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Nursing Simulation: A Classroom Discourse Inquiry

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“Who has put wisdom in the innermost being or given understanding to the mind?”
Job 38:36. If within these pages you find anything worthy of praise, Soli Deo Gloria.
ABSTRACT OF THE THESIS

Nursing Simulation: A Classroom Discourse Inquiry
by
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Simulation, the use of computerized, life-sized mannequins as the patient in a clinical scenario for nursing students, is fast becoming implemented as a part of nursing school curricula across the globe. As an educational modality, simulation affords the students learning opportunities not previously available in traditional classrooms or hospital settings. This study describes and analyzes a nursing simulation session using methods of classroom discourse analysis in order to discern the nature of the interactions, and learning transactions that occur. A previously recorded nursing simulation scenario was selected and transcribed. Analysis of the discourse revealed five distinct types of interaction: teacher-nurse, teacher-student, student-student, nurse-patient, and healthcare provider-nurse. Each type of interaction was first examined as an isolated conversation. Then it was further analyzed as it actually appeared with other simultaneous, interactional sequences. The data revealed that student-student interaction was the most common type of discourse. It was during this interaction that the students collaborated with each other using peer guided participation to make clinical care decisions, and private speech to gain greater individual understanding of the nursing situation. In addition, the data revealed that guided participation was the most common method of instruction. This study represents an initial description and analysis of the discourse found in nursing simulation.
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Finally, I would like to thank my friend Linda Olfert who patiently listened to me read aloud each chapter and gave me helpful ideas about how to communicate the thoughts more effectively for the nursing audience. To my family and friends who have endured the process along with me, thank you ever so much for your support and encouragement.
CHAPTER 1
INTRODUCTION

For decades, pilots have been taught to fly airplanes using flight simulators. This equipment gives the student pilot a simulated experience in flying without leaving the ground and encountering the risks of altitude. Around the turn of the 21st century, patient simulators began being used in healthcare. These simulators are life-sized mannequins that are connected to a computer by which the mannequin’s breathing, pulse, and blood pressure are controlled. Prior to this technological development, healthcare students used each other as the patient to learn to take a blood pressure, and listen to heart and lung sounds. The advent of this technological mannequin patient provided a greater opportunity for a wider range of simulated clinical experiences. Whereas most students demonstrate only normal heart sounds, breath sounds, and blood pressures, the mannequin can demonstrate the full range of abnormalities. In 2006, San Diego State University’s School of Nursing began using human patient simulators developed by Medical Education Technologies, Incorporated (METI ®) to engage students and faculty in staged clinical scenarios. The implementation of this new learning modality raises many questions not only for nursing, but also as an instructional technique for education. What are the influencing factors brought to bear on the teacher-student interaction in simulation? Do these factors shape student learning in particular ways? What learning do students derive during simulation? How does this differ from learning they achieve in traditional settings? Are there implications that can be drawn from the use of simulation as an instructional tool with respect to student learning?

THE GOAL OF THIS STUDY

The purpose of this study is to investigate these questions in light of what is known about teacher-student interaction, nursing education, and simulation. Each of these fields of literature provides unique, important knowledge related to answering these questions. The classroom discourse literature has particular insight to offer as it holds extensive understanding of the nature of student-teacher interaction, and can provide clues to the
elements of student learning taking place. However, methods of classroom discourse have not yet been applied to examine a nursing simulation. Thus, in applying a classroom discourse approach to the nursing simulation context, this study will provide increased knowledge regarding the nature of student learning in simulation, filling the gap in both the nursing and classroom discourse literatures. The purpose of this inquiry is to describe the nature of the interaction created by the nursing simulation scenario, to discern the nature of the learning transactions that occur, and to identify potential pedagogical implications. As preliminary to the study, three relevant areas of prior research will be reviewed. Nursing simulation literature will be reviewed first, followed by classroom discourse literature, and finally nursing education literature.

**Nursing Simulation Literature**

As simulation began being implemented into nursing, articles began to be published describing the simulated clinical experience. Rauen (2004), for example, described reports from instructors and students regarding the simulation experience as being more realistic than traditional methods of instruction as well as providing opportunities that increase “acquisition and retention of knowledge, and sharpen critical-thinking and psychomotor skills” (p. 50) in an environment that poses no risk to a real patient. Additionally, Alinier Hunt, Gordon, and Harwood (2006) using a group of 99 nursing students randomly divided into two groups, showed that a simulated clinical experience improved the practical nursing skills compared to the group that did not have a simulated clinical experience. Both groups of students were tested before, and five weeks after, the randomly selected group of students received the simulated clinical experience. The results revealed a “difference of 7.0 percentage points between the means, which was highly statistically significant” (p. 366). Further, Gates, Parr, Hughen, and Hatton (2010) using 198 second semester nursing students found that “nursing students who prepare for the nursing simulation experience score significantly higher on a post-quiz of related nursing knowledge,” suggesting that the learning in simulation is an event that the students must prepare for in advance, in order to obtain optimal cognitive benefits.

Benner, first published *Novice to Expert* in 1984, republished in 2001, defines “experience” as the result of “clinical knowledge that is a hybrid between naïve practical
knowledge and unrefined theoretical knowledge” (Benner, 2001, p. 8) coming in contact with actual practice situations that “stand out because they changed the nurse’s perception” (p. 8). She further states that simulations can facilitate the development of experience “because they require action and decisions from the learner” (Benner, 2001, p. 9), as well as opportunities to gain experience under guidance. Further, many state boards of nursing have accepted simulated clinical hours in substitution for actual clinical time in a hospital setting. Hence, simulated clinical experiences are viewed as highly valuable, yet the nature of the actual learning that takes place in the simulated experience has not been thoroughly described. Simulation occurs in a very non-traditional classroom setting with unique teacher-student interaction. The field of classroom discourse thus can provide key insight into that interaction and the potential factors influencing the interaction.

**CLASSROOM DISCOURSE LITERATURE**

The field of classroom discourse literature is quite large. As such, there are particular subcategories within this literature that have helpful insight to bring to this analysis. Five subcategories will be examined for influential research related to interaction.

**The Influence of the Traditional Classroom on Interaction**

The most common way teachers have interacted with their students is in traditional classroom settings, one teacher at the front of the room and the students sitting in rows of desks. This participant structure significantly influences the nature of the discourse between the students and the teacher. As the students and teacher take their turns in traditional classroom dialogue, unspoken rules apply. The routine organization of classroom discourse was first described by Mehan (1979) as constituted of “initiation-reply-evaluation” (p. 64), or IRE sequences. He described various types of elicitation that were used during the “topically related sets (TRS)” (p. 65), or longer topically connected stretches of IRE sequences. However, regardless of the nature of elicitation, or how extended the TRS became, the three-part structure held consistent throughout the lessons he examined. Now 30 years later, Mehan’s IRE is still consistently observed in countless traditional classrooms. In fact students and teachers spend so much of their lives in the traditional participant structure that it becomes their dominant interaction mode. They automatically demonstrate a preference to
interact with each other using this IRE pattern. The IRE pattern must first be reviewed to be able to discern just how significantly the interaction of the nursing simulation scenario departs from this preferred, dominant mode of teacher-student interaction. An example of an I-R-E sequence taken from Cazden’s data (1987, p. 34) is shown below.

<table>
<thead>
<tr>
<th>Utterance</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. T: Where was he born?</td>
<td>(Initiation)</td>
</tr>
<tr>
<td>b. S: Baltimore, Maryland</td>
<td>(Reply)</td>
</tr>
<tr>
<td>c. T: Really, oh good!</td>
<td>(Evaluation)</td>
</tr>
</tbody>
</table>

The IRE sequence typically elicits a brief answer from the student as seen above. It rarely results in actual discussion. Because the IRE pattern of interaction is dominant, during the past 30 years, others have asked if there are particular circumstances in which the IRE is absent, overshadowed, or suppressed and if so, when? Since the IRE begins with the teacher asking a question, the influence of questions on the IRE sequence will be considered first.

**The Influence of Questions on Interaction**

Cazden (1987) observed, for example, that teacher questions were one of the main discussion stoppers, suggesting that to facilitate discussion teachers use more “declarative statements, reflective statements, invitations to elaborate, and (hardest of all) silence” (Cazden, 1987, p. 60). For instance, Cazden (1987) gives the following example of a teacher’s declarative statement. “T: I don’t think it is fair that Tico has to give up his golden wings” (p. 55). This statement clearly generated a student reply regarding fairness and revealed students’ thoughts, rather than a one or two word answer typically given in response to a teacher question. A reflective statement on the other hand, reflects back to the student some of what the student has just said calling for additional student thought. An example of a reflective statement would be: “T: So you feel he was justified in what he was doing, as far as he was concerned --- he could justify it to himself” (p. 56). Again, the student reply would likely reveal student thinking. When the teacher uses an invitation to elaborate, the students are being asked for more information. An example Cazden (1987) gives is: “T: Sunday (from Nigeria) what would you say if you took a white middle-class teacher that was going to come and work in an area like this … and says, ‘why should I bring in black materials, because all it’s going to do is divide kids?’” (p. 59). This invitation to elaborate would also likely result in an answer that would give insight into what the student thinks. All three of these types of
teacher statements provide opportunities for the students to speak about what they are thinking. Further, Cazden (1987) observed that “only when the talk shifted away from transmitting to the student did the structure of talk depart from the IRE sequence” (p. 66). So, when the teacher stops lecturing or questioning and gives an opening for student comments through declarative or reflective statement, invitation to elaborate, or through silence, student thoughts may surface that would otherwise have remained silent.

Although the literature has consistently supported Cazden’s position regarding teacher questions, several recent studies have shown teacher questions can in fact serve as facilitators of student participation. For example, Lee (2006) found greater student participation following display questions. Display questions are generally asked by the teacher to see if the listener knows the answer. An example of a display question is: ‘T: What is the capital of California?’ The teacher asking this question is hoping at least one student will say, ‘R: Sacramento.’ In Lee’s view, display questions “point to an array of interactional work” (p. 708) through which students and teachers join together to interpret, to produce a common understanding of the lesson. He also noted the E turn of the IRE sequence was seen slightly less frequently following display questions.

Additionally, Vaish (2008) also noted situations where questions resulted in greater student participation. She observed this phenomenon particularly following open-ended questions. The following example of an open-ended question comes from her data: “T: And what’s happening in the stadium” (p. 372)? The question draws the students into the event as they answer describing what they see. Open-ended questions appear to generate student description in a way not completely unlike an “invitation to elaborate.” She also noted when the teacher “instead of choosing an evaluative move” (p. 373) (i.e. an E turn) chose another initiation; rather like an “invitation to elaborate” the students subsequently took a larger responsibility for the resulting discourse. Since display questions and open-ended questions have both demonstrated an ability to encourage greater student participation, it appears that not all teacher questions inhibit student participation.

Another type of question that has been found to influence student participation is the reverse polarity question (RPQ). Koshik (2002) found that in the context of writing conferences, RPQs were used for “eliciting from the student rather than informing the student directly” (p. 1870). In the example below (p. 1862), she notes that the teacher’s questions in
lines (a) and (c) are used to elicit from the student an acknowledgement that he had omitted a necessary point in his essay (i.e., the excellent answer he had just given verbally).

<table>
<thead>
<tr>
<th>Utterance</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. T: Is that here yet?</td>
<td>RPQ</td>
</tr>
<tr>
<td>b. S: Excuse me?</td>
<td></td>
</tr>
<tr>
<td>c. T: Is that-what you just said?</td>
<td>RPQ</td>
</tr>
<tr>
<td>d. S: uh [huh,</td>
<td></td>
</tr>
<tr>
<td>e. T: is an excellent answer.</td>
<td></td>
</tr>
<tr>
<td>f. S: uh huh.</td>
<td>RPQ</td>
</tr>
<tr>
<td>( here yet)?</td>
<td></td>
</tr>
<tr>
<td>g. S: no: I don’t think [so</td>
<td></td>
</tr>
<tr>
<td>h. T: [mm. it should be</td>
<td></td>
</tr>
</tbody>
</table>

RPQs tend to cause the student to align their answer with what the RPQ inherently suggests rather than voicing disagreement. “When this happens, the teacher can choose to either suppress the student’s voice, or to make available a sequential position for the student’s voice to be heard” (p. 1875). If the sequential position is not made available, the student thoughts will remain unvoiced. Clearly, the teacher questions exert a unique influence on the teacher-student interaction. The two poles of the spectrum appear to be represented here with open-ended questions creating space for student thoughts to surface, and on the other end RPQs influencing the student to align their answer with the teacher’s thoughts.

Thus, there appears to be certain question types that don’t limit class discussion, and thus student participation, quite so consistently as originally thought. The IRE structure of teacher-student interaction is seen to be influenced in particular ways by teacher’s questions, statements, goals, thoughts, and silence.

The teacher has a powerful influence on the teacher-student interaction through their choice of questions and statements, but there would be no interaction if it were not for the students joining the teacher in discourse. Teachers and students are all influenced by the IRE pattern. It is their dominant, preferred manner of interaction. However, Gutierrez, Rymes, and Larson (1995) described a situation where student questions resulted in a departure from the traditional IRE sequence manifesting greater student participation. They described an unscripted space that they call the “third space,” which combines the teacher’s voice and whispered student voices into one dialogue. As this occurs, the whispered student voices that
had previously been on a divergent path from the audible classroom dialogue became suddenly silent. Their whispers were silenced by a question from another student and they were drawn back into the main classroom dialogue. The authors observed that it was within the “third space” that “commingling of various social and cultural perspectives, the existence of multiple scripts, and the potential to contest a transcendent script” (p. 468) occurred. A key factor in the third space dialogue they describe was that it was initiated by a student question. So, not only do teacher questions influence the interaction, student questions do as well. In fact the student question silenced the whispering that was going on between students who were clearly not paying attention to the teacher’s lesson. Perhaps because the student question is such a departure from the routine IRE sequence, it drew the attention of all the other students. The IRE structure of teacher-student interaction is seen to be influenced by the teachers’ questions, statements, goals, thoughts, silence as well as, the students’ questions.

**The Influence of Participant Structure**

Another dimension of instructional discourse, participant structure, has been investigated across various settings to discern if the way the interaction is structured influences the teacher-student interaction. First, Goldenberg and Patthey-Chavez (1995) sought to discern if there was a method of instruction that would more consistently result in greater student participation. They utilized a method called an instructional conversation (IC), lesson where student-teacher interactions are goal directed. The teacher and students construct new knowledge together as they jointly work on a goal or problem. They found that the teacher spoke less and the students spoke more as they negotiated meaning together. In the ICs they observed, the tendency for the traditional IRE structure to dominate occurred less frequently and teachers gave fewer evaluative comments. So, the missing E turn seemed to foster greater student contributions. The teachers however, often found it difficult to “get the hang of” (p. 71) the IC instructional technique; making it a difficult instructional strategy to implement, despite the benefits it yielded in classroom discussion, and student participation.

