

# Textual Mediation in Simulated Nursing Handoffs: Examining How Student Writing Coordinates Action

Lillian Campbell

Marquette University, Milwaukee, WI | USA

**Abstract:** In clinical nursing simulations, a group of students provide care for a robotic patient during a structured scenario. As care is transferred from one group to another, they participate in a patient handoff, with outgoing students passing key information onto incoming students. In healthcare, the nursing handoff is a critical and perilous communication moment that is mediated by a range of participants and texts. Drawing on observations and video recordings of 52 simulation handoffs in the United States, this article examines how two student-designed texts – a collaborative patient chart and individual notes – are leveraged during the handoff. I also consider how handoff talk and writing changes as student nursing knowledge increases over the course of a year. By focusing on textual mediation of the simulated nursing handoff, this article contributes to existing research on professional writing pedagogy and to nursing scholarship on the handoff. Ultimately, it argues that a textual mediation framework can help bridge classroom and professional contexts by evaluating student writing not for how successfully it meets a set of imposed criteria but for how effectively it supports classroom activities.

**Keywords:** Nursing, Simulation, Pedagogy, Workplace Writing



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Contact: Lillian Campbell, Marquette University, Marquette Hall 115, P.O. Box 1881, Milwaukee, WI 53201-1881 | USA – [lillian.campbell@marquette.edu](mailto:lillian.campbell@marquette.edu)

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As writing teachers know well, newcomers to a discipline face a range of challenges when it comes to acquiring the modes of communication that define the field. Certainly, they must learn the design and technical standards for a set of genres that circulate and shape the field's practices. But as they begin to produce those texts, they are also being initiated into value systems, tacit ways of thinking and behaving, and a hierarchy of power relationships (Miller, 1984). In other words, learning to communicate in a new discipline is accompanied by social and epistemological shifts, as newcomers begin to use communication as a mediator of professional activity (Russell, 1997; Wardle, 2009).

For nursing students, these shifts are dramatic. In bachelors of nursing programs in the United States, they are acquiring a great deal of technical information about illness and patient care, while also beginning to take on the worldview of a nurse, which prioritizes and values experiential patient knowledge (Benner, 1998; Dowding, 2001). Meanwhile, in both clinical placements and classroom simulations, they are initiated into a network of healthcare genres including physician's orders, medication databases, electronic health records, and more. As their nursing knowledge grows, their engagement with these mediating texts will likely also develop and change, looking more and more like professional communication over time. Still, previous research on undergraduate nursing writing tends to focus on reflective or academic genres, overlooking contexts in which student writing is actively mediating patient care and engagement with peers (Gimenez, 2008).

In contrast, this article examines how two student-designed texts are used to inform a patient handoff during clinical simulations in the United States and how textual mediation changes as students develop their nursing knowledge. The patient handoff, where one group of students passes key information about a patient's condition onto a group of incoming students, is one of the most critical and perilous moments in health communication. As patient care transfers between providers, key information can be de-emphasized or forgotten entirely. In fact, Ebright et. al's (2004) study of novice nurses near misses and adverse events found that handoffs were involved in seven out of eight cases. At the same time, there is little consistency in how handoffs are taught or practiced, with substantial variation in terms of organization; types of information communicated; and the role of recordings, electronic documentation, or written notes.

During the simulations that were the subject of this study, junior year bachelors of nursing students provided hands-on care for a robotic patient in teams of three to four. A number of characteristics distinguish the simulation environment from typical clinical scenarios: students are immersed in a structured event that has been designed to highlight specific technical skills and interpersonal communication challenges; the instructor speaks as the patient, enabling her to prompt student action through patient conversation; the robotic patient body can be programmed to have physical responses (i.e. rising heart rate) but is also more difficult to physically engage with; and students have frequent opportunities to critically reflect on their care alongside classmates who have been watching their simulations. Most importantly for this study, student writing –

which includes tracking important patient information in individual notes and charting patient care on a large white board – plays a key role in mediating simulation activities, preparing students to use writing to guide professional work in clinical environments.

Drawing on video data of 52 collaborative patient handoffs of nursing students ranging in length from 30 seconds to four minutes, this article examines how students use their texts as a shared resource for information and how student conversation and documentation changes over time. The guiding research questions for this article are as follows:

1. What kinds of talk do students use during simulated handoffs? How does their talk change over time?
2. What kinds of documentation do students use during simulated handoffs? How does text use change over time?
3. How does a text's history and content impact its mediating role in a simulated handoff?

In order to answer these questions and account for students' development over the course of the year, I focused quantitative analysis on comparisons of handoffs across three different simulation scenarios. These scenarios had substantial differences in terms of the skills, techniques, and communication they were targeting, which is a limitation of the comparisons. For this reason, and in order to provide a richer picture of textual mediation during simulations, my analysis moves from a quantitative comparison of changes in talk and writing over the course of the year (responding to questions one and two) to a qualitative analysis of several anomalous scenarios (responding to question 3). This mixed methods approach provides an opportunity to both identify patterns in student conversation and documentation over time and to hone in on specific but idiosyncratic ways in which student texts coordinate action in a given hand-off exchange.

Ultimately, this article contributes to existing knowledge on both writing scholarship about professional writing pedagogy and to nursing scholarship on communication during the patient handoff. More broadly, it takes up theories and methodologies for studying textual mediation and considers how scholars and teachers might apply these methods to assessing student writing (Jones & Norris, 2005; Prior & Hengst, 2010). In the conclusion, I argue that a textual mediation framework can help bridge classroom and professional contexts by evaluating student writing not for how successfully it meets a set of imposed criteria but for how effectively it helps support classroom activity.

## 1. Literature Review

### 1.1 Writing and Talk in the Nursing Handoff

Given the handoff's prominent role in patient safety and professional communication, research on it is widespread. Drawing on a range of recent research on the handoff, The Joint Commission (TJC) defines an effective nursing handoff as including the following characteristics: interactive communication; current patient information; a process for verification; and limited communication barriers, like jargon and interruptions (Streeter & Harrington, 2017). Such a definition, however, is limited in its usefulness for evaluating nursing students' handoffs, because it focuses solely on the content of the handoff without acknowledging its epistemological role. As Staggers and Jennings (2009) argue, the nursing handoff serves "social, organizational, educational, and emotional functions... knowledge and expertise are hidden behind these exchanges" (p. 393). And as newcomers to the discipline, the question of how students effectively navigate burgeoning knowledge and expertise during their handoff and the role that their writing plays in this process is of much more interest.

More in line with the focus of this project, then, Staggers and Jennings (2009) study of professional nurses suggests that an effective handoff will balance factual patient data that does not require interpretation (30%) with assessments and decisions that integrate nursing knowledge (25%) and relational talk designed to build rapport between nurses (13%). A key component of professional talk is attention to non-physical patient experiences that might only be available to nurses through direct patient contact, like "patient preferences and acknowledg[ing] patients as human beings" (p. 395). Thus, my own analysis uses these different categories as a starting point for considering how students balance physical and non-physical data, professional knowledge, and conversation in their hand-off talk and writing. I define "effective" handoffs as those that show a distribution across types of talk and do not over-rely on data, a predictable pitfall for new nurses not adept at integrating professional knowledge into practice (Brenner, 1998).

