that students and teacher carry and follow in the classroom. Students and teacher constitute environments for each other and they concert their activities according to their intentions. The context of classroom life is always constructed in an ongoing process of negotiation and interaction. Social life in the online course under study was informed by the agendas of all the participants. Some meanings and intentions driving interaction were more common than others. For example, moderating discussions and submitting homework was common among all students. Some participants' interactions were mainly driven by specific kinds of intentions. For example, one of Molly's intentions was to help her

peers moderate their assigned discussion. Susan's major intention was to get a good grade. Tara was a student interested in participating in the asynchronous discussions with the major intention of learning how to incorporate telecommunications in her teaching. However, participants always take into account others' actions, and in light of those actions, they revise, abandon, replace, or follow their initial intention. After the first few weeks of the course, and when Tara saw that her peers were not participating in the asynchronous discussions, her interest declined. This is a fundamental idea of symbolic interactionism. That is, how others act towards things, influences the meanings of the thing for the individual. How others acted with regards to interaction influenced Tara's interactions in the course.

What is important to note is that interaction is not a result of factors. People have meanings and construct interaction by acting in the world based on those meanings. Meanings are socially constructed and they are processed again through interpretation. Participants did not act because structure had certain characteristics, or because of internal psychological factors. Human action is informed by the meanings of participants. Stacey interprets the situation in the course as an opportunity to "make her mark" in the class so that she can influence the situation and gain admission to the program. She sees herself as a member of a group that does not have the full privilege of being regularly admitted to the graduate program of the department offering the course. To gain access to the setting and become a member of the group, she needs to spend extra effort and participate more often. The meanings of situations and the meanings of interaction are socially constructed and reinterpreted by each individual. Interpretation of situations was crucial in defining the participants' intentions and meanings in the course.

The interactions identified in the course are commonly seen as routine interactions associated with online classrooms. The data from this study, however, clearly illustrate that underneath the surface of what, to one appears as ordinary day-to-day interaction, there are multiple meanings that are constructed and assigned when participants engage in joint action. Those meanings are what drive interaction. Educators need to be aware of the multiple intentions and students' agendas as they structure online courses and carry out instruction. Not all structured activities will be interpreted the same way by all students and have the same impact on their learning. The typology generated from this study can assist in the design of courses in ways that they can accommodate multiple intentions under varying situations and contexts. In addition, this typology can also be used as a heuristic tool for coding massive quantities of qualitative data such as observation

transcripts, online messages, and interview transcripts. In-depth interpretive studies usually result in hundreds of pages of transcripts. This study resulted in more than a thousand pages of data. The intentions identified in this study could be used as codes in settings where researchers judge is appropriate and contexts are similar.

Another important implication of this research stems from the fact that several of the interactions that were identified were part of class requirements and that structure is crucial for promoting interaction. For example, participation in discussions, moderations of discussions, collaboration with peers, and submission of homework were all required in this course and were part of the grade. Therefore, a lot of the interactions with these intentions might have also been driven by the intention to get better grades. This illustrates how important the structure of the course is in shaping interaction. Requiring students to engage in discussions and collaborate on projects can increase interaction in the course. Therefore, distance educators can structure a course and schedule activities that promote dialogue and interaction. This finding contradicts the hypothesis that increasing structure decreases dialogue and increases transactional distance (Moore 1991; Saba & Shearer, 1994).

The original definition of transactional distance was based on the idea that dialogue and transactional distance can only be influenced by the teacher-learner interaction (Moore, 1991). Recent developments in technology and new media such as computer conferencing allow for increased learner-learner interaction, which can influence transactional distance in the online classroom. Cookson and Chang (1995) also criticized Saba and Shearer's (1994) analysis of interaction because they focused more on the teacher and they excluded learner-learner and group interactions. In addition, Saba and Shearer ignored the reciprocal nature of interaction and the importance of context. Their study was based on a causal interpretation of the construct of transactional distance. They constructed a model based on mathematical formulas that attempted to predict the amount of transactional distance in an educational setting depending on variables such as learner control, instructor control, dialogue, and structure. Such a model assumes that human beings do not have agency and they are simply respondents to stimuli. Behavior and interaction are seen as results of interacting variables.