Additionally, Nassaji and Wells (2000) also explored “ways of enabling students to take a more active role in negotiating curricular topics” (Nassaji & Wells, 2000, p. 382).
They found that “even when teachers are attempting to create a more dialogic style of interaction in their classrooms, triadic (IRE) dialogue continues to be the dominant discourse genre...and where student responses to questions are frequently given an evaluative follow-up,” (p. 401) student participation tended to be suppressed revealing the IRE sequence is ingrained within both teachers’ and students’ educational schemata. Yet, they also observed that when the E turn is missing, student voices continued. The missing E turn has now been identified by Goldenberg and Patthey-Chavez (1995), Nassaji and Wells (2000), Lee (2006), and Vaish (2008) as a factor influencing greater student participation. Below is an example of the missing E turn from Vaish (2008, p. 374). Notice how the teacher uses an initiation, rather than an evaluative comment in line (c).

<table>
<thead>
<tr>
<th>Utterance</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. T: What did you, what were you told about this Sarimbun Landing Site?</td>
<td>(Initiation)</td>
</tr>
<tr>
<td>b. S1: You cannot go there, if you go there, the police can shot and you die.</td>
<td>(Reply)</td>
</tr>
<tr>
<td>c. T: Is that what Mr. Jeremiah told you? [He seems] to have told the others some other things.</td>
<td>(Initiation)</td>
</tr>
<tr>
<td>d. S2: [He says.]</td>
<td>(Reply)</td>
</tr>
<tr>
<td>e. S1: [Japanese] first.</td>
<td></td>
</tr>
<tr>
<td>f. S2: [What?] The Japanese first landed</td>
<td></td>
</tr>
<tr>
<td>g. S1: What, what is that thing [floating around?]</td>
<td>(Initiation)</td>
</tr>
<tr>
<td>h. S2: [And we go] and throw some stone in the water</td>
<td></td>
</tr>
<tr>
<td>i. T: That is a fish farm. The thing that’s floating in the water that looks like a house, okay, it’s a fish farm.</td>
<td></td>
</tr>
</tbody>
</table>

Student participation seems increased if the E turn is absent. Are there other circumstances, particular participant structures that also enhance student participation?

Poole and Patthey-Chavez (1994) described an alternative classroom structure that influenced the student-teacher interaction. Poole and Patthey-Chavez for example, sought to “identify participant structures which serve to evoke or suppress assisted performance” (p. 12). They suggest the role of the teacher should be that of assisting the students’ performance; “helping students meet and master instructional challenges” (p. 4). They found that many factors actually influenced student-teacher interaction. Yet, they observed in some of the activity settings they studied that the IRE was not the dominant mode of interaction.
Rather, “assisted performance and learning in the Zone of Proximal Development (ZPD) becomes novice rather than expert-led” (p. 30). The ZPD was first described by Vygotsky (1978) as “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (p. 86). The ZPD is the developmental level that is affected by the interaction with others who have greater knowledge.

Ochs, Schieffelin, and Platt’s (1979) findings provide additional insight. They observed that children learned how to articulate propositions using “overt syntactic means” (p. 251) “by participating in a sequence in which they contribute a component of the proposition” (p. 268). The child’s ZPD related to verbalizing propositions is being enlarged by participation with a more knowledgeable adult. As the child participates in the interaction with the adult, the child’s knowledge and skill is increased. This is evidence of powerful learning taking place through the teacher-student interaction.

**The Influence of Guided Participation**

To better describe and understand the nature of the learning transaction taking place as the child’s ZPD is enlarged under adult guidance, Rogoff (1990) defined the educational experience of involving the student with an expert or more knowledgeable peers as “guided participation” suggesting that “both guidance and participation in culturally valued activities are essential to children’s apprenticeship in thinking” (p. 8). She further describes guided participation as “structuring of children’s activities and offering of well-placed pointers” (p. 111) as well as adjusting their responsibilities based on their initiative and skill. She goes on to state that although her work “focuses on infancy and childhood, development is assumed to proceed throughout the lifespan” (p. 11). Although there are differences between adult and child learning, it does seem reasonable to expect that adult learning regarding guided participation would bear significant resemblance to that of the child learning seen in Rogoff’s study.

Radziszewska and Rogoff (1991) provide a description of several situations of guided participation in a classroom setting. The more knowledgeable person guided the less knowledgeable regarding a specific task that involved problem solving and decision-making.
They divided 60 children into three groups: group one worked with an untrained peer, group two worked with a trained peer, and group three worked with an adult. All three groups participated in a problem-solving situation that was designed to be “a collaborative process involving joint structuring of activities with participation by both partners in a thinking process” (p. 381). Both groups 2 and 3 displayed equal sophistication in planning. However, only group 3 children achieved statistically significant better decision-making. “Even though collaboration among novices was least beneficial in this study, it still may lead to greater progress than working on a task alone” (p. 388). When the student-teacher interaction becomes “assisted performance,” “guided participation,” or an “IC,” or when an absent E turn occurs, student participation appears to increase, potentially affecting the student’s ZPD for the particular knowledge related to the content. Clearly, all of these participant structures influence the teacher-student interaction in a strongly positive way that enhances student learning.

**The Influence of Participation**

It has been seen that teacher-student interaction is influenced by the historic IRE pattern, the questions of the teachers and students, and the participant structure. However, the influence of participation must also be discussed, as interaction, by definition, involves two parties. There would be no interaction if the students did not enter into the discourse with the teacher. Participation is in fact an influential factor. Recall again how the students in the study by Gutierrez et al. (1995) had abandoned the interaction with the teacher and were holding a whispered conversation that was completely off the topic of the lesson. On the opposite end of the spectrum, Sterponi (2007) observed students seeking an opportunity to interact with each other when the teacher had given instructions to work independently. She observed that school children sought out opportunities for interactional reading when the teacher had instructed them to read silently. They disappeared out of her sight under desks or into remote areas of the classroom. It was during this interactional reading that students were able to “co-construct text meaning and creatively elaborate it by interweaving intertextual relationships” (p. 20). It was when they bounced their ideas off of each other that they gained a greater understanding of the text. It is interesting that interactional reading is generally “not encouraged by the teacher and frequently suppressed if detected” (p. 6). Whereas the students
in the class described by Gutierrez et al. (1995) appeared to have abandoned involvement in the teacher’s lesson and were merely socializing with each other in their whispered conversations, the students described by Sterponi (2007) were actually seeking to learn from each other through their whispered conversations. Though the two types of student behavior regarding participation display the opposite ends of the spectrum, each demonstrates that students have influence over their participation, and can choose to pursue learning or not.

It is in fact through participation in interaction that the students gain knowledge. Although Rogoff (1990) found that student-student interaction was least effective, she posits “it still may lead to greater progress than working on a task alone” (p. 388). Ohta and Nakaone (2004) specifically looked at this student-student interaction finding that “student questions to one another overwhelmingly received correct answers, … which underscores the effectiveness of pairwork … for L2 learning” (p. 235). Additionally, they found that when teachers gave direct answers to students, it improved student participation and “provided a useful resource to students” (p. 235). There appear to be multiple factors influencing the interaction between teachers and students. Each influence exerts an effect yielding differing learning opportunities for the students. As students are provided learning opportunities that include interaction with another student, a more knowledgeable peer, or the teacher providing guided participation, it seems significant opportunities for learning are taking place and the student’s ZPD for the particular subject is enlarged.

The teacher-student interaction is influenced by the teacher’s questions, statements, thoughts, and silence. The students exert influence as well through their questions and participation, not only with the teacher, but also with each other. Further, the Participant Structure and the utilization of Guided Participation not only influence the teacher-student interaction, but also impact the learning that is taking place.

**Sociocultural Influences**

In addition to the influences discussed above, cultural factors do shape educational schemata and the resulting discourse. Interaction is greatly influenced by the cultural setting in which it occurs. To understand the nature of the interaction taking place in the nursing simulation, it is important to review how sociocultural influences have shaped teacher-student interaction historically. For example, Lin (1999) asked, “to what extent are classroom
participants shaped by larger social structures, such as sociocultural and familial background, and to what extent are they free to transform their lot” (p. 397) in society? She described one teacher who effectively suppressed the influence of the social structures that were shaping the schemata. What she did to overcome the social influence was to integrate use of the first language (L1) Cantonese in teaching the second language (L2) English to transform the students’ attitudes, so that they felt “confident about learning English” (p. 410).

Lin saw that sociocultural factors can have an influence on student attitudes, but the teacher can wield a greater influence. What other teacher factors also influence the opportunities students are provided for classroom participation? Verplaetse (2000) sought to discern whether native speaker content teachers “allocate turns (at talk) differently to limited-English proficient (LEP) students in the United States than to English proficient (EP) students, and if so, how” (Verplaetse, 2000, p. 22)? She found that there was a decrease in opportunity for the turn to speak for the LEP student, but she also identified “specific questioning strategies and participant structures that can increase interaction opportunities for LEP student(s) in mainstream classroom(s)” (p. 32), such as calling on the LEP student during a large class discussion after previously having given them a preview of the question in the small group. Similarly, Duff (2002) provided insights on L2 student opportunities in America and Canada. Utilizing an ethnographic method, she found that “not only did the content of teacher’s and students’ utterances play a role in positioning themselves and others in various ways, but so too did the sequencing, allocation, and distribution of turns in class discussions” (p. 304). To better understand the influence of cultural variation in classroom discourse, McCollum (1989), Cazden (1987), and Forman (2008) provide their findings.

Citing studies in Appalachia, and the Kamehameha Early Education Program (KEEP) both in Hawaii and on the Navajo Indian Reservation, Cazden (1987) concluded, “to communicate, to understand and to be understood” (p. 76) remains the goal of education and “to keep this constant despite differences in purpose, size of group, medium of instruction, and participants, variation in discourse structure is necessary” (p. 76). Failures in communicative understanding had a greater tendency to occur when students came to school with different discourse expectations than the school held. Second, McCollum found that the IRE format dominated the North American classroom while the Puerto Rican classroom demonstrated something closer to the IC as described by Goldenberg and Patthey-Chavez.
(1995), suggesting that there are cultural influences on the unspoken rules that apply to classroom discourse.

Thirdly, looking at a larger segment of student-teacher interaction, Forman (2008) described the effective use of scaffolding interaction to enhance student L2 learning. He focused his discussion on two types of scaffolding interaction: prompting, and dialoguing. An example of prompting scaffolding interaction (p. 325) is shown below.

1. T: Ok, a little bit earlier than 3 o’clock.
2. T: What is that?
3. S: schedule
4. T: no
5. T: Not schedule. What is it if we are talking about time?
6. S: punctual
7. T: Ah, punctual, isn’t it?
8. T: It means that if you are punctual you come on time.

Here the teacher has a specific answer in mind and continued to prompt the students until the correct answer is given. However, the dialoguing scaffolding interaction Forman (2008) described does not usually occur when the teacher has such a specific answer in mind. Rather the “students’ speech is more open, varied and lies beyond what is in the teacher’s head” (p. 325). An example of dialoguing scaffolding interaction is shown below.

1. T: Do you think, ah, these two alike? [George W. Bush and Osama Bin Laden] Do they have something in common?
2. S: Yes
3. T: Yes, well what is it? [Laugh]
4. S: They love their countries.
5. T: Yes, they love their countries. And some other traits, some other characteristics …mm probably they are very much different right?

In this dialoguing interaction students’ thoughts emerge. Collectively, these authors all recommend “the adoption of culturally congruent participation structures” (McCollum, 1989, p. 152) to facilitate communication.

Besides the cultural factors influencing the nature of classroom structure, there is the aspect that classrooms are places of language socialization. Cook (1999) describes Japanese teachers teaching students to listen to each other’s comments. She found the discourse
structure of I (initiation)-P (presentation)-R (reaction)-E (evaluation) rather than IRE. In contrast, Talmy (2008) describes classroom interactions where the students socialized the teacher to their agenda and regular classroom discourse was abandoned by both the teacher and the students. In view of these contrasting situations, Poole’s (1992) comments suggest the underlying influence: “L2 contexts include cultural dimensions that powerfully and necessarily affect both the teaching and the learning processes” (p. 610). Indeed, it is because “these cultural aspects … do not represent peripheral details but are the primary vehicles through which message content is conveyed” (p. 610), that they must not be overlooked.

**PROFESSIONAL SOCIALIZATION INFLUENCES**

As individuals seek to join a profession, they must learn not only the language associated with the profession, both technical and functional, but also they must learn to conduct themselves as professionals within that community. Simulation offers nursing students opportunities to acquire skills at using the language of the profession as well as, learning to think and act like nurses. These two subcategories of professional socialization will be reviewed separately.

**Acquiring Professional Discourse**

The sociocultural influences also affect individuals seeking to join a profession, such as nurses, lawyers, doctors, plumbers. Lave and Wenger (1991) call this joining the culturally defined “community of practice.” They describe a continuum of learner participation beginning with “legitimate peripheral participation” (p. 29). As the “newcomers” interact with the “old-timers” in existing practice first as observers, as legitimate peripheral participants, “to understand it, to participate in it, and to become full members of the community in which it exists…they begin to establish their own identity in its future” (p. 115). They emphasize that learning “crucially involves participation” (p. 95).

Within the context of nursing simulation, the students become involved in the nursing process, giving care to the patient in the scenario. They make the decisions about how to proceed and manage the care of the patient. They are acquiring the demeanor, knowledge, and discourse of nurses. An important ethnographic study by Philips (1988) provides understanding regarding the acquisition of professional acumen. She described the way law students acquire the vocabulary and the manner of speaking that lawyers use. She uses the
term “cant” to convey not only vocabulary, but also the special way lawyers use, speak, and write (p. 179) language. In her view, acquisition of the cant “entails learning not only appropriate vocabulary and syntax, but also new forms of speech and writing that go beyond the sentence level” (p. 181). She describes the situation that law school students face in that they are relatively segregated from other graduate students as the law school classes fill the waking hours and frequently do not align with other university class schedules. This schedule, which she refers to as “structural segregation” (p. 183), fosters the tendency to only speak to other lawyers or other law students using the “cant” and not pass along the meaning of the legal language to outsiders. Moreover, she notes that it is foundational that law school students acquire the “cant” as a rite of passage into the profession.

Although the terminology and language used in healthcare is not as unfamiliar to the average person as the language of lawyers, it is still rather occupation/community-specific and those wishing to enter the healthcare field of nursing must also master the vocabulary and manner of speaking characteristic of the profession. Similarly, nursing students also tend to find that the nursing class schedule severely limits participation in other university classes and frequently “fills the waking hours.” There are clearly elements of similarity between the overall format of socializing lawyers to their profession, and the process of socializing nurses to their profession. However, there is a significant difference in that from the very beginning, nurses and doctors are taught they must be able to speak in everyday terms to their patients. They must know the language of their profession, but they also must know how to translate it into the everyday talk of their patients who do not know the medical terminology.

**Acquiring Professional Expertise**

With respect to the students learning to be nurses, Benner (2001) describes the pathway they take to become experts in her book *Novice to Expert*, this account also closely parallels the description joining a community of practice noted by Lave and Wenger (1991). In her account, Benner “posits that in the acquisition and development of a skill, a student passes through five levels of proficiency: novice, advanced beginner, competent, proficient, and expert” (Benner, 2001, p. 13). The novice has practical and theoretical nursing knowledge but no situational experience. The novice displays “rule-governed behavior” (p. 21) that is by nature “extremely limited and inflexible” (p. 21). As the novice gains
clinical experience becoming able to identify “aspects of the situation in the Dreyfus model” (p. 22), that are “recurring meaningful situational components,” (p. 22) the novice moves to the advanced beginner level. “Novices and advanced beginners can take in little of the situation: it is all too new, too strange and besides they have to concentrate on remembering the rules they have been taught” (p. 24). As advanced beginners gain more experience they reach the level of competence, usually after 2-3 years working in the same nursing job. The competent nurse is characterized by “conscious deliberate planning” (p. 27) rather than “her earlier stimulus-response level of nursing” (p. 26). The competent nurse gains more experience becoming proficient. The proficient nurse is characterized by perception.