Recent research on professional nursing handoffs has also attended to the role that written documentation plays in handoff success. In a qualitative study of 53 patient reports, Staggers and Jennings (2009) found that nurses used writing frequently, but also with a high degree of variation: "Nurses typically created a personalized tool for receiving report information. Although blank sheets of paper or 3 by 5-in cards were most commonly used, one nurse designed a personal form using a spreadsheet" (p. 395-96). Studies that have compared purely verbal handoffs with those that include written components support the value of integrating writing (Jefferies, Johnson & Nicholls, 2012). For example, Pothier et. al. (2005) conducted a comparative study that included three styles of handoff: purely verbal, note-taking, or standardized typed sheet, finding that the group with the standardized form were able to transfer the most data points from one group to the next. In line with the call for standardization, older studies focused primarily on the effectiveness of implementing a consistent written format as

part of handoff procedure like a shared binder or flow-sheet and report improved accuracy of patient information (Riesenberg, Leisch & Cunningham, 2010, p. 28). Meanwhile, more recent research has offered proposals for streamlining Electronic Health Record systems to support effective handoffs (Matic, Davidson & Salamonson, 2011).

At the same time, recent nursing reviews have critiqued the methodological rigor of research on patient handoffs and called for additional work. Stagers and Blaz (2013) argue “the majority of published material is anecdotal or concerns nurses’ perceptions about the merits of various methods for handoffs” (p. 248). Still, such research is complicated by the highly situational nature of handoff effectiveness. For example, in one study researchers found that handoff preferences varied just by whether participants were the incoming or outgoing group: “incoming nurses wanted a conversation with questions and eye contact, whereas outgoing nurses wanted to tell their story without interruptions” (Carroll, Williams & Gallivan, 2012, p. 586). Handoffs can also vary significantly by hospital division, so authors have critiqued attempts to standardize handoff procedure across units (Stagers & Blaz, 2013).

## **1.2 Pedagogy of the Nursing Handoff**

Despite the contextual variation of handoffs, there have still been consistent efforts to incorporate them into U.S. bachelors of nursing curriculum both in classroom-based simulations and in hospital placements (Malone, Anderson & Manning, 2016). Simulation contexts offer students an opportunity to build confidence in a safe and controlled environment, as well as to critically reflect on their own experiences and those they have observed in their clinical placements (Mole & McLafferty, 2004). But because of their removal from actual hospital floors, simulated handoffs risk teaching decontextualized practices that may prevent students from being flexible communicators. Indeed, a number of studies of simulated handoffs used structured handoff forms including the standardized SBAR – Situation, Background, Assessment, Recommendation – a communication system that was created in the United States military and is now widely for interprofessional medical communication in America (Ascano-Martin, 2008). The use of SBAR is controversial because it was designed to support communication between nurses and physicians and thus, “its format must be highly tailored to fit nursing handoffs” (Stagers & Blaz, 2013, p. 257). In contrast, some authors argue that handoffs can only really be learned through apprenticeship at the clinical site itself (Dracup & Morris, 2008; Scovell, 2010). Still, clinical practice comes with its own challenges, including staff reluctance to provide guidance or mentorship to students because of time constraints and less space for critical reflection (Eaton, Henderson & Winch, 2007).

Regardless of whether they are learning in simulations or hospital contexts, however, one of the key epistemological challenges for newcomers to the nursing field is how to take in vast amounts of patient and medication information and quickly determine which information is the most critical for intervention (Dowding, 2001). In

the simulations that I observed, instructors taught this thinking process to students using the acronym ADPIE – Assessment, Diagnosis, Planning, Implementation and Evaluation. During the Assessment and Diagnosis phases, students were told to draw on available information to identify a patient’s problem and to plan care. The challenge for newcomers, of course, was figuring out which patient information was actually relevant and which was extraneous. In Benner’s (1988) description of the advanced beginner nurse, she notes they often have guidelines that “integrate as many attributes and aspects as possible, but they tend to ignore their differential importance; i.e., they treat all attributes and aspects as equally important” (p. 23). This is a challenge that manifests in their classroom writing, in simulation documentation, and of course, in the simulated handoff.

Overall, much like the wider scholarship on nursing handoffs, studies of handoff pedagogy tend to focus on student perceptions or evaluate the implementation of a particular handoff protocol. There is limited research devoted to studying the language of simulated handoffs, the role of writing and technology, or student development over time. Meanwhile, even though it is widely acknowledged that handoffs play a key role in initiating students into the values and expected role of the nurse (Wolf, 1989; Lally, 1999), studies rarely investigate this socialization component as part of handoff pedagogy. It seems key to examine handoff pedagogy in this light, especially as nurses develop from novices to experts (Benner, 1988).

### 1.3 Theories of Textual Mediation

Fundamental to my research on the relationship between student charting and patient handoffs is the assumption that texts mediate activity. This is by no means a new assumption, but instead one that is foundational to research in a range of fields from education to writing studies. Prior’s (2009) theory of semiotic remediation has had particular influence on my framework and study design. Introducing this theory, Prior (2009) identifies a trend in previous research “to freeze writing (as though it entered the world from some other realm), to see writing as a noun rather than a verb, to specifically not study writing as activity” (p. 22). In contrast, he argues for an activity-focused notion of writing that uses the activity as its unit of analysis, a view shared by mediated discourse analysts as well (Jones & Norris, 2005).

Both frameworks trace their origins to Vygotsky, who has also been viewed as foundational to Cultural-Historical Activity Theory (CHAT), an approach that highlights the text’s pragmatic role in contributing to group activities and the achievement of group objectives (Russell, 1997). Drawing on CHAT to trace how texts mediate action in a contemporary workplace, Spinuzzi (2003) describes how workers “developed their own system of handwritten notes” to help them interact with a database of traffic accidents (p. 48). Along similar lines, Prior (2009) describes how texts participate in “multimodal chains” moving, for example, from planning talk, to written drafts, to a final written text; these texts are “relatively occluded and more oriented to mediational or processual purposes of individuals or groups than to wider public exchange” (p. 17).

An analysis focused on textual mediation, then, is invested in accounting for a range of multimodal actions (talk, gesture, and writing) that surround a given activity unit (i.e. a nursing handoff).

Even while they call for focusing on the activity as a unit of analysis, scholars argue that textual mediation cannot be viewed in isolation. As Prior and Hengst (2010) explain, “the use of an artifact here-and-now by particular participants draws on the activity of other participants at other times and places, producing a kind of chronotopic lamination – a fusion (fleeting or stabilized) of multiple times, places, and people” (p. 14). Thus, nursing students participating in a simulated handoff conversation are channeling the past, thinking perhaps about how their peers in the previous group faltered on their handoff or how they saw their nurse preceptor talk to a doctor during clinicals last week. But they are also likely channeling the future, anticipating what it will be like to have this conversation when they are in charge of relaying vital patient information to a care team. These different experiences exist together, layered upon one another; Prior and Hengst (2010) describe them as “shadow acts” (p. 5). This chronotopic view of textual mediation informs the developmental orientation of my quantitative analysis as well as my qualitative analysis of specific hand-off sequences. Together, these approaches focus not just on patterns in a single moment of mediation but also how those patterns change as students gain additional nursing experiences that are layered onto their handoff encounters.

