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Critical Factors That Influence Faculty Attitudes and Behaviors About Implementation of Electronic Health Records in Nursing Academia

Ilse M. Wallace

CRITICAL FACTORS THAT INFLUENCE FACULTY ATTITUDES AND BEHAVIORS ABOUT IMPLEMENTATION OF ELECTRONIC HEALTH RECORDS IN NURSING ACADEMIA

DISSERTATION

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Ilse M. Wallace

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DISSERTATION

by

Ilse M. Wallace

APPROVED BY:

_____

Jessie M. Colin, PhD, RN, FRE, FAAN
Chairperson, Dissertation Committee
Program Director, College of Nursing and Health Sciences

_____

Claudette R. Chin, PhD, ARNP
Member, Dissertation Committee

_____

Donna Rice, PhD, RN, CCNE, CNE
Member, Dissertation Committee

_____

John McFadden, PhD, CRNA
Dean, College of Nursing and Health Sciences

Abstract

Background: Students must be competent in using electronic health records upon graduation. Lack of faculty interest in embracing their use has been reported as a barrier. In order to develop strategies to improve the implementation of these records in academia, the critical factors that influence faculty attitudes and behaviors about implementation of electronic health records in nursing academia must be explored.

Purpose: The purpose of this grounded theory study was to develop a substantive theory of the process of faculty transitioning to teaching nursing documentation with the electronic health record and the factors that influenced faculty in the transition.

Philosophical Underpinnings: Grounded theory is philosophically based on assumptions of symbolic interactionism and pragmatism.

Methods: Data collection consisted of semi-structured individual interviews and a focus group interview of nurse faculty. The data were analyzed through open, axial, and selective coding for emergence of codes, categories, central phenomenon, and relationships. Data collection and analysis were intertwined through constant comparison. Upon the emergence of the core category and the relationships among categories, theoretical sampling began. Theoretical group interview was used to substantiate the potential theory, which provided a framework for understanding the process of faculty implementing electronic health records.

Results: The three main categories that emerged from the voices of the nurse faculty participants and the data analysis were valuing, interacting, and evolving. Professionalization emerged as the core category that everything else related to, and that was able to explain the social process that faculty were engaged in implementing EHRs

in nursing academia. The conceptual model that emerged illuminated the basic social process of professionalization, explained the categories and subcategories, as well as, provided an explanation of the relationships among them.

Conclusion: The theoretical framework that emerged through this grounded theory study can be used to improve the process of implementing electronic health records in nursing academia, assure valuable EHR experiences for students during their studies, graduate nurses who are competent in using EHRs, and ultimately make health care safer and improve patient outcomes through envisioned utilization of EHRs.

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DEDICATION

I would like to dedicate my dissertation to my mother, Tuula Lahti, who has been my biggest cheerleader in whatever I have pursued in my life. She has always believed in me and unselfishly encouraged me on any path that I have chosen. I am extremely thankful for the support, confidence, and love that you have given me and for the dedication you have not only for me, but also for my husband Doug and our children Niklas and Samu.

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CHAPTER ONE

Today's health care system is under rapid and constant transformation with health care reform and an information technology explosion driving the change (Warner & Misener, 2009). To stay current, nurse educators must be quick to respond. According to the Institute of Medicine (IOM, 2010a), 21st century nurses are required to "master technological tools and information management systems .... and be educated in new ways that better prepare them to meet the needs of the population" (p. 2). The National League for Nursing (NLN, 2008) calls for nursing graduates to be competent using informatics tools such as the electronic health record (EHR). Various leaders in nursing are working both collaboratively and independently on initiatives and practices to build and enrich informatics education for nurses entering the profession (American Association of Colleges of Nursing [AACN], 2008; IOM, 2010a; Technology Informatics Guiding Education Reform [TIGER], 2009; Quality and Safety Education for Nurses [QSEN], 2011).

Nursing faculty are especially challenged in keeping abreast with the changes in the competencies required in today's nursing practice concerning information technology and informatics tools, such as the electronic health record (Skiba, Connors, & Jeffries, 2008; Warner & Misener, 2009). The current literature indicates the lack of knowledgeable faculty or their lack of interest in embracing technology as significant barriers to implementing electronic health records in nursing academia (Curry, 2011; Meyer, Sternberger, & Toscos, 2011; Taylor, Hudson, Vazzano, Naumann, & Neal, 2010; Thompson & Skiba, 2008). Faculty perceive themselves as competent and confident in teaching paper-based documentation skills, suggesting a "plateau of comfort

in this area" (Mahon, Nickitas, & Nokes, 2010, p. 620), but their perceived self-efficacy is diminished when teaching clinical documentation with the electronic health record. To gain a deeper understanding of the process of faculty implementing electronic health records in nursing academia and facilitate its implementation, the critical factors that influence faculty attitudes and behaviors about teaching nursing documentation with the electronic health record must be explored.