“Whereas the competent person does not yet have enough experience to recognize a situation in terms of an overall picture or in terms of which aspects are most salient, most important, the proficient performer considers fewer options and hones in on an accurate region of the problem” (p. 29). Finally, the proficient nurse becomes an expert “no longer relying on an analytic rule, guideline or maxim to connect her or his understanding of the situation to an appropriate action” (p. 31). Benner (2001) posits that the timeframe from novice to expert is greater than five years experience working with the same type of patient population (p. 31). Nursing students fall at the beginning of this continuum in that they are becoming novice nurses. This pathway is analogous to the path described by Lave and Wenger (1991) regarding “newcomers” interacting with the “old-timers” in existing practice, “to understand it, to participate in it, and to become full members of the community” (p. 115).

**STUDY OVERVIEW**

In view of what is known about teacher-student interaction, nursing simulation, professional socialization and education; learning interactions of a simulated nursing scenario will be examined using techniques and categories of classroom discourse research. The subsequent chapters will follow this order. Chapter 2 will provide a description of the content of the study and the methodology utilized to examine the data. Chapters 3 and 4 describe the findings and provide analysis of the data. Chapter 5 includes a discussion of the findings, followed by chapter summaries. The study concludes with a review of identified implications, limitations, and recommendations for future research.
CHAPTER 2

METHODOLOGY AND DATA COLLECTION

The methodology used for the study will be reviewed in this chapter. First, the physical location, participants, and scenario are described. Next, the techniques used for data collection, transcription and analysis are explained. Then the approach the study employed regarding utilization and application of classroom discourse procedures will be described. Finally, an overview of the subsequent chapters will be provided.

SETTING

The School of Nursing at San Diego State University collected the nursing simulation data on which the present study is based, in the SHARP HealthCare Human Patient Simulation Center in 2008. A drawing of this setting is shown as Figure 1. As you enter the room, there is a life-sized mannequin lying on a gurney. Beside the mannequin is a small vanity on which is located the notebook computer, which regulates the mannequin, and a computer monitor on which are displayed the mannequin’s vital signs: heart rate, oxygen saturation, and blood pressure. Above the vanity is a cupboard that contains oxygen delivery equipment, medications, and supplies needed for the scenario. The mannequin is dressed as a hospital patient. There is a whiteboard on the wall where information related to the scenario is written. A privacy curtain that can be pulled around the gurney is installed in the ceiling. The whiteboard is approximately 3 feet from the end of the patient bed. The medication cabinet is approximately 10 feet from the whiteboard. The teacher is located approximately 8 feet from the patient bed. The teacher uses a remote microphone when speaking as the patient voice. The microphone’s speakers are near the patient’s head so the voice seems to come from the mannequin. In addition, oxygen and suction equipment are available on the wall, as well as disposable gloves in a dispenser, a sharps disposal container, and a hand gel dispenser. A video camera is mounted on the wall as all nursing simulations are filmed and the DVD used for debriefing the students afterwards. The DVD used in this study was part of an archived collection, thus the participants in the film were not aware their scenario would
Figure 1. Scenario setting.

be selected for transcription at a later date. The DVD selected for this study was chosen because it contained a segment when the teacher was out of the room. It was desirable to know what discourse occurred among the students when the teacher was not present. Figure 1 shows the physical layout of the setting. It is not to scale.

PARTICIPANTS

Before the simulation begins, all participants signed the consent for videotaping shown in Appendix A. There are five students, and one faculty in the scenario on which the present study is based. The students are at the end of their first semester of a 5-semester
nursing curriculum that leads to a Bachelor of Science Degree in Nursing (BSN). The faculty member for the scenario (the author of this study) was in her first semester teaching in this BSN program. There is an experienced RN who is a graduate nursing student studying to become a nurse practitioner, who assists in the scenario and plays the role of the nurse practitioner. The BSN students are given roles, shown below, by random selection for the simulated experience.

**Primary Nurse (PriN):** Oversees patient care, and assessment. She has the responsibility to lead the student team, and delegate patient care interventions to other team members. The Primary Nurse stays with patient at the bedside.

**Second Nurse (SecN):** Works with Primary Nurse at the bedside. She has the responsibility to call the healthcare provider, and use Situation, Background, Assessment, Recommendation (SBAR) communication technique.

**Charge Nurse (ChN):** Manages medications and intravenous (IV) lines. She has the responsibility to obtain needed supplies, and equipment.

**Recorder Nurse (RecN):** Records vital information related to the patient on the whiteboard including: vital signs, lab values, assessment findings, new orders, etc.

**Observer Nurse (ObsN):** Records details of the scenario and makes notes for use during the debrief at the conclusion of the scenario.

When the nurse practitioner is speaking it is labeled NP. When the teacher is speaking it is labeled T. When the patient is speaking it is labeled TPat as the teacher is both T and TPat. When the students are speaking, their role labels are used which protects the participants’ privacy and provides anonymity.

**Scenario**

The scenario entitled, “Basic Assessment of the Postoperative Gastrectomy Patient,” developed by METI ® was selected by the course director. The faculty copy (Appendix B), is utilized by the teacher. Students are provided the learner guide (Appendix C) in preparation for this simulated clinical experience. The doctor’s orders (Appendix D) and medication administration record (Appendix E) are used during the simulation. The background information for the scenario is reviewed at the beginning of the scenario.

This patient is a 76-year-old female whose chief complaint at her healthcare provider’s office was frequent dyspepsia (heart burn) and epigastric (stomach
pain) pain relieved by antacids. She also complained of rapid weight loss and feeling fatigued. After a series of tests, a biopsy was performed which confirmed gastric cancer. A partial gastrectomy (partial removal of the stomach) was performed three days ago to remove the cancerous lesion (tumor). She is exhibiting signs of depression because of her recent diagnosis. (McMenamy, 2007, p. 1)

Students are told they are a team delivering care to the patient and asked to make a plan for the way they will provide the care to the patient. They take a few moments to plan. The transcription begins as the students enter the patient room and begin caring for the patient, Amanda Brown.

**DATA COLLECTION AND TRANSCRIPTION**

As noted, the film selected for transcription was chosen because there is a period when the students are left alone in the room with the patient. It was desirable to transcribe this discourse to discern what was happening when the teacher was not present. The scenario takes 1 hour and 42 minutes. The portions selected for transcription, listed below, involved identifying the patient’s complaint of pain, preparing the pain medication, and administering it. The visit of the nurse practitioner near the end of the scenario was also transcribed.

1. Task identification: minutes 12-15
   a. Assessment of the patient’s complaint of pain
   b. Identification of nursing intervention for the pain
2. Task preparation: minutes 37-53
   a. Medication calculation
   b. Medication preparation
   c. Medication administration
3. Nurse practitioner visit: minutes 54-58
   a. Report of assessment findings
   b. Report of interventions and results

IRB approval was obtained through San Diego State University (Appendix F). Transcription conventions are described in Appendix G.

**METHODS OF ANALYSIS**

The transcribed data were evaluated in four ways. First, the nature of the interaction was described relative to participants and content. Five different discourse situations were
identified: teacher-nurse, teacher-student, student-student, nurse-patient, and healthcare provider-nurse. Each discourse situation reveals unique findings and content. Next, the structure of the interactions was examined in light of traditional classroom structure described by Mehan (1979), and further for non-traditional classroom discourse structure described by Cazden (1987), Rogoff (1990), Poole and Patthey-Chavez (1994) and others. Thirdly, the interactions were analyzed for evidence of professional role socialization as described by Benner (2001), and Lave and Wenger (1991). Lastly, the interactions were inspected for evidences of learning. Vygotsky’s (1978) work describing the zone of proximal development (ZPD) and the work of Ochs et al. (1979) work describing articulation of propositions served as the bases of this fourth type of analysis.

**PREVIEW OF THE PRESENT STUDY**

Chapter 3 will describe and analyze each discourse situation (teacher-nurse, teacher-student, student-student, nurse-patient, and healthcare provider-nurse) as isolated conversations. The meanings of the utterances will be described, followed by a discussion of discourse observations connecting the content to classroom discourse literature. Chapter 4 will further describe three discourse examples from Chapter 3 showing the isolated conversations as they originally occurred alongside other parallel, overlapping conversation(s). The alignment and meaning of the isolated conversation in this larger context will be explained. Additional discourse observations will be made. Chapter 5 will provide a discussion of the findings as they relate to participant structure and learning. The findings of Chapters 3 and 4 will be summarized and the study will be concluded noting pedagogical implications, and recommendations for future research.
CHAPTER 3

SIMULATION INTERACTION:
UTTERANCES ONE-BY-ONE

This chapter will describe and analyze the data from the nursing simulation scenario. The overall goal of simulation is to offer the students a clinical experience that poses no risk to the patient, which can cover diagnoses that range from common to infrequently occurring and/or high risk, thus giving them a virtual hospital experience that is an example of “legitimate peripheral participation” (Lave & Wenger, 1991). The simulation data reveal the presence of five distinct discourse situations that are, in general, quite different from the interactions found in a traditional classroom: (1) teacher-nurse interaction, (2) teacher-student interaction, (3) student-student interaction, (4) nurse-patient role play conversation between the students and the patient, and (5) healthcare provider-nurse role play between the healthcare provider and the students. The first of these, the teacher-nurse interaction, involves the teacher seeking to join the student who is functioning within the Registered Nurse (RN) role in the scenario on her “plane of thinking,” and supporting her in the task through “guided participation,” (Rogoff, 1990). The second type of discourse involves the teacher speaking to the students as a whole group. Again, the teacher provides “guided participation,” (Rogoff, 1990), but now there is a greater effort to draw the students toward the teacher’s frame of thinking. The students are not interacting within their scenario roles in this setting so it is termed teacher-student interaction. The next discourse situation is student-student interaction, which typically is conducted covertly to escape the full knowledge of the teacher, involves collaboration between the students to accomplish their task. It frequently results in a more knowledgeable peer(s) assisting the less knowledgeable peer(s) in “guided participation,” (Radziszewska & Rogoff, 1991). The fourth discourse type is the nurse-patient role-play interaction. In this interaction, the students play the role of the authority figure as they speak to the patient. This role play casts the teacher in the role of the patient. The teacher seeks to bring the patient’s perspective into the scenario. This is an important aspect for the students to manage as nursing involves care of real people with problems and
they must learn how to talk effectively with the patient. Finally, the healthcare provider-nurse interaction most closely approximates traditional classroom teacher-student discourse. The healthcare provider portrays the authority figure to whom the students report their findings and interventions related to the patient. Each discourse situation provides the students with “guided participation” (Radziszewska & Rogoff, 1991) in multiple ways: expert-novice as they interact with the teacher and the healthcare provider, and novice-novice as they consult each other. The role-play interactions provide them opportunity for professional role socialization, an experience of “legitimate peripheral participation” (Lave & Wenger, 1991) as they fully step into the RN role. Because the simulation data involves overlapping parallel conversations, the five types of interaction will first be looked at separately from the larger context in which they occurred. The segments chosen to pull out and look at separately contain the main content thread. This content-oriented interaction will be the focus of initial analysis.

**Teacher-Nurse Interaction**

As mentioned above, the first discourse situation in the nursing simulation analyzed for this study is teacher-nurse interaction. The students have the teacher’s full attention during simulation, as they are in a situation of a 1:5 teacher-student ratio. In fact, they have no other opportunity in their course work that provides such close attention for an extended period. The teacher provides expert-novice “guided participation” (Rogoff, 1990) using scaffolding to support the student.

In Example 1, the teacher interacts individually with the Charge Nurse who is preparing pain medication for the patient. The Charge Nurse is speaking to the teacher within her role as Charge Nurse in this simulation scenario. She is not just a nursing student speaking to the teacher so the interaction is labeled teacher-nurse interaction. The Recorder Nurse opens the segment with a whispered comment, line (a). Comments that are spoken in whispered or lowered voices are italicized.

Example 1

a. *RecN:* *Morphine is an IV push*

b. *T:* What’s her dose of morphine?

c. *ChN:* What’s that?

d. *T:* What’s her dose of morphine that you’re gonna give?
e. ChN: It’s 2 mg IV push
f. T: So, how much is in that syringe?
g. ChN: Um 1 ml
h. T: So, how much is in that 1 ml?
i. ChN: Um, should be one (..) so it should be less,
j. S: Yah
k. ChN: right. It should be less. Can you check um my dilution?
l. SecN: Which one is it?

The Recorder Nurse’s whispered comment, line (a), can be considered a kind of musing. She is talking to herself about the medication preparation and is standing by the whiteboard about eight feet away from the Charge Nurse, who is beginning preparation of the morphine to give by intravenous (IV) push. The teacher’s question of line (b) is overlapped by a comment in a parallel conversation not shown. In line (c), the Charge Nurse asks for repetition of the teacher’s comment for clarification. The teacher interacts individually with the Charge Nurse in this segment, providing scaffolding for the process of preparing the pain medication for the patient. Scaffolding is the term used to describe the interactional structure the teacher provides to assist the student. It is a supporting framework that assists the student in the task. Notice the teacher questions bring out the necessary elements of the mathematical problem of calculating the correct dose of morphine. First, the correct doctor’s order is verified, 2mg Morphine IV push, line (e), followed by verification of the quantity available, lines (f-i). Because the student is working on a specific task, she has a particular readiness to learn in this situation. For this reason, this scaffolding is considered “learner-driven” (van Lier, 2004, p. 162) in that the catalyst for the scaffolding is the learner’s need. The teacher is providing a type of scaffolding in lines (b-h). After her question at line (h), the teacher becomes silent during this task for the next five minutes as the Charge Nurse ceases speaking with the teacher because she believes she understands how to proceed without further input from the teacher. Immediately she lowers her voice, and seeks assistance from the Second Nurse in continuing the medication preparation, line (k). Although she had decided she no longer needed the teacher’s assistance, she clearly wanted some assistance or she would not have sought out the Second Nurse.
**DISCOURSE OBSERVATIONS: EXAMPLE 1**

The teacher questions in Example 1 seem to accomplish collaborative co-construction of knowledge between the student and the teacher in a manner similar to that described by Forman (2008) as “prompting scaffolding interaction” (p. 325). The teacher questions in this scaffolding also seem to accomplish what Lee (2006) discussed regarding display questions “pointing to an array of interactional work” (p. 708) and thus yielding greater student participation. Once the Charge Nurse thought she had enough information and knowledge to proceed without the teacher’s assistance, she sought collaboration and further discussion with her classmate in line (k). These teacher questions (lines b, d, f, h) helped form foundational knowledge to support the students’ working on this problem together. Notice also, the teacher makes no evaluative comment (E-comment) in Example 1. Lines (f), (h), and (j) represent turns where the teacher could have made an evaluative comment but did not. The absence of the E-comment seems to sustain student participation yielding findings comparable to Nassaji and Wells (2000).