## **2. Methods**

### **2.1 Field Context**

This research took place in the clinical simulation lab at Northwest University, a mid-sized private institution in the United States, with a group of approximately 80 junior-year nursing students. The clinical simulation lab contained multiple practice rooms that featured at least one robotic patient who could blink, breathe, and have a pulse, controlled by an instructor in a nearby observation room. The patient could also speak through a voice box connected to the instructor’s microphone. Meanwhile, the rooms themselves contained telemetry machines to monitor vital signs, a medications cart with the physician’s orders, sharps containers, oxygen masks, and many other typical hospital materials. Most relevant to this study, was a large white board (approximately 4’ X 6’) used to document patient care and several smaller white boards that occasionally supplemented the larger chart. During their orientation to the simulation room before each session, a group of students was directed to design a template for charting patient care on the white board. Their designs varied widely, with some groups replicating the categories used in hospital contexts and others developing sections that were more tied to this particular patient and context (Campbell, 2017).

During the course of the 2014-2015 academic year, students participated in three different scenarios in the lab – a geriatric simulation with a diabetic elderly woman, a

medical surgical simulation with a post-operative young male patient, and a pediatric simulation with an infant with a respiratory infection. Data collection included observations and collection of video recordings of all 30 simulations (10 per scenario), observations of all debriefs, four interviews each with five focal students who opted for greater participation in the study during the initial consent phase of research, and informal interviews with a number of instructors who consented to participate. I also collected classroom writing (a case study report) from all five focal students and various documents that circulated in the simulations such as patient information sheets and photographs of student-designed white board charts. This research was exempted by the human subjects review board at my institution and the institution where it took place on the grounds that it did not interfere with normal classroom practice. In fact, the simulation lab already recorded all simulations for student review during debrief. All names included in this article are pseudonyms to protect participant anonymity.

I took an ethnographic approach to data collection, drawing on recent work in rhetorical field methods that argues that by immersing themselves in local contexts rhetorical scholars can better understand the dynamic, performative, and connected aspects of local communication (Endres et. al., 2016; Rai & Gottschalk Druschke, 2018). This approach is well aligned with the study of textual mediation since it has the capacity to account for “the simultaneous, layered deployment of multiple semiotics (talk, gesture, artifact use and production, interaction with environmental structure)” (Prior & Hengst, 2010, 19). Key to ethnographic methods is researcher reflexivity about one’s power and positioning among their study participants. As a non-nurse studying nursing student practices, I recognize that I held an ambiguous position in terms of expertise and power in the simulation context. The simulation coordinator would readily remind students each time she reintroduced me that I was “not a nurse” and, therefore, “was not judging them.” However, as I watched ten different groups move through the same simulation, it also was hard to avoid comparative judgments across groups. Meanwhile, my physical positioning in simulations also created a level of distance between me and the students in the study; during simulations I sat with the instructors behind a one-sided window watching students from the control room and privy to instructor comments throughout.

In my analysis, moving between field notes, interviews, video recordings of simulations, and photographs of student texts enabled me to trouble any immediate instincts to evaluate a group’s actions at a particular moment and to work towards situating those actions in a broader learning context. For example, for this article, photographs of student charting provided crucial access to their texts. However, it was only by collecting video recordings that I could study texts as mediating action by tracking patterns in talk, gesture, and writing systematically across simulations. At the same time, my physical presence during every simulation – sitting in the observation room alongside the instructors – gave me experiential access to the interactions and an understanding of how particular conversations felt in real-time that would not be accessible with videos alone. Drawing on these different materials helped me to move

beyond categories of “good” and “bad” handoffs and towards a richer understanding of the multiple dynamics at play in any transfer of patient information. Meanwhile, the combination of quantitative and qualitative findings in this article makes a similar move towards understanding broader patterns in handoffs and then situating those patterns in specific student experiences and encounters.

## 2.2 Nursing Handoffs in Clinical Simulations

During the course of each simulation, three groups of 2-3 students provide care for the patient for approximately 20 minutes while the other 6-8 students watch a video stream of the simulation in a nearby classroom. At the end of their turn, the group rejoins the rest of the class to debrief with instructors and students about the effectiveness of their communication and care. Following debrief, the outgoing group gives a handoff to transfer patient information to the next group, often informed by their charting on the large white board as well as individual note sheets they have carried with them during the simulation (see Figure 1). While an instructor modeled the handoff for each group at the beginning of their simulation by introducing their patient, there was little additional instruction about the handoff itself during my observations. Thus, students approached the handoff by drawing on observations of their instructors, peers, and preceptors in simulations and hospital contexts and previous lessons on communication. Focal student interviews provided additional access to their thinking processes during the simulated handoff and the role their writing played during this exchange.



*Figure 1:* Two groups of nursing students participate in a handoff using the white board and their notes to guide the conversation.

Focal students noted that in hospital contexts, a nursing team would typically not have the full electronic health record available for their handoff. Instead, they would rely on nurse's notes, sometimes called the "brain," that highlighted key patient information from the health record. Ryan discussed how the students practiced using notes to guide professional communication during their communication lab sophomore year and how he used this model to guide handoffs in the simulation as well:

*We call them a brain, which is just paper with all your notes on it. So you can refer to that but you really have to practice just talking it out [...] what I've been doing is I have my notebook and then I write down the main points that I want to communicate next. So then I'll talk and then I'll refer to my notes and just see like a bullet point like 'head pain at 2 pm' and I'll be like, 'Oh and he wanted his pain medication at 2.'*

Here, Ryan outlines how his nurses' notes would prompt him to remember key information to pass off to an incoming group.

In the simulation context, however, students could use their shared white board chart to guide handoff conversations. Thus, many of them saw parallels between the white board and nurses' notes, rather than aligning it exclusively with the electronic health record. For example, Savannah explained how her group designed their white boards to resemble a template they received to take notes during clinical:

*We get these papers in clinical that's basically what the nurses use to take their own notes and to do the handoff report and so we suggested like 'Oh we should read off of that and take like the main points from that [to design our board].' So that's what we did to make our chart and I thought it was really useful.*

Thus, in most handoffs, students used both individual notes and their collaborative charts to inform conversation, with some groups prioritizing one type of writing over the other. In my analysis, then, I focused on how these different types of writing were leveraged during conversations over the course of a year and how they informed the content of those conversations as well.

### **2.3 Coding Handoff Talk and the Patient Chart**

As previously discussed, the ability to leverage nursing knowledge to prioritize information, consider causes, make judgments or evaluations about patient condition, and decide on next steps is central to professionalization in the field. Thus, my coding sought to distinguish between talk turns that demonstrated professional understanding and those that simply reiterated patient facts. After transcribing all 52 handoffs and segmenting them by clause, I developed three categories for talk – data, professional, and conversation. Data talk could be physical (i.e. a patient's temperature, blood pressure, level of consciousness, etc.) or non-physical, with non-physical data tending to focus on psycho-social patient information (i.e. their anxiety, relationship to a spouse, work history, etc.). I coded 56% of total turns (1442/2565) as "data."