Background of the Study

Documentation in health care has been around for over a century (Sewell & Thede, 2013). Florence Nightingale is often credited as having initiated detailed recorded notes about nursing care (Turpin, 2005; Sewell & Thede, 2013). She also analyzed the collected data and used it to make practice recommendations in order to improve patient outcomes (Sewell & Thede, 2013). Later in the 1920s, Canadian nurse Bertha Harmer discussed her vision about the value of nursing documentation and its aggregation "to improve nursing care and patients' outcomes" (Sewell & Thede, 2013, p. 282).

The Traditional Health Record

The traditional health record or paper chart is a collection of documents about patient's health history, diagnostic tests, interprofessional communication, care provided to patient, and patients' outcomes written by members of various disciplines (Wilkinson & Treas, 2011). The purpose of a health record is "planning and evaluation of a patient's care; communication and continuity of care; legal documentation; quality improvement; professional standards of care; reimbursement and utilization review; education; and research" (Wilkinson & Treas, p. 292). Nurses are expected to manage and implement

their patients' plan of care, and its ongoing documentation can be expected to take as much or even more than 25% of the nurses' workday (Wilkinson & Treas, 2011).

The advantages of a traditional paper health record are that all health care providers are accustomed to it; it does not require a computer database and secured networks to operate; updating forms is relatively easy and economical; and computer system outages do not affect its use (Wilkinson & Treas, 2011). The disadvantages include limited access, slow retrieval of patient information, and the necessity of being in the same location, which is especially difficult after the record has been archived. An additional disadvantage is an increased risk of care errors due to illegible handwriting, permanent loss of records, or lack of using standardized language, among others. Furthermore, in order to create reports or collect data of patient care, paper records necessitate a manual audit of multiple charts, which can be very time consuming (Wilkinson & Treas, 2011). Patient confidentiality of paper records can be viewed as either an advantage or disadvantage. Both Sewell and Thede (2013) and Wilkinson and Treas (2011) pointed out that with paper records, it is not possible to determine if anyone without authorization has accessed the record or what information has been viewed, while Graves (2013) argued that the mere fact of paper records being physically reasonably difficult to access is what protects patient confidentiality.

The Electronic Health Record

The process of documentation stayed relatively the same until the introduction of computers in health care at the end of the 20th century (Turpin, 2005; Sewell & Thede, 2013; Wilkinson & Treas, 2011). The push for making patient care safer initiated the need for computerized health records (IOM, 1997, 2003). The IOM lead the way in

computerized health records through sponsoring studies and creating reports in the 1990s and early 2000, which called for adoption of computerized records by 2010 and described their key capabilities (Gartee & Beal, 2012; IOM, 1997; 2003). The electronic health record, at its full capacity, is intended to improve patient-centered care and coordination of care through enhanced access to patients' health information by all members of the health care team (U.S. Department of Health and Human Services, [HSS], 2011). The electronic health record (EHR) was named as such by the IOM in its 2003 report, but during its evolution, it has had various names, such as computer-based patient record, electronic medical record, computerized medical record, and electronic chart, among others (Gartee & Beal, 2012). Today, EHR is defined as "a longitudinal electronic record of patient health information generated by one or more encounters in any care delivery setting" (Healthcare Information and Management Systems Society, [HIMSS], 2014a, para. 1). According to the IOM (2003):

> An EHR system includes (1) longitudinal collection of electronic health information for and about persons, where health information is defined as information pertaining to the health of an individual or health care provided to an individual; (2) immediate electronic access to person- and population-level information by authorized, and only authorized, users; (3) provision of knowledge and decision-support that enhance the quality, safety, and efficiency of patient care; and (4) support of efficient processes for health care delivery. (p. 1)

The 2003 IOM report aimed to identify the common expectations of the EHR capabilities or functions as requested by the Department of Health and Human Services (HHS), in order to aid health care organizations in selection of an EHR and vendors in its

development. The eight core functions of EHRs are "health information and data; result management; order management; decision support; electronic communication and connectivity; patient support; administrative processes; and reporting and population management" (IOM, 2003, p. 7). The IOM (2003) report also identified the primary and secondary uses of EHRs with primary uses being patient care delivery, patient care management, patient care support processes, financial and other administrative processes, and patient self-management, and the secondary uses identified as education, regulation, research, public health, homeland security, and policy support (p. 5).