This segment of teacher-nurse interaction is an example of the kind of strategically situated “guided participation” that Rogoff (1990) proposes is designed to assist the student’s thinking and decision-making. This individual interaction with one student shows evidence of the teacher trying to join the student on the student’s “wave-length” where she is thinking about the medication calculation and to move the student through the mathematical process of calculation.

**TEACHER-STUDENT INTERACTION**

Example 2 shows the teacher interacting with the students collectively. The students have stepped out of their roles in the scenario so this interaction is labeled teacher-student. The guided participation provided by the teacher includes no E-comment turns, thus student participation is enhanced. The teacher initiates this interaction to ensure the students follow proper procedures to ensure sterility of the medication.

Example 2

- a. T: But, remember this part here is supposed to be kept sterile.
- b. RecN: uhhmm
- c. T: So, I don’t know, you had the cap off a really long time (..)
- d. ChN: [Can we swab it?]
e. T: [I’m just not sure.]
f. Ss: [laugh]
g. T: [laugh]
h. T: I’m not sure.
i. Ss: laugh
j. T: But um (.) But um (.) But in real life every time you take a cap off (.) don’t spend a lot of time doing other things once the cap is off you know (.)
k. ChN: uhmm
l. T: because you have to really keep your eye on that so um (.) I think we need another syringe. But in real life if this was contaminated, what we would have to do because this is a narcotic (.) [it would either have to be wasted
m. ObsN: [we would
n. T: or there would have to be another way to extract it, which, there would be another way to [extract it.
o. RecN: [extract it
p. ChN: Yah
q. T: There’s a rubber stopper there so you could swab that um and then take a sterile syringe and then draw out what you need.

The medical issue underlying this sequence is that the tip of the syringe that will go directly into the patient’s bloodstream intravenously (IV) must be kept sterile as the nurse prepares the medication. It is this tip that has been open to air for an extended time and that the teacher calls attention to in line (c). The teacher doesn’t come straight out and say she thinks the equipment is no longer sterile, but rather, she invites the students to come to this conclusion. The Charge Nurse’s suggestion that they swab the syringe tip in line (d) is ignored, by both the teacher and the students. It may have been ignored because it is not a possible solution, or perhaps because it was not heard since the utterance overlapped with the teacher in line (e).

**DISCOURSE OBSERVATIONS: EXAMPLE 2**

These segments of the simulation data are consistent with Cazden’s findings regarding the teacher’s use of “declarative statements, reflective statements, invitations to elaborate, and (hardest of all) silence” (Cazden, 1987, p. 60). The scenario seems to be a catalyst that fostered the teacher’s use of reflective statements as in Example 1, line (h.), declarative statements as in line Example 2, line (a), and an invitation to elaborate as in
Example 2 line (c) as well as five minutes of silence following Example 1. Cazden observed that “only when the talk shifted away from transmitting to the student did the structure of talk depart from the IRE sequence” (p. 66). The teacher’s minimal explanations provided periodically also play an important strategic role. They constitute “guided participation” (Rogoff, 1990) that is “learner driven” (van Lier, 2004) offered at the point of learner need.

The teacher uses repeated declarative statements in this section and just as Cazden (1987) predicted, they do seem to encourage student participation. There are no E-comment turns by the teacher, though lines (e), (q), and (t) of Example 2 would have been opportunities for an E-comment. Notice also how intensely the students are listening to the teacher and predicting her words in lines (l) and (m). The students’ speech overlaps the teacher for “would” and “extract it” in lines (n) and (o). Again, the absence of the E-comment turn seems to create greater student participation.

The Instructional Conversation (IC) lesson transcript of Goldenberg and Patthey-Chavez (1995) which diverged from the traditional Initiation, Reply, Evaluation (IRE) format yielded minimal teacher evaluative comments as does the simulation data. So, to engage the learner in reflective construction of knowledge, removing the E-comment of the IRE sequence seems to be a facilitating factor. The simulation data similarly reveals evidence of student reflection. The students are given space for initiation, participation, and reflection as there are almost no E turns by the teacher in the entire transcript.

**STUDENT-STUDENT INTERACTION**

Thirdly, this study considers the interactions of the students with one another. These interactions are prevalent throughout the scenario and they are usually whispered or spoken in a lowered voice. The “guided participation” (Radziszewska & Rogoff, 1991) seen here is novice-led. The more knowledgeable peer(s) provide guidance to the less knowledgeable. The teacher became silent for five minutes at the end of Example 1. Example 3 occurs at the end of the segment of teacher silence where all five students are consulting together on the mathematics for the morphine dose. Despite the fact that their utterances are labeled by their role names in the scenario, they have stepped out of those roles as they collaborate with each other on the medication calculation. Example 3 below depicts this segment.
Example 3

a. ObsN: Show me how you do it
b. SecN: It’s right here
c. ChN: Cuz if you’re going to give 5mls there’s only (.) there’s only 2mls in here
d. S: (inaudible)
e. PriN: How many, how much mls are you supposed to give her?
f. ChN: We’re still trying to figure it out
g. Ss: Laugh
h. ChN: Cuz I, cuz I thought it’s order over
i. SecN: 2 mls
j. ChN: Order over half times whatever
k. S: (inaudible) so
l. SecN: Yah 0.2
m. ChN: That’s what I thought
n. ObsN: Yah, it’s 0.2
o. ChN: So my thing is how do we get this out? How do we get to point 2?
p. SecN: We, I think we have to waste
q. ObsN: You have to waste (inaudible) another (inaudible)

In line (c), the Charge Nurse mentions giving the patient 5mls of morphine, which at 10mg/ml would be a dose of 50mg. This would kill the patient. As the students review the calculation again in answer to the Primary Nurse’s question of line (e), they ultimately achieve consensus on the dose of morphine as 0.2ml in line (n), which is 2mg of morphine, the correct dose. Because their voices are lowered, the teacher is completely unaware that there was any consideration of the 50mg dose mentioned on line (c).

**DISCOURSE OBSERVATIONS: EXAMPLE 3**

The nursing students collectively arrived at the correct answer in the medication preparation task (line n), suggesting perhaps that nursing students may often give each other the correct answer, as did the L2 students observed by Ohta and Nakaone (2004). Yet, an error in understanding L2 does not carry the same potential consequences as a medication error in the patient care setting. In the safety of a simulated experience, the nursing students can have the opportunity to try out their clinical decision making with their peers while
working on a nursing assignment. The students proceed in accomplishing their task collaboratively. This is another example of the kind of “guided participation” described by (Radziszewska & Rogoff, 1991). In this instance, the more knowledgeable peer(s) provide guidance to the less knowledgeable. The accomplishment of the goal achieved in the student-student interaction not only proceeds without teacher direction, it proceeds without the teacher being aware of the details of how the goal is being reached.

Another aspect of learning taking place here is described by Ochs and colleagues (1979) who observed that children learned how to articulate propositions using “overt syntactic means” (p. 251) “by participating in a sequence in which they contribute a component of the proposition” (p. 268). The Charge Nurse is seen contributing a component of the proposition that to deliver the proper dose of morphine, she must draw up 0.2 mls. This proposition was initially scaffolded by the teacher in Example 1, by her peers in Example 3 and in Example 3, line (m), the Charge Nurse made the concluding statement of the proposition. Nursing students perhaps learn important aspects of the nursing process through a simulated scenario where they contribute significant components of the thinking, and decision-making.

An additional learning transaction taking place here is that the students are learning that they can seek out consultation with another nurse if they are unsure of how to proceed with any aspect of patient care. This is highly significant for them because when nurses are unsure about the next step in any patient care situation, consulting with a colleague will most likely provide a protective measure for the patient. This experience pushes the students to see the value of peer consultation, and perhaps may encourage them as “newcomers” to be less hesitant in seeking a consultation from an “old-timer” in the hospital setting. This collaboration not only has the potential to protect their patient, but also to move them toward greater expertise as nurses, as Lave and Wenger (1991) and Benner (2001) describe.

Example 4 is another instance of student-student interaction that reveals what was said when the teacher briefly left the room. Here the students are seeking information from each other.

Example 4

a. ChN: I’m like how do I use that? And then when I opened it up oh! there’s a way to like put it in.

b. RecN: uhmm
The students’ conversation here instantly focuses on questions they have about the scenario in line (a). The Charge Nurse immediately mentions her unfamiliarity with “that,” the Carpuject ® cartridge the morphine comes packaged in, and “these,” the Carpuject ® holder needed to administer the medication in line (c). None of the other students offer the Charge Nurse any help with the Carpuject ® equipment, however; so, the Observer Nurse asks about the calculation of the nausea medication in line (e). Both the Charge Nurse and the Second Nurse readily reply regarding the nausea medication. It had been an easy calculation. The ordered dose was 25 mg and it came packaged as 25 mg/ml.

The Charge Nurse’s question about the Carpuject ® equipment is ultimately answered by the teacher instructing the group regarding its use. This student-student talk is the only student-student interaction that includes no whispering. However, it is still covert, concealed from the teacher as she is out of ear-shot. There is no move to discuss topics unrelated to the simulation while the teacher is gone; rather they focus exclusively on aspects of the simulation. This suggests that when given an opportunity, no matter how brief, the students apparently have clarification questions they want to ask of each other. Here again the students are experiencing colleague consultation related to nursing care of a patient.

**DISCOURSE OBSERVATIONS: EXAMPLE 4**

The student-student interaction in these and other instances throughout the scenario are strikingly similar to the “interactional reading” described by Sterponi (2007). As noted in Chapter 1, “interactional reading” resulted as children sought out opportunities to read together when the teacher had instructed them to read silently. They disappeared out of her sight under desks or into remote areas of the classroom. It was during this interactional
reading that students were able to “co-construct text meaning and creatively elaborate it by interweaving intertextual relationships” (p. 20). As they bounced their ideas off of each other, they gained a greater understanding of the text.

The whispered conversations of the students in simulation allowed them to collaborate with each other and expand their understanding of the nursing process. In Example 1 line (k), the Charge Nurse leaves the interaction with the teacher and seeks out interaction with a peer that resembles the “interactional reading” found by Sterponi (2007). While in simulation, the students are not physically hidden from the teacher’s view, so they deliberately lower their voices, so that the teacher will not hear them. The student-student interaction provides a valuable learning opportunity for the students in the simulation scenario through guided participation with potentially more knowledgeable peers. The parallels are inescapable between the nature of interactional reading and the whispered conversations in simulation. Both are conducted covertly, out of direct observation of the teacher, and both achieve significant knowledge gains for the students.

**NURSE-PATIENT ROLE PLAY INTERACTION**

The fourth type of discourse in the nursing simulation is nurse-patient. Again, there is novice-led guided participation (Radziszewska & Rogoff, 1991) in this interaction as well, but now the student nurses also must interact with the patient. The students fully step into the RN role experiencing “legitimate peripheral participation” (Lave & Wenger, 1991). Example 5 shows the students as they initially evaluate the patient’s complaint of pain. Below is the interaction as the students speak to the patient, Amanda Brown.

Example 5

a. SecN: Hi, Mrs. Brown my name is Second Nurse [indistinguishable
b. TPat:                          [Hi

c. SecN: I’m a nursing student at SDSU and I will be help (...) taking care of you today, is that OK?
d. TPat: Yeah
e. PriN: Good morning Mrs. Brown my name’s Primary Nurse. I’m also a nursing student from San Diego State n I’ll be taking care of you as well today.
f. TPat: OK, you know I’m having pain in my incision. It’s really hurting me.
g. PriN: On a scale of 0-10 zero being the lowest and 10 being the highest could you (...) rate (...) your pain (...) level?
h. TPat: It feels like a 7 to me (...)
i. PriN: [OK
j. TPat: [It’s really hurting this morning. I don’t know why it is hurting so much today.
k. SecN: uh um, so maybe we can get her pain meds
l. PriN: yeah
m. SecN: So, we’ll check um to see if you can take any pain meds right now. Think the last time you took it was probably before midnight
n. TPat: [OK
o. SecN: [so we’ll go take a look for you.
p. TPat: OK
q. RecN: OK, um since she’s at a 7 we could probably (..) give her morphine for severe pain

After the students introduce themselves, the patient immediately complains of pain. Beginning in line (g), the students assess the patient’s pain. They briefly consult with each other in whispered voices lines (k), and (l). Then they inform the patient of their decision to go check on whether she can have some pain medication now. They leave the patient and consult the Recorder Nurse. In this situation, the teacher speaking through the voice of the patient, initiates the problem of pain. However, the students decide how to handle the patient’s pain. They consult with each other and decide to give morphine for her pain. The patient had two pain medications ordered, an oral pill, and the IV morphine. The students decided on the IV morphine, a decision they made without the teacher’s input.

This kind of interaction is a major learning transaction offered the students in simulation that their actual hospital experience does not regularly offer them. If they had been caring for this patient in the hospital, they would have been required to inform either their supervising RN or their instructor of the patient’s need for pain medication. They may never have had the opportunity to make an independent decision to give morphine. They would likely have reported the pain, and the RN responsible may have made the decision what pain medication to give the patient without even asking the students what they would recommend. Also, because morphine is a narcotic, unlicensed students have no access to it on their own in a hospital. They could be talked through preparing it under the supervision of the RN, but it is quite doubtful the students would be allowed to figure it out on their own while the RN watched them for 5 minutes. Most likely the supervising RN would just ask the
student(s) to watch her do it. (In simulation the morphine is really saline or sterile water labeled as morphine.) Hence, in the simulation scenario these students were allowed all the time they needed to prepare the medication dose without teacher input. Making the decision and preparing the IV morphine for the patient allowed the students experience taking on the role and decision-making of the RN.

**DISCOURSE OBSERVATIONS: EXAMPLE 5**

This creates the situation described by Poole and Patthey-Chavez (1994) where “learning in the zone of proximal development (ZPD) becomes novice rather than expert-led” (p. 30). The students identify the patient’s complaint of pain and begin to implement nursing interventions to relieve the pain. They determine the patient should receive intravenous morphine because of the severity of pain, and concomitant complaint of nausea, which eliminated the option of oral pain medication. Here the students are not just stating a component of a proposition described by Ochs et al. (1979), rather they have stated the entire proposition: “Let’s give the patient IV morphine for the pain.” This is novice-novice “guided participation” which Radziszewska and Rogoff (1991) predicted would “lead to greater progress than working on a task alone” (p. 388). Collectively, the students are effective working together to manage the patient’s pain. Additionally, as they observe themselves making good decisions and bringing relief to the patient, they can also notice they have made a positive difference in the life of the patient.

Example 6 below shows the Nurse-Patient interaction as the Charge Nurse gives the pain medication.

**Example 6**

a. ChN: Hi I finally have your morphine.

b. Ss: laughs

c. TPat: OK, good I’m glad

d. ChN: Sorry about the wait, we were trying to figure it out [first.

e. TPat: [ok

f. ChN: Can you tell me your birth date?

g. TPat: July 13th, 1931

h. ChN: OK, great

i. S: [((inaudible))
When they finally bring the morphine to the patient, the Charge Nurse offers an apology in line (d) about the wait. She then performs patient identification in line (f) prior to giving the medication. As she gives the medication she provides a description of her task for the patient, lines (k), (m), and (o).