Professional talk could take the form of evaluative, directive, causal, or recall, as explained in detail in the codes chart below. I coded 26% of turns (677/2565) as “professional.” Finally, the “conversation” code was used for any other talk in the handoff, including greetings and good-byes as well as talk that oriented new students to the patient and the room. I coded 17% of total turns (442/2565) as “conversation.” For detailed definitions of all codes see Figure 2.

In order to analyze the relationship between information that showed up in nursing students’ whiteboard patient charts and their handoff talk, I used a modified version of this scheme to code patient charts as well. Since I only had photographs of the final board used by each group, I first identified what information was on the board before each handoff by returning to video recordings. This was an imperfect process, since the camera did not always focus on the board at the right moments. In these cases, I had to approximate when information was available based on my field notes and understanding of how the simulation proceeded. Next, I coded every separate point of information on the chart as either data, professional or conversation, though the only instances of “conversation” were when students were working out equations to calculate dosage on the board. I also coded for the sub-categories physical and non-physical and evaluative, causal, and directive. This modified coding allowed me to account for whether having a larger percentage of professional or data talk on a chart could be correlated with different kinds of handoff talk.

#### **2.4 Coding Non-verbal Communication**

A number of studies of handoffs also investigate the importance of multi-modality in the exchange. Lee et al. (2005) did an experimental study testing how effective handoffs that combined verbal and written elements were compared to ones that relied exclusively on one mode; however, they did not find differences. Meanwhile, Stagers and Jennings (2009) note the prominent role of gestures in face-to-face handoffs to point to the location of tubes or wounds or to cue memory. For my purposes, Sigrid Norris’ (2004) development of a system for studying multimodal interactions in ethnographic research on German women’s identity construction offered a useful model for coding multimodal components of textual mediation. Her framework incorporates both embodied modes (gesture, gaze, posture, head movement, proxemics, and spoken language) and disembodied modes (music, written/printed text, layout).

To account for non-verbal components of textual mediation, I returned to my video recordings and coded each talk turn for both gesture and source, or where a student’s gaze was during talk. I coded talk turns for gestures towards the board, an outgoing student, an incoming student, the patient, the speaker’s body, or the environment (including the telemetry machine, medicine cart, phone, and medication orders). Gestures typically took the form of a hand wave or pointing in the direction of the object or person and 14% of turns included a gesture.

Code	Subcategories	Examples
Data: Clauses that describe (without valuing) information about the patient's physical or non-physical condition. Can include descriptions of patient care and questions about patient's state (56% of turns)	Physical: Describes (without valuing) information about the patient's physical condition	- "Blood pressure is 150/70." - "We checked vital signs."
	Non-physical: Describes (without valuing) information about the patient that is not physical (i.e. mental, emotional, social).	- "He is a little nervous about the PCA." - "We checked awareness."
	Professional: Clauses that require nurses to interpret data using nursing knowledge (26% of turns)	Evaluative: Conveys a negative or positive value judgment about past actions or findings. - "Blood pressure is high." - "His lungs sound clear to me."
		Directive: Directs incoming students towards future actions. - "Just keep an eye on that." - "You'll want to administer O2."
		Causal: Explains an intervention or a patient reaction as being caused by something else - "We administered Lovenox, because he was experiencing wheezing." Recall: Interjects something they have remembered, often as a non-sequitor that is not integrated into the narrative of patient care. - Without context, student adds, "Location of pain..." during handoff. *Not present on patient chart
Conversation: Clauses that were neither data nor professional, including greetings and good-byes as well as talk that oriented new students to the patient and the room (17% of turns)	N/A	- "Sounds good. Thank you." - "Have a wonderful shift."

Figure 2: Codes for handoff talk and patient chart.

Meanwhile, source codes included the big board, the small board, students' notes, an outgoing student, an incoming student, the patient (used also for things attached to patient like hanging IV), and the environment. Overall, 39% of turns included a source. A single turn could have a different code for source and gesture. For example, if a student was looking at their notes while gesturing their hand towards the big board, this would be coded as Gesture-Board; Source-Notes (see Figure 3).



Figure 3: Coded Gesture-Board, Source-Notes.

### 3. Quantitative Findings

My quantitative analysis considers how student handoff talk and writing developed over the course of a year, comparing findings across the three simulations – Geriatric (Fall 2014), Medical Surgical (Winter 2015), and Pediatric (Spring 2015). I use medians for comparison to ensure that outliers do not significantly impact my findings and only address here findings that showed relevant patterns over time. I also do not discuss measures – such as gestures to the board and notes – that were too infrequent for patterns to emerge.

#### 3.1 Consistent Professional Talk

The first notable quantitative finding was that instances of professional talk were fairly consistent across all three simulations. Comparing talk type categories in general, I found that the median percent of student talk was over half data (58%), a quarter professional (25%), and about 16% conversation. There was a slight increase in the median professional talk in the second simulation (28%) and a small dip in median conversation and data talk during that simulation as well. However, no overall increasing or decreasing trends were found (see Table 1).

One explanation for this consistent quantity of professional talk is that within the genre of the handoff there is simply a set amount of data that needs to be conveyed without professional processing. If that was the case, then about 55% of nurses' handoff talk will always be data-oriented throughout their careers.

**Table 1:** Median Percent Talk Type across Three Simulations

Simulation	% Data	% Professional	% Conversation
Geriatric	58	23	17
MedSurg	56	28	13
Pediatric	58	24	19

However, Stagers and Jennings' (2009) analysis of handoff talk used categories that closely resemble mine and their findings suggest that data-oriented talk, as I am defining it, occupies only 30% of total talk for professional nurses in clinical contexts. Meanwhile, "Professional Nursing Practice" and "Lightening the Load" take up a combined 38%. Their code "Lightening the Load" would include directives categorized as professional talk in my scheme, as well as some of the talk that I coded as conversational. Thus, previous research suggests that the student nurses in this study would move towards greater than 25% professional talk during a handoff over time.

Indeed, scholars argue that as novices become experts they are able to more effectively leverage their cognitive schemas to negotiate information; in other words, information processing is a learned skill developed over time and through practice (Bransford & Schwartz, 1999; Dowding, 2001). During the year that I conducted my research, nursing students practiced moving from data to professional knowledge in classroom assignments like the "clinical write-up," which asked them to track the nursing process across one or two conditions for a single patient in their clinical placement. They also practiced using the ADPIE format in simulations to inform their individual note taking and to structure their templates for charting patient care on the white board. Thus, I expected that students would increase their ability to synthesize patient and medication data and instances of both "professional talk" and "professional notes" would be more prominent.