Suggested advantages of EHRs are enhanced communication among providers, real time data, time savings, improved access, improved quality of care through functions such as embedded protocols, automated prevention assessments based on patient conditions, various alerts, and facilitation of evidence-based practice due to aggregated data (Sewell & Thede, 2013; Wilkinson & Treas, 2011). Disadvantages are listed as high costs, downtime due to power outages or updates, relative difficulty to learn, resistance of users, redundancy of information in some EHRs (Wilkinson & Treas, 2011), and lack of interoperability across various agencies, departments, or disciplines (Sewell & Thede, 2013). Similar to the paper records, the issue of patient confidentiality can be viewed as an advantage or disadvantage. According to Wilkinson and Treas (2011), the information in EHRs cannot be lost and features such as tracking access, security clearances, user passwords, authorized access, and screen protectors guard patient confidentiality. Other sources suggest that patient confidentiality is compromised with EHRs due to, for example, inadequate safeguards, employee negligence, or unauthorized access (Ponemon

Institute, 2014; Schultz, 2012; Redspin, 2014; U.S. Department of Health and Human Services [HHS], 2013).

The Transition to the Electronic Health Record

In 2004, following the 2003 IOM report, the Bush administration mandated all Americans to have an EHR by 2014, with intent for clinical agencies to transition to full use of electronic health records. To help establish this goal, incentives have been provided by the American Recovery and Reinvestment Act and have been available through Medicaid and Medicare to the providers who use electronic health records (Agency for Healthcare Research and Quality, [AHRQ], 2011). In order to receive the monetary incentives, hospitals are expected to reach meaningful use, as defined by federal standards (Jha et al., 2011). Meaningful use outlines specific objectives aimed at assuring that electronic health records meet the criteria of improving health care (Blumenthal & Tavenner, 2010). The objectives range from "drug interaction and drug allergy checks ... to reporting on quality measures" (Centers for Medicaid & Medicare Services [CMS], 2014a, para.1). The three main components of meaningful use are: using the electronic health record in a meaningful manner, using it to improve quality of care, and submitting clinical quality measures (CQMs) (CMS, 2010). "CQMs measure many aspects of patient care including: health outcomes, clinical processes, patient safety, efficient use of healthcare resources, care coordination, patient engagements, population and public health, and clinical guidelines" (CMS, 2013, para 1).

Nurses' Role in the Electronic Health Record

The majority of hospitals have transitioned at least to a basic electronic health record (Gabriel, Furukawa, Jones, King, & Samy, 2013). Beginning in 2015, hospitals

that have not transitioned to the EHR may not be entitled to some Medicare and Medicaid reimbursements (CMS, 2014b). It is anticipated, then, that by the year 2015, most agencies have replaced paper charts with the EHR (CMS, 2014b). Consequently, the EHR will be the norm for students now entering nursing practice. Nurses are key end-users and, accordingly, central both in developing and evaluating EHRs (Wilkinson & Treas, 2011). "Adaption to electronic documentation requires a change in processes and workflow design" (Sewell & Thede, 2013, p. 320), and subsequently, nurses must obtain necessary EHR competencies and take an active role in choosing and designing them (Sewell & Thede, 2013). Nurses must be aware of their role in relation to the EHRs and "understand what systems can do to help us efficiently manage information that relates to patient care" and finally recognize that EHR support improved patient outcomes through "discovery of evidence-based practice" (Sewell & Thede, 2013, p. 320). EHRs should not have a negative impact on nurses' care, nor should nurses expect that they simply mimic the paper record (Sewell & Thede, 2013). The American Nurses Association's (ANA, 2009) position is that registered nurses must be "involved in the product selection, design, development, implementation, evaluation and improvement of information systems and electronic patient care devices used in patient care settings" (para 3).