**DISCOURSE OBSERVATIONS: EXAMPLE 6**

In administering the IV morphine, the Charge Nurse fully takes on the role the RN in a real hospital setting would fill. She is not acting as a student nurse being coached through each step in the process by a supervising RN, nor is she standing by watching the supervising RN administer the medication. The simulation scenario thus provides a virtual hospital setting that gives the students an experience that Lave and Wenger (1991) would likely consider to be “legitimate peripheral participation” (p. 29) as the students are not in a true hospital. However, the students have an experience here that goes beyond observing the “old timers” characteristic of “legitimate peripheral participation.” Instead, the students are the RNs caring for the patient in simulation. They are gaining understanding of the role of the RN in a patient care setting, under the observation and guidance of an experienced RN, the teacher.

**HEALTHCARE PROVIDER-NURSE ROLE PLAY INTERACTION**

The fifth and final discourse situation described by this study is a second element of role play simulation, that of Healthcare Provider-Nurse interaction. The healthcare provider provides expert-novice “guided participation” (Rogoff, 1990) using a discourse structure that is more similar to a traditional classroom IRE format than any of the other simulation data demonstrates. Example 7 shows this interaction. The Nurse Practitioner (NP) enters the room
as if arriving on rounds and asks to speak to the Primary Nurse. Example 7 begins in the middle of the interview between the Nurse Practitioner and the Primary Nurse.

Example 7

a. NP: OK, and how about her dressing? Is she?

b. PriN: serosanguineous drainage

c. NP: uh huh

d. PriN: it’s intact

e. NP: a lot?

f. PriN: No

g. NP: OK, and she had bowel sounds this morning?

h. PriN: Yah

i. Ss: ((inaudible))

j. NP: OK, and has she been drinking yet? Or

k. S: Well she was nauseated so we didn’t want to give her anything

l. NP: She didn’t start that last night or anything (..) or

m. NP: OK, OK, Uh then, let’s take a look at her together

n. NP: How’s she doing emotionally (…) how’s she handling

o. PriN: She feels like doesn’t have cancer and the doctor made a mistake

p. RecN: She’s in denial

q. NP: Oh, Ok, Ok, can you think of anything that (..) might be helpful with that (…) umm to help her with that part of it?

r. S: ((inaudible)) give her some ((inaudible))

s. NP: Anything you can think of that might help her try to start dealing with (…) umm the diagnosis and having that sink in

t. RecN: Explaining umm that she did have (..) actually explaining yes, the doctor did find that she has cancer (..) and nicely trying to tell her (..) umm (..) Maybe describe what cancer is and the area that they found it ummm. Maybe even bring in (..) I guess maybe show her her medical record and

u. NP: Now (..) she may (..) not accept that anyway (..) umm I just wondering do you think a social work consult or a chaplain visit be helpful for her?

v. Ss: Yes, umhmm, Yah.

As the Primary Nurse and the Nurse Practitioner speak, the other students are silent, listening. This is the only extended period of the scenario where student-student whispering is absent. The Nurse Practitioner asks a number of questions regarding the patient status:
dressing, activity, etc. Although the Nurse Practitioner is played by an experienced RN who is a graduate student becoming a Healthcare Provider rather than an actual physician, the role-play does allow the students to enter into this type of discourse experience. This situation is not available to them as student nurses in a hospital setting, as the RNs who are legally responsible for the patient care are the ones who speak to the doctors or nurse practitioners about the patients.

**DISCOURSE OBSERVATIONS: EXAMPLE 7**

The Nurse Practitioner in the scenario is an experienced RN and she effectively demonstrates elements of typical healthcare provider interaction that are similar to the findings of Drew and Heritage (1992) related to doctor-patient interviews as “they found the doctors asked more questions and thus controlled the agenda” (Basturkmen, 2003, p. 22). The Nurse Practitioner also uses “and-prefacing,” described by Heritage and Sorjonen (1994), seen in lines (a, g, and j) and “or-inquiry” described by Turner (2009) seen in lines (j, and l). “And-prefacing” is used to join together a group of questions that are related as if items on an agenda where the answers to each question are not problematic. “Or-inquiry” is used by the physician to “mark problematicity and relax the preference structure of the turn” (Turner, 2009), offering the student nurse the opportunity to disagree or provide problematic information. This makes line (j) interesting because it is both “and-prefaced,” indicating its connection to the previous question and concludes with an “or-inquiry” inviting the nurse to give an answer that is problematic. Line (k) is indeed a problematic answer relating the patient’s nausea. The “and-prefacing” allows the provider to string together all the data relative to these questions giving a full picture of the patient’s status. It also allows the nursing students to recognize these question/answer pairs as related. According to Turner (2009), the “or-inquiry” is a tool that allows the doctor to glean information from the interviewee. Without the relaxed preference indicated by the “or-inquiry,” important information may go unstated. The Nurse Practitioner utilizes these two inquiry strategies to gain pertinent information, suggesting that this interaction provides an opportunity for the students to practice nurse-provider communication. The similarities between this role-play interaction of nurse-healthcare provider here and the findings of Drew and Heritage (1992), Heritage and Sorjonen (1994), and Turner (2009) indicate that the simulation is marked by a
measure of authenticity allowing the students to gain another element of socialization to the professional RN role.

The healthcare provider-nurse interaction most closely resembles the traditional classroom dialogue as the Nurse Practitioner sets the agenda and the students report their assessments and interventions related to the patient. Just as in a traditional classroom the teacher sets the agenda and the students report what they have learned in the “homework.” The Nurse Practitioner is clearly the authority and exerts an influence that results in no student-student whispers during the dialogue. The Primary Nurse reports information about the patient status in brief, unelaborated answers.

At line (n), the Nurse Practitioner shifts to an even more traditional classroom style of questioning. She is trying to draw the students up to her “plane of thinking” with regard to the patient’s emotional status, just as teachers do in traditional classrooms. The students report the patient has been demonstrating the first stage of grief: denial (lines o and p). Because the students appear uncertain how to best help the patient begin dealing with her denial, the Nurse Practitioner invites the students to consider her suggestion regarding social work or chaplain visit to assist the patient.

The Nurse Practitioner uses a weak E-comment of “OK” followed by an initiation in lines (a, g, j, m, and q). This is the closest the simulation transcript comes to the traditional IRE structure.

**SUMMARY**

It can be seen from the interaction in Examples (1)-(7) above, important and observable differences in the interaction based upon the context of the discourse situation. Each of these discourse situations – teacher-nurse, teacher-student, student-student, nurse-patient, and healthcare provider-nurse provides unique, distinct learning opportunities for the students. In the teacher-nurse discourse, the student gains scaffolding and support for her task through the intermittent guided participation of the teacher. In the teacher-student discourse, collectively the students gain knowledge needed for their task from expert-novice guided participation. Through the student-student discourse they collaborate with each other receiving peer guided participation. In the nurse-patient discourse, they step into the role of the RN gaining understanding of their professional responsibility. Then in the healthcare
provider-nurse discourse, they are able to report and evaluate the nursing care they have given the patient. Here the nurse practitioner provides another aspect of experienced, more knowledgeable guided participation. Again, the students gain understanding of yet another dimension of the professional RN role.
CHAPTER 4

SIMULATION INTERACTION: SIMULTANEOUS, PARALLEL UTTERANCES

As mentioned in Chapter 3, the interaction created by the nursing simulation frequently resulted in parallel, overlapping conversations. Chapter 3 pulled the individual conversations out and looked at them separately from the larger context in which they occurred. This chapter will further examine three of the examples discussed in Chapter 3 in order to illustrate how the overlapping conversations occurred in context. These examples each display the multiple types of interaction described in Chapter 3 were taking place simultaneously. These co-occurring sequences show student-student interaction alongside the other types of talk. In fact, it can be seen through these simultaneous sequences that the student-student interaction is not just prevalent; it is seen to be pervasive. Periodically the role-play becomes suspended while the students work through their tasks, seeking guidance from each other or the teacher in order to determine the next step in the care of the patient. Although there are multiple simultaneous conversations, there are very few instances of overlapping speech suggesting that the participants are leaving conversational space between these parallel conversations, thus allowing the students to participate in any of the conversations as needed.

INDIVIDUAL TEACHER-NURSE INTERACTION AND STUDENT-STUDENT INTERACTION DISCOURSE

The first discourse situation to be considered involves parallel interactional sequences of both expert and novice-led guided participation (Radzisewska & Rogoff, 1991). This short segment shows three distinct types of interaction: teacher-nurse, student-student, and nurse-patient role-play. Perhaps, more importantly, there is no moment when the student-student interaction ceases. The specific students who engage in whispered student-student interaction changes, but the interaction in lowered voices continues. There is a single teacher-nurse interaction, two student-student interaction sequences, and the beginning of a nurse-patient role-play conversation. The setting for this sequence is depicted in Figure 2, which is not
The transcript begins with the Recorder Nurse making a whispered comment to herself in line (a), Conversation-A. Then the Primary Nurse whispers a question to the Second Nurse regarding the assessment of the patient’s surgical dressing in line (a), Conversation B. The teacher first speaks in line (b), Conversation A, however this does not silence the student-student interaction between the Primary Nurse and the Second Nurse. Rather, the Charge Nurse identifies herself as the one the teacher is speaking to and speaks
singly with the teacher. The Charge Nurse remains in her role of the nursing simulation scenario as she speaks to the teacher. She is not just a nursing student speaking to the teacher so the interaction is labeled teacher-nurse interaction. The Primary Nurse and the Second Nurse now conclude the teacher is not speaking to them, so they continue speaking to each other while they complete the assessment of the patient. Although the conversations are distinct, there are very few incidents of overlapping speech, thus the participants are allowing conversational space for both conversations to be heard by all.

Table 1 shows the transcript of these parallel conversations.

Conversation B depicts the Primary Nurse and the Second Nurse conferring with each other as they complete the physical assessment of the patient. This student-student interaction is italicized through line (g), because it is conducted in lowered voices. They assess the patient’s surgical dressing noting serosanguineous drainage (watery drainage that is slightly bloody), lines (b-f).

Conversation A shows the interaction between the Teacher and the Charge Nurse addressing the preparation of the pain medication beginning in line (b). After the teacher’s question of line (h), the Charge Nurse seeks consultation from the Second Nurse, line (k), thus beginning a whispered student-student interaction. The teacher-nurse interaction is ended for now. The Charge Nurse has lowered her voice indicating she is no longer speaking to the teacher.

Soon after the Charge Nurse lowered her voice, at line (k), Conversation A, the Recorder Nurse began speaking in an audible voice, line (h), Conversation B. Because she is speaking audibly, it is not italicized. She indicates a desire to transition from a whispered student-student interaction to an audible nurse-patient interaction. The teacher first becomes silent because the Charge Nurse began whispering to the Second Nurse, but now the teacher’s voice is silenced because she begins speaking for the patient in line (j), Conversation B. The teacher’s voice is silent for the next five minutes. The teacher willingly continues the dialogue between the patient and Primary Nurse giving the other students a significant amount of time to work together on the medication preparation task.

The students work on the medication preparation task for five minutes while the Primary Nurse and the patient continue to talk. This five-minute segment is not shown in the
<table>
<thead>
<tr>
<th>CONVERSATION A</th>
<th>CONVERSATION B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teacher-Nurse Interaction</strong> (Medication preparation)</td>
<td><strong>Student-Student Interaction</strong> (At the patient bedside)</td>
</tr>
<tr>
<td>a. RecN: Morphine is an IV push</td>
<td>a. PriN: Did you assess her down here?</td>
</tr>
<tr>
<td>b. T: [What’s her dose of morphine?</td>
<td>b. SecN: [Yah, it’s intact</td>
</tr>
<tr>
<td>c. ChN: What’s that?</td>
<td>c. PriN: (inaudible) OK</td>
</tr>
<tr>
<td>d. T: What’s her dose of morphine that you’re gonna give?</td>
<td>d. PriN: (shaking head no)</td>
</tr>
<tr>
<td>e. ChN: It’s 2 mg IV push</td>
<td>e. SecN: just serosanguinous</td>
</tr>
<tr>
<td>f. T: So, how much is in that syringe?</td>
<td>f. PriN: Yah, it’s serosanguinous</td>
</tr>
<tr>
<td>g. ChN: Um 1 ml</td>
<td>g. SecN: (smiles) inaudible</td>
</tr>
<tr>
<td>h. T: So, how much is in that 1 ml?</td>
<td></td>
</tr>
<tr>
<td>i. ChN: Um, should be one (..) so it should be less,</td>
<td></td>
</tr>
<tr>
<td>j. S: Yah</td>
<td></td>
</tr>
<tr>
<td>CONVERSATION A</td>
<td>CONVERSATION B</td>
</tr>
<tr>
<td><strong>Student-Student Interaction</strong> (Medication preparation)</td>
<td><strong>Nurse-Patient Role Play Interaction</strong> (At the patient bedside)</td>
</tr>
<tr>
<td>k. ChN: right. It should be less. Can you check um my dilution?</td>
<td>h. RecN: ask if she’s in [(inaudible)</td>
</tr>
<tr>
<td>l. SecN: Which one is it?</td>
<td></td>
</tr>
<tr>
<td>m. ChN: The [morphine</td>
<td></td>
</tr>
<tr>
<td>n. SecN: [morphine</td>
<td>h. RecN: ask if she’s in [(inaudible)</td>
</tr>
<tr>
<td>o. SecN: Is it 30mg/ml?</td>
<td></td>
</tr>
<tr>
<td>p. ChN: [There is (..) 10mg/ml</td>
<td>i. PriN: [Could you please tell me your name?</td>
</tr>
<tr>
<td>q. Ss: [inaudible</td>
<td>j. TPat: [My name is Amanda</td>
</tr>
</tbody>
</table>
transcripts here. The conclusion of this five-minute period is shown in Chapter 3, Example 3 revealing the Recorder Nurse and the Observer Nurse have both joined the Second Nurse and the Charge Nurse in the medication calculation task. Eventually, the Primary Nurse finishes the conversation with the patient and also joins the other four students. It is the Primary Nurse’s question regarding the medication calculation that resulted in the final consensus among the students regarding the correct morphine dose (see Chapter 3, Example 3, lines e-n).

**DISCOURSE OBSERVATIONS: TABLE 1**

Three distinct types of interaction are seen in this example: teacher-nurse, student-student, and nurse-patient role-play. There is no moment during the Table 1 (p. 42) transcript when the student-student interaction ceases. Which students are engaged in whispered student-student interaction changes, but their interaction in lowered voices continues throughout this transcript. Also there is audible conversation throughout this transcript. First the teacher speaks to the Charge Nurse and subsequently the Primary Nurse speaks audibly with the patient. There is a clear audible conversation string, and a covert, whispered conversation thread that are both maintained throughout Table 1 (p. 42). The participants are leaving conversational space between these two overlapping, yet parallel conversations, and it appears this allows the students to participate in both conversations as needed. The teacher however, is only able to hear and participate in the audible conversations. Apparently, the participants have decided that both an audible, and a whispered conversation are needed for this part of the nursing simulation scenario.