Instead, my findings indicate a gap between students' burgeoning nursing knowledge and the ways that they are able to leverage that knowledge during a collaborative conversation about a patient's status. In other words, my findings suggest a lack of transfer from classroom learning to collaborative simulation conversation. Given what we know about transfer of learning, this gap is not surprising, especially because the coding category of "professional knowledge" was specifically targeting the type of transfer that is most challenging – high road transfer. Low road transfer asks students to repeat learning in contexts that resemble the original learning context. For example, when students are asked to list a medication's side effects on a Pharmacology exam for which they have explicitly studied a list of medications and their side effects. Meanwhile, high road transfer necessitates the application and transformation of that learning for a new context. For example, when students' post-operative male patient in a simulation complains of itching and they have to recognize this is a side effect of morphine and consider whether pain management should take priority over his

discomfort (Perkins & Salomon 1988). Over the course of this yearlong study, students certainly acquired a wide range of nursing knowledge in their courses, but were not yet demonstrating an ability to fully apply that knowledge to conversation.

A closer examination of the types of professional talk used over time does show some shifts, however, that could preview changes further down the line (see Table 3). For one, across the three simulations there was an increase in the median percentage of evaluative talk from 11% of professional turns in the first to 27% of professional turns in the second and last. This demonstrates students' burgeoning ability to decide whether data about a patient was good or bad, a basic form of critical engagement that could preclude directing the group towards other actions (directive) or considering how those conditions arose (causal). Meanwhile, the percentage of "recall" turns steadily declined over the course of the year, from a median of 3% of turns in the first simulation to 0% in the second and last. Moments of recall occurred when students were struggling to integrate their classroom learning into the conversation, even though they recognized it as relevant. Thus, this decreasing trend suggests that students were more adept at classroom knowledge integration as the year progressed, even if they were not yet at the stage where they were increasing the amount of professional knowledge they conveyed.

**Table 2:** Median Percent Professional Talk Type across Three Simulations

Simulation	% Evaluative	% Causal	% Directive	% Recall
Geriatric	11	33	50	3
MedSurg	27	8	63	0
Pediatric	27	31	29	0

### 3.2 Increasing Professional Notations

In contrast to professional talk, instances of professional notations increased consistently across all three simulations in line with my predictions. First, of all, students charted more information over time, starting with a median of 23.5 notes during the first simulation and ending with a median of 26.5. The median percentage of notes that were data decreased over time from 90% to 84%, while the median percentage of notes that were professional increased by 6% (see Table 2).

**Table 3:** Median Notations on the White Board Chart across Three Simulations

Simulation	Total Notes	% Data	% Professional
Geriatric	23.5	90	10
MedSurg	24.5	88	12
Pediatric	26.5	84	16

Notably, professional knowledge always had a larger presence in handoff talk than in charting. In addition, more professional notations did not correlate with more professional talk. Professional talk turns used the board as a source about 10% of the time and used notes as a source 5% of the time. Meanwhile, data talk turns used the board 18% of the time and notes for the same percentage of turns. I also examined what percentage of turns that used the board as a source were professional talk (22%) and data talk (67%). Turns that used individual notes as a source were 20% professional and 75% data. These findings do show a slight trend towards professional talk aligning with use of the collaborative chart. Still, overall whether students were using charts or notes, they were more likely to engage in data talk. This makes sense given the large percentage of notations that were categorized as “data” when analyzing the charts themselves (86%).

I also used scatter plots with trend lines to examine correlations between talk type and notation type to see if having more professional notations, for example, correlated with more professional talk during the handoff. The only correlation I found through these comparisons was that the number of notations on the board had an increasing correlation with the number of talk turns that used the board as a source. In other words, the more information students documented on their boards, the more likely they were to look at the boards for numerous talk turns during their handoffs.

The increase in professional notations, then, should be understood as an independent phenomenon and one that is tied to the development in students’ chart designs over time. Between the first and second simulations, this template design developed naturally as students came to recognize how their sections could correspond uniquely to patient’s needs. More situation-specific categories then provided opportunities for evaluation of assessments, causal links to interventions, and directive instructions to incoming groups, as shown in the analysis above. By the third simulation, students shifted to using a recommended template designed around the ADPIE acronym. My analysis below shows how this particular organization facilitated professional notations. While these findings seem to suggest that introducing charting templates might help students to leverage professional knowledge during the handoff, I do offer some cautions about using these templates in the implications section.

### **3.3 Increasing Non-physical Information in Talk and Charting**

Finally, across both handoff talk and writing there was an increase in non-physical patient information over time. While the vast majority of data talk was physical, the geriatric simulation included a total of 55 non-physical turns across all three groups, while the medical surgical included 85, and the pediatric included 73. In addition, there was also an increase in the number of non-physical notations over the course of three simulations, with a total of 4 non-physical notations in all of the geriatric simulations, 6 in all of the medical surgical simulations, and 8 in the pediatric simulations.

Ultimately, nurses have a conflicting relationship to psychosocial patient information because of their interdisciplinary work among other health care professionals. In the context of nurse-to-nurse communication – like the patient handoffs that were the subject of this study – nursing students are taught to value information about the patient’s emotional well-being and affective state. My focal students identified this knowledge as key to their contribution as nurses. One student, Savannah, explained how she saw her role as part of the healthcare team, saying:

*Doctors have multiple patients and they don't have time to get to know all of their patients on like a personal level so nurses have more direct interaction with the patient [...] they're also the ones that are there to have more time like one on one time with the patient so they can get to know them and like be a source of comfort for them more often than doctors can be.*

Savannah’s emphasis on personal knowledge of patients acquired through direct interaction speaks to what Ariail and Smith describe as “the core helping relationship” that is central to nursing practice (2008, p. 262). The core helping relationship was heavily emphasized in students’ classes and through the lessons of the simulation itself. For example, the simulation coordinator, Moira, had certain kinds of psychosocial information that she prioritized for each simulation. For Jason Lee, students needed to discover that he was nervous about the consequences of his accident both for his relationship with his dad and for legal repercussions. If they did not reach out and ask about how he was feeling during the course of the simulation, Jason would start spontaneously crying to prompt this emotional support. Thus, lessons for students were focused primarily on understanding the unique interpersonal relationship that nurses have with patients and the affordances of this relationship for understanding a patient’s emotional wellbeing.

However, students were also being trained to consider how their focus on patient wellbeing might come into conflict with the values of other healthcare providers at their sites, like physicians. When practicing a physician-nurse phone conversation, Moira or another instructor would preview such conflicts by playing the role of a curt doctor during a phone conversation. They instructed students that doctors would not be interested in the patient’s life story, but would want to know the primary concern immediately. Scholars have similarly noted the importance of learning to balance the nurse’s patient-centered orientation with the pragmatic values and goals of other healthcare practitioners. Ariail and Smith’s (2008) found that initiation into nursing discourses also entails learning to participate in interdisciplinary genres that prioritize physical information over emotional knowledge of the patient (Ariail & Smith, 2008, p. 262). This echoes Paré’s (2000) findings that as social work students transitioned into hospital writing, they learned to translate their field’s emphasis on social relations into the data-based and technical genres of the medical world. In both cases, the genres of nursing and social work exist as part of larger genre systems accessed by a range of health practitioners. Still, the primary emphasis was helping students to value their

unique access to non-physical information especially in nurse-to-nurse communication. Thus, their increasing attention to psychosocial information in nursing handoffs over time aligns with that goal and focus.