The IOM (2010c), in its *Future of Nursing: Leading Change, Advancing Health* report, addressed the importance of nursing in improving the health care system for the future and made recommendations for transforming nursing practice. This report stated, "There is perhaps no greater opportunity to transform practice than through technology" (IOM, 2010c, p. 136). Nursing practice in any setting is seen as being influenced by EHRs in that they will "fundamentally change the way in which RNs plan, deliver,

document, and review clinical care" (IOM, 2010c, p. 140). As the largest health care profession, and often, the workforce with the closest patient interactions, nurses use technology the most and consequently are in the preeminent position to have the paramount insight into the best solutions regarding technology (IOM, 2010c). Nurses are seen as having a central part in the accurate collection of meaningful use data, as well as, adding to the objectives of the meaningful use data; however, their opinions are not frequently sought (IOM, 2010c).

Informatics Competencies and Initiatives

Given the technological changes in the clinical environment, advancing nursing curriculum to include EHRs is vital if we are to prepare nurses who will be central contributors in informatics management within their practice (McNeil, Elfrink, Beyea, Pierce, & Bickford, 2006). Nursing curricula has always included nursing documentation as one of the core competencies; however, now that documentation has transitioned to an electronic form, curriculum must transform to reflect this change. "Change is not a choice, but a requirement in any dynamic organization or curriculum" (Warner & Misener, 2009, p. 92). A curriculum plan that exposes students to information technologies prepares students for their clinical rotations and broadens their learning to include "the use of technology to transform the health care delivery system and the regulatory requirements from the Joint Commission and other bodies that govern patient care and documentation" (Hebda & Calderone, 2010, p. 59).

The TIGER initiative was created in 2004 to define and develop the informatics competencies that all practicing and graduating nurses are recommended to possess. A summit with the stakeholders was held in 2006 to define, publish, and carry out the

planned action steps. In 2007, after more volunteers joined the TIGER initiative, nine collaborative teams were created and named based on their concentration on one of the nine key areas: “Standards & Interoperability; National Health Information Technology (IT) Agenda; Informatics Competencies; Education & Faculty Development; Staff Development; Usability & Clinical Application Design; Virtual Demonstration Center; Leadership Development; and Consumer Empowerment & Personal Health Record” (TIGER, 2009, p. 2). Each team then researched their topic area with a focus on raising the awareness of nursing stakeholders in one of the three TIGER initiative focus areas: “workforce development,” “national health IT initiatives,” and “improving technology solutions” (TIGER, 2009, p. 3-5). In 2008, each team published a report with its findings and recommendations. The work of two teams was particularly significant for the electronic health records agenda for nursing academia: The TIGER Informatics Competencies Collaborative Team and the Education and Faculty Development Collaborative Team (TIGER, 2009, p. 3).

In their report, the TIGER Informatics Competencies Collaborative team defined the minimum informatics competencies that all today's graduating nursing students and practicing nurses must possess. This team's work was foundational to the nursing workforce's preparation to use the electronic health record. The team further developed a model that organized the competencies into three categories: Basic Computer Competencies; Information Literacy; and Information Management (TIGER, 2009, p. 14). This allowed an easier means for proceeding through the competencies in an order of mastering the three categories. Using electronic health records is the principal process for nurses in mastering clinical information management (TIGER, 2009).

The Education and Faculty Development Collaborative Team's specific focus was on “engaging stakeholders that influence and deliver nursing education and licensing, including academic institutions representing all levels of nursing education, educationally focused professional organizations, federal organizations that fund nursing education, and state boards of nursing” (TIGER, 2009, p.3). The team’s efforts were largely successful, as many of the stakeholder organizations, such as the AACN, the NLN, and the Health Resources and Services Administration (HRSA) supported this team's recommendations to include the minimum informatics competencies in all nursing curricula. The NLN (2008) called for nursing graduates to be competent using informatics tools such as the electronic health record. Furthermore, it outlined competencies in information management and patient care technology to include skills in electronic health records. HRSA acknowledged the need for faculty development and provided federal funds for such projects through the Integrated Technology into Nursing Education and Practice (ITNEP) Initiative (TIGER, 2009). The AACN designed its Quality and Safety Education for Nurses (QSEN, 2011) to include informatics competencies, in its six core safety and quality competencies. For students in pre-licensure nursing programs, the informatics competencies include skills in navigating, documenting patient care, and protecting confidentiality in utilizing electronic health records (QSEN, 2011). AACN also included competencies in informatics in the new essentials of baccalaureate education (AACN, 2008).