**COLLECTIVE TEACHER-STUDENT INTERACTION AND STUDENT-STUDENT INTERACTION DISCOURSE**

The second pair of conversational sequences to be considered occurred as the teacher was talking collectively with the students. Again, there is expert-novice guided participation, as well as the kind of novice-led guided participation described by Radziszewska and Rogoff (1991). As the students are guided in their thinking by the expertise of the teacher, they continue to consult in whispers. They freely talk in whispers while the teacher is speaking. There is a sequence of teacher-student interaction that intersects and overlaps with a student-student interaction sequence. The setting for this sequence could best be described as a team
huddle similar to that seen in football games. All five students are grouped around the teacher and standing within 1-3 feet of her. There is a teacher-student dialogue shown as Conversation A and a parallel student-student interaction shown as Conversation B. This sequence occurred in conjunction with Example 2 from Chapter 3. This is the teacher-student sequence that involved the teacher interacting with the whole group of students as she drew their attention to the question of equipment sterility and helped them completing the medication preparation. Table 2 shows the interaction.

**Table 2. Teacher-Student and Student-Student Interaction: Parallel Sequences**

<table>
<thead>
<tr>
<th></th>
<th>CONVERSATION A</th>
<th>CONVERSATION B</th>
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</thead>
<tbody>
<tr>
<td><strong>Teacher-Student Interaction</strong></td>
<td><em>(Medication preparation)</em></td>
<td><strong>Student-Student Interaction</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>(Medication preparation)</em></td>
</tr>
<tr>
<td>l. T:  because you have to really keep your eye on that so um (..) I think we need another syringe. But in real life if this was contaminated, what we would have to do because this is a narcotic (..) [it would either have to be wasted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m. ObsN:</td>
<td><em>we would</em></td>
<td></td>
</tr>
<tr>
<td>n. T:  or there would have to be another way to extract it, which, there would be another way to [extract it.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o. RecN:</td>
<td><em>extract it</em></td>
<td></td>
</tr>
<tr>
<td>p. ChN:</td>
<td><em>Yah</em></td>
<td></td>
</tr>
<tr>
<td>q. T:  There’s a rubber stopper there so you could swab that um and then take a sterile syringe and then draw out what you need</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Teacher-Student Interaction</strong></td>
<td><em>(Medication preparation)</em></td>
<td><strong>Student-Student Interaction</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>(Medication preparation)</em></td>
</tr>
<tr>
<td>a. Ss: inaudible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. SecN: <em>Where would we put it if it’s an IV push?</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r. T:  Well once you have it in your syringe remember most syringes</td>
<td></td>
<td></td>
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</tbody>
</table>

*(table continues)*
At line (q) Conversation-A, the teacher removes the tip of the syringe revealing that it is removable, and that there is a rubber stopper beneath the tip. At line (b), Conversation B, the Second Nurse asks a question in a whisper. Because she has whispered it, it seems she is not directing it to the teacher. The teacher hears the question though, because all the students are standing close to her. The teacher begins to answer the question of the Second Nurse in line (r), Conversation A. Then in line (c), Conversation B the Charge Nurse gives a reply seemingly to the Second Nurse’s question. The student-student interaction in Conversation B is related to the topic of Conversation A, but it is not really on the topic. Even as the teacher is directing this portion, the students in the Charge Nurse and Second Nurse roles engage in a sequence about this topic lines (b-c). They are talking about the actual mechanics of giving the IV push morphine. They have gone forward in their thinking to the next step of the medication administration process. Once the correct amount of medication is drawn up, the logistics of administering it are the next step. Finally, lines (v-w) demonstrate that the students do understand the situation regarding the questionable sterility of the equipment, and

<table>
<thead>
<tr>
<th>CONVERSATION A</th>
<th>CONVERSATION B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher-Student Interaction (Medication preparation)</td>
<td>Student-Student Interaction (Medication preparation)</td>
</tr>
<tr>
<td>s. T: This is an insulin syringe, right?</td>
<td>c. ChN: Oh yah we can take it off and turn it into an IV push (.) right?</td>
</tr>
<tr>
<td>t. ChN: uHmm</td>
<td></td>
</tr>
<tr>
<td>u. T: So the needle is fixed and you can’t do anything about that needle, it’s always there. But if you drew it into a syringe like this (.) or</td>
<td></td>
</tr>
<tr>
<td>v. S: Oh</td>
<td></td>
</tr>
<tr>
<td>w. S: Oh yeah ↑</td>
<td></td>
</tr>
<tr>
<td>x. T: or a syringe that wasn’t an insulin syringe. Do we have one of those 1ml syringes that’s not an insulin syringe?</td>
<td></td>
</tr>
<tr>
<td>y. ChN: I think I used it.</td>
<td></td>
</tr>
</tbody>
</table>
now recognize how to proceed to protect the patient and ensure she receives a sterile dose of morphine.

**DISCOURSE OBSERVATIONS: TABLE 2**

The teacher-student interaction in Table 2 (p. 44-45) demonstrates expert-novice guided participation as the students receive instruction from the teacher. The students and teacher are working together on the task. The students speak in lowered voices, trying to gain greater understanding of the situation in a way similar to the “interactional reading” described by Sterponi (2007). They are freely talking in whispers while the teacher is speaking. Although the students are all standing very close to the teacher every comment they make is whispered, suggesting that they are not engaging in conversation with the teacher. Their lowered volume indicates they are stepping outside the role-play for a moment. Their comments are not actually covert in this example, as the teacher hears them, but knows they are not directly talking to her. Their comments rather seem like they are talking to themselves. In lines (m), and (o), the Observer Nurse and the Recorder Nurse respectively make whispered comments to themselves related to what the teacher is saying. Then in line (b), Conversation B, it is not clear who the Second Nurse is directing her question to, and the Charge Nurse’s reply in line (c) although related to the topic of the Second Nurse’s comment of line (b), doesn’t really seem like it was intended to answer the question the Second Nurse asked. Instead the Charge Nurse appears to be experiencing an “ah-ha” moment because of what the teacher said in line (r) of Conversation A. What the teacher said made the Charge Nurse realize that the device (or needle) used to withdraw medication from a vial would be removable from the syringe and the tip of the syringe could be used to connect to the patient’s IV line.

The whispered comments of the students made in lowered voices that aren’t clearly connected as part of a dialogue, seem more like “private speech,” which was first described by Vygotsky (1978) as “a unique form of internal collaboration with oneself” (p. 273). It is “speech-for-the-self, a type of interpersonal speech, as opposed to speech intended for others. It is a form of externalized self-directed speech that appears, for example when we ask ourselves questions and answer them” (Lee, 2008, p. 169). This “self-guidance” is the “central function of private speech” (Berk, 1994, p. 80). Further, Berk noted from her study,
“whenever we encounter unfamiliar activities in our lives, private speech resurfaces. It is a tool that helps us overcome obstacles and acquire new skills” (p. 80). Additionally, Healy (1990) found that “children who use inner speech effectively can remember information and events better. They are better at problem-solving because they can “talk through” steps, evaluate alternatives, and speculate about possible outcomes” (p. 185). So, private speech is useful for self-guidance to handle challenging tasks, and it has been observed that “private speech diminishes as performance improves” (Berk, 1994, p. 81).

A second look at Table 2 (p. 44-45) reveals that these student statements are not that clearly related to each other. The four students who have made these whispered comments in this segment were all intently working on the medication calculation just prior to this sequence (Chapter 3, Example 3). Only the Primary Nurse makes no whispered comment in this example. However, she had just been talking to the patient while the other four were doing the medication calculation (Example 1 line (i), Conversation B). When she joined the other four, (Chapter 3, Example 3, line (e), she just asked them to show her their calculation. It seems she does not whisper because she has not been involved in the intense thinking the other four have just completed, and thus does not perceive the situation as being as stressful as the other students did.

This segment of parallel conversations reveals the role-play of the scenario being suspended for an instructional segment. There is a prominent, audible conversation thread that is unbroken, and an intermittent whispered conversation thread, as the students are doing more listening in this segment than seen in the Example 1 transcript. All the students are learning important content from the guidance of the teacher related to keeping equipment sterile in the medication preparation process, as well as mechanical aspects of preparing the medication for administration. The student-student interaction is seen continuing as the teacher speaks to the students both individually (Example 1, lines (b-h), Conversation A), and collectively (Example 2, lines (l-s). There is evidence of learning in the comment of the Charge Nurse in Example 2, line (c), Conversation B, as well as the collective comments of the students in lines (v-w), Conversation A. It is also possible that the other students who heard the verbal comments of their classmates may have gained understanding through the comments.
NURSE-PATIENT ROLE PLAY INTERACTION AND
STUDENT-STUDENT INTERACTION DISCOURSE

The third discourse segment to be examined illustrates three parallel conversations, one episode of nurse-patient interaction, and two separate student-student sequences all of which transpired simultaneously. The student-student interaction in this sequence is more dominant than in previous examples. It is maintained while the audible conversation thread is not, suggesting that the students view it as essential for this circumstance. There are no overlapping utterances in this segment, so all participants can hear and join in any of the three conversations.

During this interaction, the teacher speaks for the voice of the patient placing the students in a leadership role in the scenario; as such they become the RNs functioning in that professional role. Each student has a different experience stepping into that leadership position in simulation based on the role they were randomly assigned. The Charge Nurse and the Second Nurse have the roles requiring the most interaction with medication preparation and administration. The Primary Nurse has the most overt responsibility, and is most involved with the physical assessment of the patient. The Recorder Nurse and the Observer Nurse have the opportunity to stand back, take in the big picture, and provide insight for the other students. Although the Primary Nurse is the assigned leader, the Recorder Nurse can be seen acting as the informal leader. The other students consult her suggesting that they believe she has the most content knowledge. Her recommendations reflect that she is the more knowledgeable peer.

In sum, the students are the decision makers. They have the responsibility to effectively care for and interact with the patient. In this way they experience the kind of “legitimate peripheral participation” described by Lave and Wenger (1991). Furthermore, in this segment the novice-led guided participation is more readily observed, as there are no opposing audible conversation threads.

The setting for this interactional sequence includes the Charge Nurse and the Second Nurse directly next to the patient. The Primary Nurse and the Recorder Nurse are near the foot of the patient’s bed, about 4-5 feet away from the Charge Nurse and the Second Nurse. The teacher and the Observer Nurse are about 8 feet away from the patient. The teacher uses a remote microphone when speaking as the patient voice, so it seems the voice comes from
the patient. The students speaking in Conversation A and Conversation B are directly beside the patient except for the Recorder who joins Conversation B and is standing about 4-5 feet away from the students who are at the patient bedside. The students in Conversation C are standing at the whiteboard about 4-5 feet from the other students. Figure 3 displays their locations. It is not drawn to scale.

**Figure 3. Nurse-patient role play and student-student interaction setting.**

The Charge Nurse begins the segment talking to the patient shown in Conversation A. The student-student sequences are shown in Conversations B, and C. Table 3 shows these parallel interactions.

As the Charge Nurse and the Second Nurse give the medication in Conversation A, the students are whispering at the patient bedside, lines (a-r), Conversation B. In fact, they are actually whispering in front of the patient. Lines (a, b, d, and e) of Conversation B appear to be private speech as each student seems to be speaking mainly to herself. Together their comments merely describe what is happening. The students making these comments are the Charge Nurse, and Second Nurse. The Charge Nurse speaks to the patient only intermittently during this task, lines (k, m, o), Conversation A. In contrast to the private speech, of
Table 3. Nurse-Patient Role-play and Student-Student Interaction: Parallel Sequences

<table>
<thead>
<tr>
<th>CONVERSATION A</th>
<th>CONVERSATION B</th>
<th>CONVERSATION C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse-Patient Interaction</td>
<td>Student-Student Interaction</td>
<td>Student-Student Interaction</td>
</tr>
<tr>
<td>Talking to the patient (Second Nurse &amp; Charge Nurse)</td>
<td>Talking at the patient’s bedside (Second Nurse, Recorder Nurse &amp; Charge Nurse)</td>
<td>Talking away from the patient (Recorder Nurse &amp; Primary Nurse)</td>
</tr>
<tr>
<td>a. ChN: Hi I finally have your morphine.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Ss: laughs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. TPat: OK, good I’m glad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. ChN: Sorry about the wait, we were trying to figure it out [first.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. TPat: ok</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. ChN: Can you tell me your birth date?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. TPat: July 13th, 1931</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. ChN: OK, great</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. S: [inaudible)] a. ChN: [So I will do this flush (..)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CONVERSATION A | CONVERSATION B | CONVERSATION C
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Talking to the patient (Second Nurse &amp; Charge Nurse)</td>
<td>Talking at the patient’s bedside (Second Nurse, Recorder Nurse &amp; Charge Nurse)</td>
<td>Talking away from the patient (Recorder Nurse &amp; Primary Nurse)</td>
</tr>
<tr>
<td>b. SecN: first swab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. RecN: there you go</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. ChN: so swab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. SecN: Then, essentially this would have been sterile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. S: inaudible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>k. ChN: so just a little poke</td>
<td></td>
<td></td>
</tr>
<tr>
<td>l. TPat: that feels kinda cold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m. ChN: OK, Now we’re gonna give you the med</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n. TPat: OK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. SecN: Oh, where is it?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(table continues)
Table 3. (continued)

<table>
<thead>
<tr>
<th>CONVERSATION A</th>
<th>CONVERSATION B</th>
<th>CONVERSATION C</th>
</tr>
</thead>
</table>
| Talking to the patient  
(Second Nurse & Charge Nurse) | Talking at the patient’s bedside  
(Second Nurse, Recorder Nurse & Charge Nurse) | Talking away from the patient  
(Recorder Nurse & Primary Nurse) |
| h. SecN: OK so we would give an IV push in about 2 minutes or 5, 15 seconds? | | |
| i. RecN: 2 minutes | | |
| o. ChN: OK so here comes your med | | |
| p. TPat: OK | | |
| j. SecN: OK | | |
| k. ChN: OK, that’s flushed right in | a. RecN: (inaudible) she use the restroom? | |
| b. PriN: I helped her do that | | |
| l. ChN: OK | | |
| q. TPat: You know I don’t think I have cancer. I think the doctor made a mistake. | | |

<table>
<thead>
<tr>
<th>CONVERSATION A</th>
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<th>CONVERSATION C</th>
</tr>
</thead>
</table>
| Talking to the patient  
(Second Nurse & Charge Nurse) | Talking at the patient’s bedside  
(Second Nurse, Recorder Nurse & Charge Nurse) | Talking away from the patient  
(Recorder Nurse & Primary Nurse) |
| m. SecN: Ok, positive pressure | | |
| n. ChN: Yah, alright when you push in lock it up | | |
| o. SecN: what with the med or the | | |
| p. RecN: no as you were pushing it in, as you were pushing it in | | |

(table continues)
Table 3. (continued)

<table>
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<tr>
<th>CONVERSATION A</th>
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<tbody>
<tr>
<td>Talking to the patient (Second Nurse &amp; Charge Nurse)</td>
<td>Talking at the patient’s bedside (Second Nurse, Recorder Nurse &amp; Charge Nurse)</td>
<td>Talking away from the patient (Recorder Nurse &amp; Primary Nurse)</td>
</tr>
<tr>
<td>q. SecN: want to lock it first and then put positive pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>r. ChN: OK good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>r. SecN: Alrighty how are you feeling right now?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>s. TPat: Well, I still feel pain but I’m not so much nauseated anymore.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t. ChN: OK [good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>u. Ss: [good</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

lines (a, b, d, and e) of Conversation B, lines (h-r) appear to be a consultation. They consult each other regarding the speed over which the medication should be given, lines (h-j), and the mechanics of giving it, lines (k-r).