#### **4. Qualitative Analysis of Textual Mediation**

While quantitative analysis of my codes offers a comprehensive view of patterns across student hand-offs, it cannot fully capture the chaining of events and chronotopic lamination that led to any particular exchange (Prior & Hengst, 2010). In fact, there were a number of factors influencing the patient handoff that I could not code for with my approach. The most significant factor is the debrief conversation that happened between students and instructors immediately prior to a handoff. During the debrief, the group that just provided patient care would receive feedback from instructors and other students, who watch the simulation on a video stream or through a one-way window. Conversations during debrief inevitably made their way into handoff conversations since they were fresh in students' minds. In addition, students' handoffs were informed by the instructor handoff at the beginning of the simulation and if they were part of the second group, by the earlier groups' handoff. I also did not find ways to quantitatively account for these sources in my coding. However, as I delve into a qualitative analysis of four handoff exchanges, I work to contextualize the short period of the handoff within the range of important events that preceded it during the simulation.

Despite the lack of correlational trends between talk type and chart documentation, a closer examination of several examples can still be instructive in understanding the relationships between talk and writing of information in the student handoff. First, I compare two handoffs that made extensive use of the white board – one during the geriatric simulation and one during the pediatric simulation. Then, I look at two handoffs that were not facilitated by a patient chart at all because the groups erased their charts prior to the handoff. In all cases, I extend beyond just analyzing the chart and the handoff talk to look at the events that precede the handoff in the simulation and also the events that follow. This qualitative attention to activities surrounding the handoff provides a richer picture of the events surrounding textual mediation and a more complete sense of how these events are layered to create certain types of exchange.

##### **4.1 Extensive Chart Use and Non-physical Patient Data**

In the first example under consideration, 61% of talk turns used the board as a source. This was also the geriatric board with the most notations (40), aligning with the trend that boards with more information were used more heavily as a source. Looking at the board itself (see Figure 4) helps to explain its use during the handoff. The professional notations on the board included directives about checking on the wound culture and new orders for morphine and acetaminophen. Overall, the board was above the median for the geriatric simulation in the percentage of professional notations (23%).

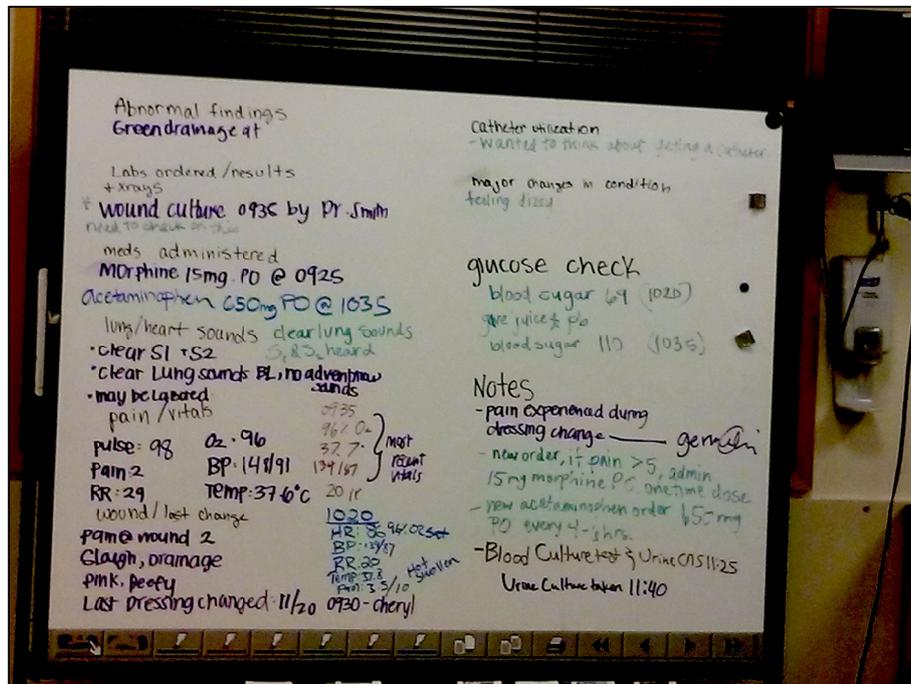


Figure 4: White board charting for geriatric patient.

The board's design supported these notations because in addition to general categories like "pain/vitals" and "lung/heart sounds" it included several sections that were tailored to this particular patient and her needs. This included the section called "wound/last change" that attended to Eliana's wound care, the "catheter utilization" section and the "glucose check" section. As I have argued in previous work, this board is an example of students designing a charting template that was rhetorically responsive to their patient and the simulation context, rather than simply mimicking a template from a hospital context (Campbell, 2017).

Notable also in both the notations and student talk was this hand-off's attention to non-physical information, specifically the patient's feelings about getting a catheter. During the preceding group's care, students were prompted to ask Eliana about a catheter while looking at the board because of the tailored "catheter utilization" category. During the conversation, however, one student asked Eliana, "Do you think you might want us to put in a catheter for you to make [urination] a little easier?" Because of the open-ended nature of this question, Eliana responded ambivalently, considering the alternative of a bedpan and ultimately requesting more time to think about the catheterization. This was noted on the board as "wanted to think about getting a catheter" and students and instructors discussed the conversation during

debrief. The simulation coordinator, Moira, asked for suggestions on how to persuade a “reluctant patient” about the benefits of the procedure.

During the patient handoff itself, recapping the catheter conversation led to a number of non-physical talk turns. One student explained, “She told us that she’s had urgency to go and that she dribbles sometimes the urine [...] but she’s been thinking about getting a catheter. We haven’t asked her yet what her decision is because she asked for some time.” Ultimately, this conversation combined with the instructor’s cuing during debrief (“remember the patient is giving you hints and clues”) alerted the next group to problems regarding urination, leading them to take a urine culture to test for a urinary tract infection (visible under “Notes”).

Even though this particular handoff prioritized non-physical patient information more than usual, examining the previous group’s care also shows psychosocial background that never made it into the handoff conversation. When the second group came in to meet Eliana, she commented, “The nurses have all been so nice. I get kind of lonely at home so it’s nice to have so much company.” This prompted some questioning from the group about Eliana’s home life, during which students discovered that she lives alone but has a daughter nearby who she tries not to bother. In debrief, Moira highlighted the importance of this information for students, leading them to think about its usefulness when Eliana is discharged. Still, the information did not make it onto the chart; the only section where it might make sense is under “Notes.” Subsequently, it was also not included in the handoff to the final group. Thus, this first example demonstrates the ways that tailored charting categories can both prompt non-physical information (in the case of the catheter section) and also limit it when there is not a clear place to document psychosocial patient information.