Nursing Curriculum and the Electronic Health Record

Creating a nursing workforce that can practice in the rapidly changing health care environment will require faculty who embrace change and are both competent and

committed to teaching documentation with the EHR. According to the 2008 position statement of the NLN, nurse educators are not preparing nursing graduates who are competent in using informatics tools. The NLN (2008) recommends that nurse faculty incorporate informatics into the curriculum, participate in faculty development programs, designate an informatics champion, and collaborate with clinical agencies to ensure hands-on experience for nursing students. In an NLN national survey detailing informatics requirements in nursing curricula, Thompson and Skiba (2008) found that the majority of the respondents included some informatics content in their courses. However, EHRs were rarely used in clinical simulation or included within courses. Clinical exposure was reported as the means most commonly used to teach about EHRs (Thompson & Skiba, 2008). However, the survey did not specify if the students were able to have access to the EHRs themselves or if they simply observed the clinical staff using them (Thompson & Skiba, 2008). According to the authors, clinical exposure as a method to teach electronic documentation is completely reliant on the availability of clinical resources as well as the assistance of the clinical faculty.

Fetter (2009a) surveyed personal perceptions of graduating nurses regarding their information technology competencies. The students felt ill prepared to use information technology in the clinical setting. The students in the survey wanted more exposure to clinical information systems and rated their competencies lowest in using applications to document care and to enter data (Fetter, 2009a). The respondents also wanted more use of information technology in clinical simulations and desired its integration into all nursing courses (Fetter, 2009a). A recent survey of new nurses revealed that only 20% reported having exposure to EHRs in their nursing programs (Miller et al., 2014).

Due to the economic climate, it is unlikely that clinical agencies will have adequate resources to include nursing students in the agency's electronic health record training (Gabriel et al., 2013). Significant obstacles to implementing EHRs in nursing academia by relying on exposure during students' clinical experiences include time constraints and agency barriers, such as system access, security concerns, and reliance on clinical staff (Bond, 2007; Borycki, Joe, Armstrong, Bellwood, & Campbell, 2011; Curry, 2011; Fetter, 2009a; Fetter, 2009b; Mahon et al., 2010; Nickitas, Nokes, Caroselli, Mahon, & Lester, 2010). In order for the new nurses to manage in this electronic era upon graduation, the faculty must step up to the era of technology and teach nursing documentation as it is done in today's clinical arena (Nickitas et al., 2010).

The TIGER (2009) initiative recognized the inadequacy of nursing schools relying on clinical sites for the education of students in using electronic health records and was aware of the limited demonstration resources available for academia. The TIGER Virtual Demonstration Center (VDC) collaborative team had a vision of a virtual learning environment (VLE) “to provide exposure and education to nurses on a variety of technologies and information systems available today and in the future” (TIGER, 2009, p. 4). The Virtual Learning Environment has since been launched, providing, for a small fee, a “dynamic content and real-time accessibility to knowledge through Webinars by industry experts, in-depth education sessions, fact sheets, white papers, and other communications” (Schlak, 2013, p. 57). Most recently, in September of 2014, the TIGER has transitioned to the Healthcare Information and Management Society (HIMMS, 2014b), which will continue the TIGER impetus and its Virtual Learning Environment along its other clinical informatics activities.

Scholarship and the Electronic Health Record

A great deal of discussion among nurse scholars exists in literature about concerns, personal experiences, barriers, and suggestions in implementing electronic health records in nursing academia (Borycki et al., 2011; Bristol, 2012; Brooks & Erickson, 2012; Connors, Warren, & Weaver, 2007; Curry, 2011; Gloe, 2010; Meyer et al., 2011; Skiba, 2009, 2010; Taylor et al., 2010). Although tradition or personal experience may be recognized as part of the discipline of nursing as an art and science, research is acknowledged as the pinnacle of obtaining nursing knowledge (Polit & Beck, 2012). While scholarly discussion remains an important avenue for problem solving within the discipline of nursing, original research is needed in order to "develop trustworthy evidence about issues of importance to the nursing profession, including nursing practice, education, administration, and informatics" (Polit & Beck, 2012, p. 3).