Following the comment in line (k) Conversation B, both the Recorder Nurse and the Teacher separately attempt to introduce new topics. In line (a), Conversation C, the Recorder Nurse asks in an audible voice for more information for her written record, to which the Primary Nurse replies. Then, in line (q), Conversation A, the teacher also speaking audibly as the patient makes a comment. But, the Second Nurse and the Charge Nurse are not quite finished with flushing the saline behind the medication, so they do not respond to these two attempts to engage them in dialogue. Concentrating on their task, they are oblivious to these other attempts to begin a new conversation topic. It is appropriate for them to block out the distraction of the other attempts at dialogue in order to safely complete the medication administration task. When they have finished, they return talking to the patient without addressing the patient’s previous comment of line (q).

During the administration of the morphine, the students who should be replying to the patient’s comment are intensely focused on the task, to the point that when the patient stated, “You know I don’t think I have cancer. I think the doctor made a mistake,” (line q,
Conversation A.), they did not even respond to her. It is possible they did not even hear her comment. The Recorder Nurse and the Primary Nurse clearly heard it, though, as they reported it to the Nurse Practitioner later.

**DISCOURSE OBSERVATIONS: TABLE 3**

This parallel interaction demonstrates that periods occur where the fully audible conversation thread is absent. However, the whispered conversation string is sustained almost unbroken throughout. The students are consulting in lowered voices, trying to gain greater understanding of the situation in a way similar to the “interactional reading” described by Sterponi (2007). They demonstrate private speech, (Vygotsky, 1978) as well as novice-led guided participation (Radzisewska & Rogoff, 1991) as they collaborate with each other.

The student-student interaction is even more prominent in this transcript than in the other examples, indicating that the participants find it to be the fundamental discourse needed in nursing simulation. They ensure that it is present and maintained. There are no instances of overlapping speech in this transcript, thus all participants are able to hear and participate in any of the three conversation threads.

Students have a different experience in the nursing simulation scenario based on their randomly assigned roles. As noted previously and by the accompanying documents in Appendices (B), (C), (D), and (E), the simulation is a structured scenario, though how exactly it will unfold and who will say what is not scripted. The interactive nature of simulation is such that each participant can influence the path it takes. For example, the students in Example 3, Chapter 3, decided to give the IV morphine for the patient’s pain rather than opting to give the oral medication. Although the Primary Nurse was the assigned leader, the Recorder Nurse tended to be the “more knowledgeable peer,” who influenced the scenario significantly described by (Radzisewska & Rogoff, 1991). She gave the answers in Example 3, lines (i and p), Conversation B. She was also the one they consulted about the patient’s pain and she recommended giving the patient IV morphine (Chapter 3, Example 5, line q.), which was the best choice, based on the severity of the pain and the patient’s recent nausea.
As the Charge Nurse speaks to the patient in lines (a-p), Conversation A, she experiences first hand being the RN giving the pain medication to the patient, an authentic instance of the kind of legitimate peripheral participation described by Lave and Wenger (1991). She is the only student speaking as the RN at this point, but the other students who are providing novice-led guided participation for her are also experiencing legitimate peripheral participation in a more vicarious way.

**HEALTHCARE PROVIDER-NURSE ROLE PLAY INTERACTION AND STUDENT-STUDENT INTERACTION DISCOURSE**

The only time in the entire nursing simulation scenario the students are not seen whispering or consulting each other is during the healthcare provider visit. There are several possible factors that may be influencing the fact the student-student interaction is silenced during the healthcare provider visit. Perhaps because the students are being asked to give a report of their findings, they must all listen to what is being said to ensure that all the findings are correctly stated for the healthcare provider. In addition, possibly, because the healthcare provider is a complete stranger to the students, she may exert more authority as a result. Thirdly, the nature of the healthcare provider’s questioning techniques that exert authority (Heritage & Sorjonen, 1994; Turner, 2009) may be the reason why the student-student interaction is silenced.

**SUMMARY**

These examples of parallel sequences display instances of student-student interaction alongside of the teacher-nurse interaction, teacher-student interaction, and nurse-patient interaction, revealing that it is not just prevalent in the nursing simulation discourse, but it is pervasive. The whispering continues while the teacher is talking, not only as she speaks individually to the Charge Nurse, but also as she speaks collectively to the entire group of students. Only the healthcare provider silences the student-student interaction. Thus, the student-student interaction is the most pervasive type of discourse in the nursing simulation and as such certainly has a significant influence on the nature of the learning that is taking place.
The students are collaborating with each other and the more knowledgeable peer(s) are providing guided participation for the less knowledgeable, as described by Radzisewska and Rogoff (1991). Because of the more knowledgeable peer(s), the students are able to provide better nursing judgment and care for the patient as a team than they would be able to accomplish independently. Their zone of proximal development (ZPD) for the nursing task is being enlarged under the expert guidance of the teacher, and through peer collaboration not only for the knowledgeable, but also particularly so for the less knowledgeable. As the knowledgeable state what they know, their knowledge is reinforced. As the less knowledgeable receive guidance from the more knowledgeable peer(s) they are drawn toward understanding that increased knowledge level. Also, perhaps the “private speech” (Vygotsky, 1978) represents evidence of the ZPD being enlarged.
CHAPTER 5

DISCUSSION, CONCLUSION AND IMPLICATIONS

This chapter will discuss the findings of Chapters 3 and 4 and identify potential implications for education and research. The five different discourse situations: teacher-nurse, teacher-student, student-student, nurse-patient, and healthcare provider-nurse interaction offer the students multiple, varied learning opportunities some of which are only available to them during the nursing simulation experience of their baccalaureate nursing curriculum. The nursing simulation yielded expert-novice guided participation through teacher-nurse, teacher-student, and healthcare provider-nurse interactions; novice-led guided participation through student-student interactions; and professional role socialization through nurse-patient, healthcare provider-nurse, and student-student interactions. The implications of the forms of guided participation and of professional role socialization will be discussed further.

EXPERT-NOVICE GUIDED PARTICIPATION

In the nursing simulation, the teacher-nurse and teacher-student interaction revealed intermittent instances of expert-novice guided participation. The teacher makes the choice of when to step in and provide this expertise. This is an important decision. For the moment the expert steps forward, the novices begin relying on the teacher’s knowledge rather than thinking it through on their own. The teacher becomes the initiator and creates the ZPD to be focused on. For example, the teacher stepped in to question the sterility of the equipment, (Chapter 3, Example 2; Chapter 4, Example 2) and to assist the students with medication preparation. For these nursing simulation students the ZPD is their growing knowledge of the nursing process. As the teacher provides expert-novice guided participation, learning is taking place for the students but they are not seeking it in the same manner as when they are the initiators.
However, the students are able to achieve more with support from the teacher. Radziszewska and Rogoff (1991) showed that students achieved optimal decision-making through guided participation with the expert, rather than through the more knowledgeable peer. Thus, it is beneficial for the teacher to both allow the students to lead as much of the scenario as they can, as well as, to step in, and provide guidance when the student decision-making appears weak, or important details are overlooked. The students are expanding their ZPD under the expert-novice guided participation of the teacher and the healthcare provider.

The teacher faces a dilemma here. She must discern when it is best to sit back and let the students lead the scenario, and when it is best to step in. For, while the students lead the scenario, they are basically learning implicitly. When the teacher steps in, their learning becomes explicit.

**NOVICE-LED GUIDED PARTICIPATION**

The student-student interaction of the nursing simulation is the most pervasive type of interaction. Even when the teacher is speaking in the teacher-nurse and teacher-student interaction, the student-student interaction continues. It ceased only during the healthcare provider-nurse interaction. The students are constantly conferring with one another.

The typical IRE sequence was not found in the nursing simulation transcript of teacher-nurse or teacher-student interactions. In fact, the nursing simulation context seems to make it very easy for the teacher to step out of the traditional teacher-student IRE discourse pattern. Then, as this occurs, the students begin to determine the discourse content of the simulation. For example, in Chapter 3, after the Charge Nurse seeks consultation from the Second Nurse, an extensive student-student sequence occurs as the group of students collaborated on the medication calculation. Hence, though there may be a strong tendency on the part of both teacher and students to gravitate toward the traditional IRE sequence, simulation seems to suppress it.

As the teacher remains silent, the students step forward as initiators of their own learning. Poole and Patthey-Chavez (1994) also describe such a situation suggesting that as the students initiate learning, they are “identifying and creating zones of proximal development (ZPDs)” (p. 30). As the students take the initiator role in the simulation, they create the ZPD for the elements of the nursing process on which they are focusing, such as
post-operative pain management. In taking the initiator role, the students’ influence on the growth of their ZPDs greatly increases. They may be more receptive to learning and more highly motivated because they, rather than the teacher, initiated the ZPD.

As Poole and Patthey-Chavez (1994) also state, “the expert is a necessary contributor, but not the one who identifies what is to be learned” (p.30). In the nursing simulation, as the students identify what they need to focus on (or learn), they create the ZPD they are working on. Then as the teacher steps into the ZPD which the students created, perhaps the students may be more receptive to the expert-novice guided participation the teacher gives. The teacher’s expertise is necessary to guide the students when their knowledge is deficient. When the teacher doesn’t step in, they experience continued novice-led guided participation. The more knowledgeable peer(s) expand their ZPD by assisting the less knowledgeable, sharing their knowledge and reinforcing what they already know. The less knowledgeable expand their ZPD through assistance from the more knowledgeable, so that, together all the students are moving closer to the goal of full nursing knowledge.

Although Ochs et al. (1979) noted children learned how to articulate propositions using “overt syntactic means” (p. 251) “by participating in a sequence in which they contribute a component of the proposition” (p. 268). It was seen in Chapter 3, Examples 1 and 3, that the Charge Nurse contributed a portion the proposition regarding the correct amount of morphine to draw up for the patient. She was able to do this because of the guided participation she received from the teacher as well as her peers. Further, in student-student interaction, the students stated entire propositions related to the nursing care of the patient. Perhaps verbalizing the nursing care in this manner contributes to the growth of their ZPD. The student voices are pervasive throughout the nursing simulation transcript. Student-student interaction is the most common kind of interaction. Moreover, the presence of “private speech” (Vygotsky, 1978) may be yet an additional indicator that the students’ ZPD for the nursing process is being expanded. These may all be reasons that explain the fact that Rauen (2004) reported instructors and students found simulation increased “acquisition and retention of knowledge, and sharpened critical-thinking and psychomotor skills” (p. 50). The instructors and students in her study inherently knew simulation enlarged their ZPD not only for the psychomotor skills and knowledge as subsequently confirmed by Alinier et al. (2006), and Gates et al. (2010), but also for critical thinking.
JOINING THE PROFESSIONAL RN COMMUNITY

The nursing students are seeking to join the “community of practice” of professional nurses. Nursing simulation gives them unique opportunities to step into the RN role in a safe environment. Here they are the knowledgeable experts speaking to the patient in the nurse-patient interaction. They are not mere students when they speak to the simulated patient, as they are when they work under supervision in the hospital with a live patient. But in simulation, they are the actual nurses for this patient. They speak to the patient and assess the patient’s pain. Then using student-student interaction, they collectively decide to give the IV morphine for the patient’s pain. They are learning to speak in the language of their profession and to explain themselves to their patient. They collaborate with each other again using student-student interaction during the medication preparation. Each time they consult with each other or with the teacher during the nursing simulation serves to develop within them the habit of colleague consultation.

Finally, they have the opportunity to report their assessment findings to the healthcare provider and receive feedback. The healthcare provider-nurse interaction is the only interaction found in the nursing simulation that bore a resemblance to traditional classroom discourse structure. However, it offered the students a unique opportunity with the professional RN role that neither a traditional classroom, nor a real hospital could offer. Simulation can thus be seen to offer the students a virtual experience as novice RNs interacting with more experienced RNs (the teacher and the healthcare provider) in a clinical setting which allows them “to understand it, to participate in it, and to become full members of the community” (Lave & Wenger, 1991, p.115).

PEDAGOGICAL IMPLICATIONS

Simulation in the nursing curriculum setting affords nursing students opportunities to test out their clinical decision-making skills in the safety of the scenario. As they make the decisions caring for the patient, they encounter the outcomes of their decisions. They may see beneficial patient outcomes as well as detrimental patient outcomes, depending on the decisions they make. Simulation offers the students a valuable learning experience not available to them in traditional classrooms or as nursing students in a hospital setting.
The implications of this research related to nursing simulation suggests teachers exercise great care when interrupting the student-student interaction as the learning environment for the ZPD the students are working on will be altered by the teacher’s involvement. As the teacher begins providing expert-novice guided participation, the students stop trying to think it out on their own, but rather begin relying on the teacher’s knowledge. Because they will be able to achieve more with the teacher’s expert guidance than they can achieve alone, the teacher must be ready to become involved when the student decision-making is weak, deficient, errant, or when important details are being overlooked. But when the student decision-making is good, the teacher can refrain from interrupting the student-student interaction. In the student-student interaction, the students have created the ZPD they are working on. They are motivated to work on this ZPD relative to their task. As they work together, they reinforce each other’s knowledge. The more knowledgeable peer(s) provide guided participation for the less knowledgeable peer(s). They are able to state propositions of nursing care for the patient and make clinical care decisions for the patient without prompting. Since the ultimate goal of nursing education is for the students to function independently as professional nurses, simulation provides an educational modality that assists the student in gaining foundational nursing knowledge necessary to function independently.

**Future Research**

This study is an initial description of the interaction found in a nursing simulation. It involved one teacher and one group of students at one university. It would be valuable to validate the findings of this study with a larger group. This study found the teacher used few if any E-turns characteristic of traditional classroom IRE discourse. Rather she used declarative and reflective statements, invitations to elaborate, and silence, which were seen to facilitate student participation. Additionally, through both teacher and student contributions, the interaction focused on in this study consistently revealed instances of “guided participation” (Radziszewska & Rogoff, 1991). It would thus be useful to know if this kind of interactional structure is common in other contexts of simulation.

It would also be important to know if the whispered student-student interaction remains prominent, revealing “guided participation” (Radziszewska & Rogoff, 1991), the
presence of “private speech” (Vygotsky, 1978), and verbalization of propositions (Ochs et al., 1979) similar to that seen in this study. This study also observed students creating the ZPD for their tasks. It would be beneficial for future studies to analyze the relationship between these elements of student-student interaction to discern the influence on enlargement of the ZPD, relative to the students’ critical thinking and decision-making.

Additionally, the teacher has a dilemma regarding when to step into the simulation and when to sit back and let the students lead the scenario. Hence, it would be beneficial for future research to address this dilemma. This study involved a group of students that contained a more knowledgeable peer, but not all simulation groups include a student with such good knowledge. It would be beneficial to investigate other scenarios to look at what is happening in the discourse when all the students reach a point of not knowing what to do.