#### **4.2 Extensive Chart Use and Translation of Errors**

The pediatric board, on the other hand, was used in 64% of talk turns. While the first board featured a template designed by the students to respond to their specific patient’s conditions, this board was designed based upon a suggestion from the clinical instructor Kayla and Moira (see Figure 5). Both were impressed when the first two groups during the pediatric simulation decided to design their board to specifically reflect the nursing process. These groups put vital signs and systems (like skin, neurological, developmental, family, etc.) down the left side of the board and Assessment, Diagnosis, Plan, Interventions, and Evaluations across the top. Moira and Kayla were very enthusiastic about this layout, noting that it helped students organize themselves and prioritize tasks more quickly. Thus, the following day, Kayla started recommending this organization to students during her conversation about the nursing process.

Like the geriatric chart discussed above, the board’s design facilitated more professional notations. This board was above the median for simulations in the percentage of professional notations (38%) and evaluative notations (21%).

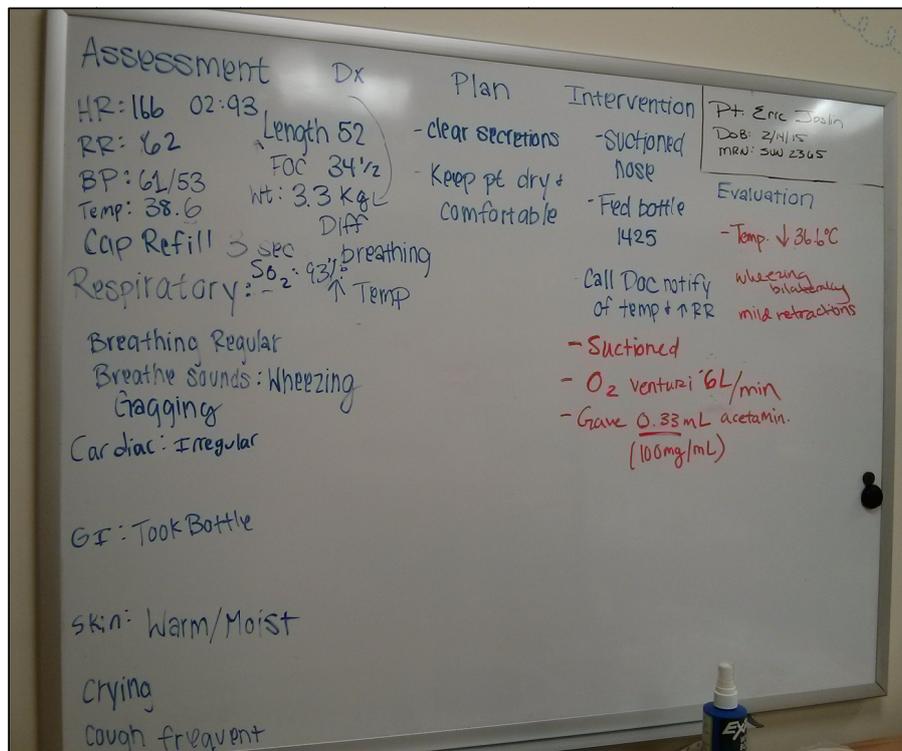


Figure 5: White board charting for pediatric patient.

The diagnosis column elicits evaluative statements (i.e. “differential breathing”); the “Plan” section elicits directives (i.e. “keep patient dry and comfortable); and the “Intervention” section is often framed causally because it is tied to assessments, diagnoses, and plans. Some groups even used arrows to connect information from one column to the next to show how their assessment of a high temperature, for example, was tied to their intervention of Acetaminophen.

Notations on this board also demonstrate, however, the ways that errors that occurred during the simulation scenario could make their way into documentation and/or a handoff conversation. While doing their assessments of the infant patient, the first group in this simulation asked Moira over the intercom about the quality of his skin, something that could not be altered on the robotic patient but that is a fundamental part of infant assessments. Moira responded that it was “warm and moist,” but immediately grimaced at her choice of the word “moist.” The group took this word choice to mean that the baby was feverish and sweating, rather than simply healthy, as Moira had intended. They documented on the board that one of their goals was to “keep patient dry and comfortable.” Later on, when they called the doctor to request medication they informed him that the patient was “sweating profusely.” During

debrief, however, Moira explained the confusion and pointed out to students that, in fact, newborn infants do not have fully developed sweat glands and cannot sweat. Perhaps because of the debrief conversation, students did not include the directive to “keep patient dry and comfortable” during their handoff despite its prominent place under “Plan” on the chart.

On the other hand, an error initiated by the pharmacist for the previous group regarding the patient’s medication was documented on the white board incorrectly and thus, carried through to the handoff incorrectly as well. When a student called the pharmacist during the first handoff to order Acetaminophen for his rising temperature, the pharmacist (played by an instructor) changed this order to Ibuprofen. This was typical during the pediatric simulation since instructors wanted students to realize that they could not give Ibuprofen to an infant under six months and to challenge the pharmacist on the order. In this group, however, the student ignored the changed order and the group reported during handoff, “His respiratory rate did increase while we were here so we called the doctor and we just got an order for Acetaminophen because he has a temperature right now.” Much like the charting on the board, this explanation ties data-based talk (i.e. increasing respiratory rate) to causal interventions (i.e. calling the doctor to report findings). However, when the incoming group arrived to find the pharmacist had delivered Ibuprofen instead of Acetaminophen, they were left to negotiate this error without any warning from the board or handoff. In this second example, then, we see how even a white board that is used extensively during handoffs varies in the degree to which it accounts for misinformation and miscommunication during the simulation.

### 4.3 Two Handoffs with No Chart Use

In addition to recommending that students make use of ADPIE as a format for guiding their charting, instructor Kayla also encouraged individual teams to “do their own charting,” and erase information that they did not need from the previous group. Part of this was out of necessity, since the white board in the pediatric simulation room was much smaller than the board in the adult simulation room. However, it also meant that students lost the ability to track patient progress across all three groups, which had been a priority for them in many of their early chart designs. In one simulation, two different groups chose to entirely erase the information at the end of their care prior to their handoff to the next group. This provides an opportunity for closely examining patterns in handoffs when there is no white board chart available at all.

The first handoff was an average length (47 turns). Unlike in the previous example, this group was well aware of the error with the Ibuprofen order prior to their handoff. One of the students in the group had failed to find a dosage for infants in the medications database, but had not successfully communicated that information to her group member’s in time. During their debrief, then, Moira highlighted the communication breakdown that had occurred, encouraging them to “learn to trust that red flag.” Thus, a longer exchange with a number of professional turns during the

handoff highlights the importance of changing the medication: “His temperature is a little elevated so we have an order of Ibuprofen coming to us but you want to check with the pharmacy because we changed that according to his age, which is inappropriate. And it should be Acetaminophin and not Ibuprofen.” This information has been foregrounded for the group because of the debrief conversation, so they look straight ahead at the other group while they deliver it. However, the first comment -- “His temperature is a little elevated” occurs while looking at the patient as a source. It also follows three talk turns that all report on patient care while looking at the patient: “So far we have done some suctioning, gave him a bottle, his diaper was dry last time we checked.” In fact, this handoff used the patient’s body as a source for 7 turns or 15% of total talk, while most simulations never used the patient as a source.