Some disseminated research exists examining nurses' attitudes and satisfaction, as well as perceived barriers and facilitators with EHR implementation in the practice setting (Smith, Morris, & Janke, 2011; Whitaker, Aufdenkamp, & Tinley, 2009). However, currently, there is a vast paucity in disciplined research on implementing electronic health records in nursing academia, particularly from the viewpoint of faculty. Few studies have discussed faculty's perceptions, teaching enthusiasm, teaching beliefs, and teaching practices with the implementation of the EHR in academia (Bani-issa & Rempusheski, 2014; Mahon et al., 2010; Spencer, Choi, English, & Girard, 2012). Further research is needed to explain how faculty are supported during the EHR implementation process, what resources and individual strategies exist, and what specific outcomes occur that improve the process of faculty implementing electronic health

records in nursing academia. Furthermore, although some frameworks, such as the self-efficacy (Mahon et al., 2010) and the nurse-computer interaction (Whitaker et al., 2009) frameworks, have been used to explain the phenomena, presently, no practice theory specific to the process of implementing electronic health records exists either in nursing practice or academia.

Statement of the Problem

The goal of electronic health records is to make health care safer and improve patient outcomes. Conversely, incorrectly entered data in the electronic health records can lead to patient harm (ECRI Institute, 2014). Veritably, data integrity with electronic health records is ranked as the number one patient safety concern (ECRI Institute, 2014) and the fourth health technology hazard (ECRI Institute, 2013) for health care organizations. Nurses have a vital role in safe utilization of EHRs. In order for nurses to contribute to quality patient information at the bedside and improve the safety of patient care, students must be competent in using electronic health records upon graduation.

The NLN (2008) position statement asserts that nurse faculty are not preparing nursing graduates who are competent in using informatics tools, such as the electronic health record. Lack of knowledgeable nursing faculty or their lack of interest in embracing the use of electronic health records has been suggested as a significant barrier (Curry, 2011; Meyer et al., 2011; Taylor et al., 2010; Thompson & Skiba, 2008). Teaching and learning, as well as curriculum development, are central responsibilities of nurse faculty. Therefore, the critical factors that influence faculty attitudes and behaviors about implementation of electronic health records in nursing academia must be explored.

Purpose of the Study

The purpose of this grounded theory study was to develop a substantive theory of the process of faculty transitioning to teaching nursing documentation with the electronic health record and the factors that influenced faculty in the transition. It was anticipated that the findings of this qualitative grounded theory study could provide an understanding of the factors that influence faculty attitudes and behaviors about implementation of electronic health records in nursing academia.

Research Questions

The three research questions that guided this study were:

1. What are the critical factors that influence faculty attitudes and behaviors about implementation of electronic health records in nursing academia?
2. What are the strategies used by nursing faculty in the process of implementing electronic health records in nursing academia?
3. What challenges do nursing faculty encounter in the process of implementing electronic health records in nursing academia?

Philosophical Underpinnings

Nursing inquiry has been mainly carried out within two paradigms: positivist and constructivist (Polit & Beck, 2012). Quantitative research methods are associated with the positivist paradigm, while qualitative methods are within the constructivist paradigm (Crotty, 2003; Polit & Beck, 2012). The positivist assumption is that through scientific research, objective truth and meaning can be achieved, while the key constructivist assumption is that people construct meaning as they engage and interpret the environment in which they are and that no objective truth exists (Crotty, 2003). Philosophical

underpinnings enlighten the underlying assumptions, inform research, and lay the foundation for the methodology. Moreover, philosophical underpinnings provide the context for the research process and "ground its logic and criteria" (Crotty, 2003, p. 7). The philosophical underpinnings of this study followed that of qualitative research embedded in constructivism and guided by pragmatism and symbolic interactionism of grounded theory, specifically the assumptions of Strauss and Corbin.

Qualitative Research

Qualitative research originated with disciplines such as sociology, anthropology, and philosophy (Boswell & Cannon, 2014). Nursing researchers began to use qualitative research methods increasingly in the 1970s and 1980s (Boswell & Cannon, 2014) with an emergence of qualitative journals in the 1990s, such as the *Qualitative Health Research* (Polit & Beck, 2012). Qualitative research is a way to explore the meaning that people or groups of people assign to a problem without overlooking situational complexities (Creswell, 2009). Qualitative research allows seeing the world through the participants' eyes with the emphasis being on holism and on the interactions between individuals, others, and the context of the experience (Munhall, 2012).

Qualitative approach is best when little research has been done on the phenomenon, the variables to be examined are not known, the topic has not been studied with the particular group of people, or an existing theory does not pertain to the group to be studied (Creswell, 2009). Research questions in qualitative studies are exploratory and rather than testing hypothesis, they generate them (Corbin & Strauss, 2008). The intent is to "discover, rather than test variables" (Corbin & Strauss, 2008, p. 12). Several methods to conduct qualitative research exist, such as ethnography, narrative inquiry,

case study, phenomenology, and grounded theory (Creswell, 2013). Regardless of which method of qualitative research is used, they all follow the basic assumptions of qualitative research (Munhall, 2012).