To conclude, this study has described a variety of discourse situations found in nursing simulation. Simulation offers a situation that suppresses the traditional IRE sequence and gives voice to the student. It makes it easy for the teacher to refrain from the use of evaluative comments, using instead declarative statements, reflective statements, invitations to elaborate, and silence. There is opportunity for learning to be novice-led as the students contribute significant portions of the nursing care without prompting, potentially increasing their critical thinking and decision-making ability. Intermittently the teacher provides expertise at the point of the learners’ need. As the examples of Chapter 3 were viewed in the context of other, co-occurring conversations in Chapter 4, more instances of “guided participation” (Radzisewska & Rogoff, 1991) were seen, revealing that guided participation is the fundamental methodology of learning found in nursing simulation. Finally, simulation is a safe environment for “legitimate peripheral participation” (Lave & Wenger, 1991, p. 29) as students take on the RN role thus acquiring elements of professional acumen.
REFERENCES


APPENDIX A

CONSENT FOR VIDEOTAPING
Assignment and Release

Re: Motion Picture, Web and/ or Television Rights

The undersigned hereby grants, assigns and conveys to School of Nursing SDSU, all of the right, title and interest of the undersigned in and to any still and motion pictures and/or television recordings made or produced in connection with or incidental to SIMULATION

The undersigned, moreover, for and in consideration of the grant of permission to participate in the above-described activity, hereby irrevocably authorizes School of Nursing SDSU, and its agents and assign, without limitation, to reproduce, copy, broadcast, telecast, distribute, publish and/or exhibit said still or motion picture and/or television and/or sound recordings at all times and at all places throughout the world and to secure in its own name and at its discretion any and all common law rights, copyrights, and the right to secure statutory copyrights and renewals thereof in the United States and throughout the world.

Dated ______________________

Signed ______________________

Print Name: ______________________________
APPENDIX B

SCENARIO FACULTY COPY
## Simulated Clinical Experience (SCE™) Overview

**Scenario File Name:** EA Post Gastrectomy  
**Overlay on:** Standard Granny  
**Location:** Medical-Surgical Unit

### Synopsis:
In this simulated clinical experience, learners conduct a basic physical assessment of a three-day postoperative partial gastrectomy patient. The patient exhibits five abnormal assessment findings for learners to identify and document, including absent bowel sounds, hypertension, irregularly irregular heart rhythm, an abdominal dressing, and dependent edema. The scenario has one continuous state. The simulated clinical experience also consists of a psychosocial element, which the instructor may elect to incorporate and is intended for the learner in Seminar I.

### History/Information:
This patient is a 76-year-old female whose chief complaint at her healthcare provider's office was frequent dyspepsia and epigastric pain relieved by antacids. She also complained of rapid weight loss and feeling fatigued. After a series of tests, a biopsy was performed which confirmed gastric cancer. A partial gastrectomy was performed three days ago to remove the cancerous lesion. She is exhibiting signs of depression because of her recent diagnosis.

**Health history:** Chronic gastritis, pernicious anemia

### Healthcare Provider's Orders:
- **Digoxin 0.25mg PO every day**
- **Heparin 5,000 units SQ every day**
- **Oxycodeone 5mg/acetaminophen 325mg 1-2 tabs PO every three to four hours pm pain**
- **Meperidine 25mg IM every four to six hours pm for severe pain**
- **Promethazine 25mg IM every four to six hours pm nausea**
- **Gastrolok**
- **Post-gastrectomy clear liquid diet advance to full liquid as tolerated**
- **Physical therapy for strengthening**
- **Compression hose or sequential compression device (SCD)**
- **Oxygen at 2-4 LPM via nasal cannula to maintain SpO2 greater than 94%**
- **Intake and Output every shift**
- **Incentive spirometer every two hours while awake**
- **Ambulate with assist**
- **PTT daily and notify physician of results**

---

## Learning Objectives/Questions

1. Performs an accurate basic physical assessment of the post-operative patient (APPLICATION).  
2. Identifies normal and abnormal assessment findings (APPLICATION).  
3. Documents normal and abnormal assessment findings in relation to the post-gastrectomy patient (APPLICATION).  
4. Discusses significance of abnormal assessment findings (ANALYSIS).  
5. Identifies strategies for assessing signs of grief (APPLICATION).

### Questions to Prepare for the Simulated Clinical Experience:
1. What are the steps to complete a physical assessment?  
2. What body systems should the nurse focus on in the assessment of a postoperative gastrectomy patient?  
3. What should the nurse do if an abnormal finding has been assessed?  
4. What is the difference between normal, abnormal and significant findings?  
5. Describe the differences between serous, serosanguineous, and sanguineous drainage.  
6. What is the correct technique for grading edema? Describe each grade of edema.  
7. What would be strategies a nurse could use to assist the patient to cope with a new diagnosis?  
8. Define each stage of grief and identify nursing interventions for each stage.
### Suggested Equipment, Supplies, and Simulator Setup

<table>
<thead>
<tr>
<th>Category</th>
<th>Item Description</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>Medication Supplies</td>
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<td>Saline lock</td>
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</tr>
<tr>
<td></td>
<td>Transparent dressing</td>
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</tr>
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<td>Miscellaneus</td>
<td>BP cuff adapted for use with simulator</td>
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<tr>
<td></td>
<td>Patient ID band</td>
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</tr>
<tr>
<td></td>
<td>Antibiotics - Blue dye or green</td>
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</tr>
<tr>
<td></td>
<td>4 and/or Sequential compression device</td>
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</tr>
<tr>
<td>Oxygen Equipment</td>
<td>Nasal cannula</td>
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</tr>
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<td></td>
<td>Oxygen flowmeter</td>
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<tr>
<td></td>
<td>Oxygen source</td>
<td>1</td>
</tr>
<tr>
<td>Dressing Supplies</td>
<td>4x9 dressing</td>
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<tr>
<td>Genitourinary Supplies</td>
<td>14 Fr urinary catheter with drainage bag</td>
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<td></td>
<td>Sterile water 1000mL with 2mL yellow food</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>coloring for urine source</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- Patient can be alert and oriented or confused based on communication education needs.
- Create edema in legs by wrapping 1/2 inch thick cast padding around feet, ankles, and legs to desired height. Wrap with flesh-colored elastic bandage.
- Apply antihemorrhage hose/ICDs prior to simulation or have learners apply.
- Dilute red food coloring with water to desired color and place or dressings. Allow to dry prior to applying to simulator.
- Add 2mL of yellow food coloring to 1000mL bag of sterile water to simulate urine and attach to the urinary system of the simulator.
- Leave blood pressure cuff off simulator and allow learners to apply correctly.
- Place nasal cannula on patient prior to simulation.
- Inset saline lock and urinary catheter prior to simulation. Place small amount of yellow colored water in bag to simulate urine.
- Have the learners role-play interprofessional communication by reporting the patient's response to interventions. If the data presented is unorganized or missing vital components, have the healthcare provider become inappropriate in response. Emphasize importance of data organization and completeness when communicating.
- Role-play interprofessional communication by having the learner call report to the admitting or transferring unit or have the learner give report to the next shift.
- Do not provide lab results to learners until they request them.
- Learner is expected to integrate consent from science, humanities, and previous nursing courses when preparing for and participating in simulation activities.

### References


## Scenario States

<table>
<thead>
<tr>
<th>State</th>
<th>Events</th>
<th>Minimal Behaviors Expected</th>
<th>Prompts, Questions, and Teaching Points</th>
</tr>
</thead>
</table>
| State #1: Baseline | HR=72-104, irregular; BP=145/65; RR=20; SpO2=94%; Breath Sounds=Clear; Bowel Sounds=Absent; Pupils equal; Abdominal dressing with moderate amount drainage; Heals to answer questions; Wants the curtain closed at all times; Teary eyed; She states "I know the doctor made a mistake and I really don’t have cancer" | • Completes basic physical assessment  
• Assesses abdominal dressing and documents findings  
• Recognizes differences in types of drainage and implications of each  
• Documents findings on graphic and nurse’s notes  
• Recognizes and discusses implications of intermittent pulse deficit bilateral lower legs; abnormal findings  
• Assesses peripheral edema correctly  
• Assesses patient’s emotional status  
• Communicates appropriately using therapeutic communication techniques  
• Identifies stages of grief | What equipment is needed to conduct an assessment of this patient?  
• Stethoscope  
• BP cuff  
• Pulse oximeter  
What are the normal/abnormal findings?  
• Abnormal:  
  - Increased HR, BP  
  - Absent bowel sounds  
  - Tachybradycardia  
  - Lower leg pulses  
• Emotional state  
• Normal:  
  - RR  
  - Moderate amount drainage  
What does the nurse do with significant abnormal findings?  
• Document on medical record  
• Notify healthcare provider  
• Encourage incentive spirometer  
• Encourage verbalization of feelings  
What would the nurse do if the abdominal dressing was soaked with sanguinious fluid?  
• Reinforce dressing  
• Monitor vital signs for signs of shock  
• Notify healthcare provider of increased drainage  
Describe serous, sanguinious, and sanguinious drainage.  
• Serous: thin, yellowish  
• Sanguinious: thin, pink  
• Sanguinious: thicker, red  
How could the nurse assist the patient in coping with her diagnosis?  
• Empathetic active listening  
What stage of the grieving process is the patient experiencing?  
• Denial  
• Refer for supportive care |
APPENDIX C

SCENARIO: STUDENT COPY
Basic Assessment of the Postoperative Gastrectomy Patient

Simulated Clinical Experience (SCE™) Overview

Location: Medical-Surgical Unit

History/Information:
This patient is a 76-year-old female whose chief complaint at her healthcare provider’s office was frequent dyspepsia and epigastric pain relieved by antacids. She also complained of rapid weight loss and feeling fatigued. After a series of tests, a biopsy was performed which confirmed gastric cancer. A partial gastrectomy was performed three days ago to remove the cancerous lesion. She is exhibiting signs of depression because of her recent diagnosis.

Health history: Chronic gastritis, pernicious anemia

Healthcare Provider’s Orders:
- Digoxin 0.25mg PO every day
- Heparin 5,000 units SQ every day
- Oxycodeone 5mg/sustained-release 325mg 1-2 tabs PO every 3-4 hours prn pain
- Meperidine 25mg IM every 4-6 hours prn severe pain
- Promethazine 25mg IM every 4-6 hours prn nausea
- Saline lock
- Post gastrectomy clear liquid diet advance to full liquid as tolerated
- Physical therapy for strengthening
- Compression hose or sequential compression device (SCD)
- Oxygen at 2-4LPM via nasal cannula to maintain SpO2 greater than 94%
- Intake and Output every shift
- Incentive spirometer every 2 hours while awake
- Ambulate with assist
- PTT daily and notify physician of results

Learning Objectives

1. Performs an accurate basic physical assessment of the postoperative patient (APPLICATION).
2. Identifies normal and abnormal assessment findings (APPLICATION).
3. Documents normal and abnormal assessment findings in relation to the post gastrectomy patient (APPLICATION).
4. Discusses significance of abnormal assessment findings (ANALYSIS).
5. Identifies strategies for assessing signs of grief (APPLICATION)
Questions to Prepare for the Simulated Clinical Experience

1. What are the steps to complete a physical assessment?
2. What body systems should the nurse focus on in the assessment of a postoperative gastrectomy patient?
3. What should the nurse do if an abnormal finding has been assessed?
4. What is the difference between normal, abnormal and significant findings?
5. Describe the differences between serous, serosanguineous, and sanguineous drainage.
6. What is the correct technique for grading edema? Describe each grade of edema.
7. What would be strategies a nurse could use to assist the patient to cope with a new diagnosis?
8. Define each stage of grief and identify nursing interventions for each stage.

References


APPENDIX D

DOCTOR’S ORDERS
Brown, Amanda  
MRN: 0798642  
DOB : 7/13/31  
MD: Dr Jenessa Chavez  

Doctor’s Orders  

Date/Time  
04/25/2008  

1. Digoxin 0.25mg PO every day  
2. Heparin 5,000units SQ every day  
3. Oxycodone 5mg/acetaminophen 325mg 1-2 tabs PO every four hours prn pain  
4. Morphine 2mg IVP every 2-3 hours prn for severe pain  
5. Promethazine 25mg IM every four to six hours prn nausea  
6. Saline lock  
7. Post gastrectomy clear liquid diet advance to full liquid as tolerated  
8. Physical therapy for strengthening  
9. Compression hose or sequential compression device (SCD)  
10. Oxygen at 2-4LPM via nasal cannula to maintain SpO2 greater than 94%  
11. Intake and Output every shift  
12. Incentive spirometer every two hours while awake  
13. Ambulate with assist  
14. PTT daily and notify physician of results  

____________________  
J.L. Chavez MD
APPENDIX E

MEDICATION ADMINISTRATION RECORD
(MAR)
Brown, Amanda  
MRN: 0798642  
DOB: 7/13/31  
MD: Dr Jenessa Chavez  

Allergies: __NKDA__

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<tbody>
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<td>Digoxin 0.25mg orally daily</td>
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<td></td>
</tr>
<tr>
<td>Promethazine 25mg IM Q 4-6 hours prn nausea</td>
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<tr>
<td>Heparin 5000 units SQ daily</td>
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<tr>
<td>Oxycodone 5mg/Acetaminophen 325 mg oral, 1-2 tabs po, Q 4h PRN pain</td>
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</tbody>
</table>

Name___________________________________ Initials _____________ Date

Name___________________________________ Initials _____________ Date

Name___________________________________ Initials _____________ Date
August 5, 2009

Dear Janet Hughen:

Protocol #364038 “Nursing Simulation: A Classroom Discourse Inquiry” was reviewed and approved in accordance with SDSU’s Assurance and federal requirements pertaining to human subjects protections within the Code of Federal Regulations (45 CFR 46.110(F); 21 CFR 50). This review is valid through July 14, 2010 and applies to the conditions and procedures described in your protocol. Please notify the IRB office if your status as an SDSU-affiliate changes while conducting this research study (you are no longer an SDSU faculty member, staff member or student).

As the study involves the analysis of existing data, the requirement to obtain written consent has been waived per 45 CFR 46.116(d) since the research is minimal risk, the waiver or alteration will not adversely affect the rights and welfare of the subjects, and the research could not practically be carried out without the waiver or alteration.

Approval is contingent upon the completion of the SDSU human subjects tutorial (found at: http://www-rohan.sdsu.edu/~gra/login.php) by all members of the research team. This certification must be renewed every 2 years.

For questions related to this correspondence, please contact the IRB office ((619) 594-6622 or e-mail irb@mail.sdsu.edu). To access IRB review application materials, SDSU’s Assurance, the 45 CFR 46, the Belmont Report, and/or any other relevant policies and guidelines related to the involvement of human subjects in research, please visit the IRB web site at http://gra.sdsu.edu/research.php.

Sincerely,

Jeanne Nichols
Chair, Institutional Review Board

Wendy Bracken
Coordinator, Human Research Protection Program

Amy McDaniel
Regulatory Compliance Analyst

Choya Washington
Regulatory Compliance Analyst
APPENDIX G

TRANSCRIPTION CONVENTIONS
. or (.) pause
.. or (..) longer pause
… or (…) still longer pause

[overlap
[overlap

*italics whispering*

(inaudible) unclear utterance or word

- cut off word Ex. Th- the thing is

? high/rising intonation indicating the speaker is asking a question

. falling intonation indicating the speaker has completed a sentence

↑ intonation indicating the speaker is making a discovery