Findings from this study illustrate that it is impossible to control all possible variables that might influence interaction and illustrated the unpredictability of human behavior. A course is always offered within a context that is constantly recreated through interaction. There is a reciprocal relationship between interaction and context. The context of interaction is so

complex and dynamic that is impossible to control. In addition, Saba and Shearer's (1994) approach say very little about the nature of interaction and the day-to-day events that make up social life in an online teacher education course. This study demonstrated that distance educators can structure for dialogue and interaction and that learner-learner interaction is also an important component of dialogue. Understanding the factors that influence transactional distance and the feeling of connectness with others in a distance education course is very important. Such an understanding will allow designing distance education programs in ways to promote connectness, social presence, and interaction, thus improving student learning.

CONCLUSION

Teachers are required to develop online courses and online material for delivering instruction. Online education is a recent development that requires more detailed studies to document the day-to-day events that unfold in the online classroom and that lead to knowledge construction. This study was a step towards that end. The majority of research in distance education follows the research tradition of face-to-face classroom research, thus ignoring the meanings of participants engaged in interaction. The findings of the study indicated that interaction was driven by the participants' intentions. What might seem as a routine interaction can have multiple layers of meaning. Future studies could examine how intentions driving interaction influence knowledge construction. What are the power relationships like in an online course and how do they relate to the nature of interaction? In addition, further research could examine other factors influencing transactional distance and whether structuring for interaction decreases the psychological distance between teacher and learners.

Closely examining face-to-face and online interaction in this particular course, following a symbolic interactionist conceptual framework, provided a better understanding of learning and interaction in online graduate teacher education courses. As Erickson (1986) would say, in this study I attempted to "make the familiar strange and interesting again." By emphasizing the local meanings in action of the learners and teacher, the findings of the study shed new light on the importance of face-to-face and online interaction and can guide future research and practice in graduate online teacher education.

References

- Blumer, H. (1969). *Symbolic interactionism: Perspective and method*. Englewood Cliffs, NJ: Prentice Hall.
- Cookson, P.S., & Chang, Y. (1995). The multidimensional audioconferencing classification system (MACS). *The American Journal of Distance Education, 9*(3), 18-36.
- Dewey, J. (1938). *Experience and education*. New York: Macmillan.
- Erickson, F. (1986). Qualitative methods in research on teaching. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (pp. 119-161). New York: Macmillan.
- Gunawardena, C.N. (1995). Social presence theory and implications for interaction and collaborative learning in computer conferences. *International Journal of Educational Telecommunications, 1*(2/3), 147-166.
- Hillman, D.C., Willis, D.J., & Gunawardena, C.N. (1994). Learner interface interaction in distance education. An extension of contemporary models and strategies for practitioners. *The American Journal of Distance Education, 8*(2), 30-42.
- McIsaac, M.S., & Gunawardena, C.N. (1996). Distance education. In D.H. Jonassen (Ed.), *Handbook of research for educational communications and technology* (pp. 403-437). New York: Simon & Shuster Macmillan.
- Mehan, H. (1979). *Learning lessons*. Cambridge, MA: Harvard University Press.
- Mehan, H. (1980). The competent student. *Anthropology and Education Quarterly, 9*(3), 131-152.
- Moore, M.G. (1989). Three types of interaction. *The American Journal of Distance Education, 3*(2), 1-6.
- Moore, M.G. (1991). Distance education theory. *The American Journal of Distance Education, 5*(3), 1-6.
- National Center for Education Statistics. (2001). *Internet Access in U.S. public schools and classrooms: 1994-2000*. Washington, DC: U.S. Department of Education.
- Ross, A.R. (1996). The Influence of computer communication skills on participation in a computer conferencing course. *Journal of Educational Computing Research, 15*(1), 37-52.
- Saba, F., & Shearer, R.L. (1994). Verifying key theoretical concepts in a dynamic model of distance education. *The American Journal of Distance Education, 8*(1), 36-57.
- Short, J., Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*. London: John Wiley & Sons.
- Tsui, A.B.M., & Ki, W.W. (1996). An analysis of conference interactions on Telenex: A computer network for ESL teachers. *Educational Technology Research and Development, 44*(4), 23-44.
- Vrasidas, C. (2000). Constructivism versus objectivism: Implications for interaction, course design, and evaluation in distance education. *International Journal of Educational Telecommunications, 6*(4), 339-362.

Vygotsky, L.S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Wagner, E.D. (1994). In support of a functional definition of interaction. *The American Journal of Distance Education*, 8(2), 6-29.

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