The second handoff was below average in length (24 turns), but also included 5 gestures to the patient, 21% of total talk turns compared to an average of about 2 patient gestures per simulation across all handoffs. Similarly, gestures to the patient in the second handoff were also accompanied by a discussion of using a wedge to “try to elevate [the baby’s] head” and ease wheezing and high respiration levels. Thus, in the absence of a shared collaborative chart, the patient’s body became a more prominent source of information for both handoffs.

The limitations of relying primarily on a verbal handoff were more visible with the second group, however. Again gesturing to the patient, the second group noted, “So and then oxygen, which is at the wrong liters per minute.” Despite the urgency of getting a baby with a respiratory illness on the correct oxygen dosage, however, the third group did not remember to address this in their care. In response, Moira first had the manikin start to turn blue and then ultimately came over the loud speaker to ask the group, “What liters do you have O<sub>2</sub> on?” This group also failed to mention important psychosocial information, specifically about the patient’s mother who had been insisting on touching her baby even though he was on quarantine for a respiratory infection. Thus, using the patient’s body as a source or to gesture to could prompt a range of physical information and professional information during the handoff, but not surprisingly it also caused both the outgoing and incoming groups to forget to discuss and prioritize key information as well.

## **5. Implications**

### **5.1 Future Directions for Nursing Research**

While handoff communication is a key area of concern in nursing scholarship, existing research on handoff pedagogy has tended to focus on implementation of set protocols like SBAR or on student perceptions. In contrast, this study shows the value of shifting attention towards simulated handoffs and analyzing features that have been considered in clinical contexts such as use of writing, type of talk, gaze, and gesture. Considering these features during the course of a year offers opportunities to track student

development and examine how their handoffs change with growing nursing knowledge and clinical experience. I see this preliminary study pointing to several future directions for nursing research on the pedagogy of the handoff.

One area for further research is visible in my analysis of the two examples of extensive chart use, which found that professional and non-physical notations and talk shaped the next group's focus for care in important ways. For example, in the geriatric simulation, the outgoing group's attention to non-physical patient concerns around catheterization prompted the following group to take a urine culture and test for a urinary tract infection. These analyses suggest that handoffs that focus more on professional or non-physical information in talk and writing likely lead to better patient care in the following simulation. To determine whether this is a pattern, however, future projects would need to account for the care provided in each simulation following a handoff and determine criteria for evaluating success. These would likely build on instructor's goals for a simulation, both physical interventions and skills practice as well as their goals for communication and relational development between patient and nurse.

A second area for further research concerns how students leverage the room, the patient's body, and their own bodies during handoffs where writing is not used. A preliminary examination of two handoffs that did not involve a white board suggests that the patient becomes a more frequent source during these conversations, possibly leading to more evaluative and non-physical talk. There has certainly been research into the ways that platforms such as the Electronic Health Record lead to less embodied patient and practitioner engagement (McGrath, Arar & Pugh, 2005; Morrison, Fitzpatrick & Blackwell, 2011). However, the majority of research on handoffs which compares verbal, written, or verbal and written modes focuses on the accuracy of information exchange (Pothier et. al. 2005). This study suggests that more research into the sources of information (evaluated by looking at gaze and gesture) and type of information communicated in written and non-written handoffs could offer valuable insights.

Finally, my analysis also enabled comparisons between handoffs guided by patient chart templates or templates that were student-designed. My findings seem to suggest that nursing students would benefit from being given templates for charting that prioritize leveraging their professional knowledge. However, I also want to caution against wholesale adoption of charting templates because of its potential impact on genre learning. Students were willing to take up Kayla's suggested template with very few modifications. Once they were given this outline, many of them did not bother to discuss a template during their planning time before the simulation began. Focal students noted the convenience of not having to negotiate different individual's charting choices. Michelle was pleased with the uniformity provided by Kayla's template saying she was "really into organization and structure." She elaborated:

*When its just a blank board and I'm just supposed to write down important information its kind of like 'Okay, well what's exactly the important information?' but with that it was like you knew exactly like 'Okay, this is what's going on, this is what we need to do, and this is how we evaluate it.' So it made it a lot easier in that sense.*

The ability to negotiate together “what’s exactly the important information,” however, was precisely what was lost in providing a template for the board. Students no longer had sustained conversations about what categories to include for this particular patient and instead, the chart was typically jotted up on the board by someone at the very beginning of the simulation. In contrast, findings from the first two simulations suggest that students might still learn to incorporate more professional knowledge into their charting over time. Without a template, they would also continue to do the collaborative work of negotiating how the sections and layout of their genre could best reflect the particular rhetorical situation of this patient in this context (Campbell, 2017).

## **5.2 Teaching and Assessing Student Writing**

Given the unique nature of the simulation context, the specific findings for this project may seem far removed from a typical writing classroom. However, I see the overall perspective on student writing and the research questions that guided this inquiry as having direct connections to writing scholarship and especially recent work on teaching usability in professional and technical writing classrooms. Usability research broadly calls for designing and assessing texts and technological systems based on how users encounter them including cognitive, emotional, social, and embodied experiences (Crossley, Fanfarelli, & McDaniel, 2016). Usability research in technical communication often analyzes how professional texts mediate workplace systems, but scholars have struggled to create authentic opportunities for students to learn usability in the classroom. For example, Chong (2016) analyzed a number of technical communication textbooks and found that the majority presented usability testing as a series of “quick-and-dirty” checklists that simplified the process (p. 24).

In contrast, this study puts a student-designed text (the collaborative patient chart) front and center in its analysis to consider how it mediates a classroom activity. In doing so, I call attention to the ways that student texts can have a mediating role and can also be evaluated for how successfully they coordinate action. Like Swarts and Slattery (2009), I believe that taking this perspective on student writing can offer new approaches to assessment that are more “transparent and systematic” because they are grounded in student experience and observable outcomes (p. 192). Rather than imposing existing criteria on student work — often drawn from real-world situations with different goals and audiences — instructors can evaluate how a student’s text impacts a classroom exchange (Wardle, 2009). For example, in designing evaluation criteria for the student-designed charts and handoffs in this study, instructors could go beyond questions of whether they adhered to a specific template or included everything

from a predetermined list of necessary information. Instead, they could consider: How much did students rely on their charting during a handoff? In what ways did the text promote a desired kind of professional talk? What features of the text effectively supported an incoming group's negotiation of the task? Which features inhibited success?

Of course, to answer these questions, writing instructors would need to begin assigning writing that can authentically coordinate classroom activity and to start collecting records of classroom activity in addition to student writing. Clinical simulations are certainly a unique context, but students in writing classes could also create navigational texts for working with course platforms, library databases, or multimodal design tools. Instructors could then collect video or audio recording of classroom exchanges or live observation of students using a text in action. These may seem like substantial pedagogical shifts, but if we are to take seriously a view of texts as mediators of activity, then our assignment design and assessment should also find ways to be accountable to this view. Ultimately, this article offers a theoretical framework and methodological approach for envisioning student texts as mediators of classroom activity. My hope is that writing teachers might take up these perspectives across a variety of contexts to better understand and account for the powerful role that student writing can play in coordinating classroom action.

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