When conducting qualitative research, researchers accept ontological, axiological, epistemological, methodological, and rhetorical assumptions characteristic of the qualitative paradigm (Creswell, 2013). Ontological assumption refers to the nature of reality (Creswell, 2013), and qualitative research assumes that multiple realities exist and that they are dynamic rather than static (Munhall, 2012). Epistemological assumption relates to what can be seen as knowledge and what is the nature of the researcher in relation to the participant (Creswell, 2013). In qualitative research, the distance between the researcher and participant is kept at minimum, meaning that the researcher attempts to keep close to the participants and recognizes participants' views as central (Creswell, 2013). The axiological assumption speaks to the role of values in research, and in qualitative research, axiological assumption means that "researchers make their values known in a study" (Creswell, 2013, p. 20), keenly reporting any possible biases that they may have. Hence, reflexivity of the researcher is important and must be evident in the written final qualitative report (Creswell, 2013). Methodological assumption answers questions about the process of research, which in qualitative research is inductive rather than deductive (Creswell, 2013). The flexible nature of study questions is another methodological assumption of qualitative research, meaning that during study, the questions may change (Creswell, 2013). The rhetorical assumption refers to the nature of language in research. "Qualitative research is known for giving voice to people, to hearing people's own personal narrative, and using the language of our participants in

research" (Munhall, 2012, p. 4). In reporting the findings of qualitative studies, participants' language is used in form of narratives using first person (Munhall, 2012).

Grounded Theory

The outcome of grounded theory is to inductively arrive at a theory, which is informed by the views of the participants who are experiencing the specific process being explored (Creswell, 2013). Grounded theory is used when the goal is to develop a theory explaining human behavior, especially, as it relates to "developmental transitions, and situational challenges" (Wuest, 2012, p. 230). Grounded theory originated from two sociologists, Glaser and Strauss, who during their joint research on dying in hospitals formulated systematic methodological strategies, the constant comparative method (Creswell, 2013). Their book, *The Discovery of Grounded Theory* (1967), first expressed these strategies and encouraged developing theories inductively from research grounded in data rather than deductively testing hypotheses from existent theories (Polit & Beck, 2012). Grounded theory combined two research traditions due to the researchers' backgrounds. Glaser received his training from Columbia University with a positivist tradition and quantitative research methods, while Strauss came from University of Chicago, with an extensive past in qualitative research tradition and was influenced by symbolic interactionism and pragmatism (Polit & Beck, 2012). Glaser's positivist training resulted in the focus on systematic coding of the data and theory development, while the influence of symbolic interactionism and pragmatism on Strauss, resulted in the emphasis on humans as active, rather than passive participants and the ideas of process with relationships among the situations.

Later, Glaser and Strauss ultimately disagreed on the grounded theory methods, and Glaser's method became to be known as the classic grounded theory (Scott, 2009). Strauss began to collaborate with a nurse researcher, Juliet Corbin. The Strauss and Corbin (1998, 2008) method to grounded theory has its philosophical underpinnings solidly in the symbolic interactionism and pragmatism. Central to the Strauss and Corbin's (1998, 2008) approach is that great variety exists in people's actions and interactions with situations that they come across with. Furthermore, people shape and change their environment through actions and interactions. Exploration is directed both toward problematic and routine situations due to their assumptions of "inevitability of contingencies, the significance of process, and the complexity of phenomena" (Corbin & Strauss, 2008, p. 6).

Since Glaser and Strauss, and then Strauss and Corbin, grounded theory has evolved towards constructivism, with writers such as Charmaz and Clarke (Creswell, 2013). Charmaz (2006) assumes that grounded theory is constructed through the researcher's past experiences and interactions with the participants. She believes that neither data nor theories are discovered, but rather the data is co-constructed, and the emerging theory, therefore, is an interpretation of the participants' reality, not an exact representation of it (Charmaz, 2006). Charmaz's constructivist approach has been said to be well fitting with the values of the nursing profession (Higginbottom & Lauridsen, 2014). However, critics of the constructivist approach to grounded theory claim that the assumptions are already imbedded within the pragmatism and symbolic interactionism paradigms (Strübing, 2007). "The epistemology generally found embedded in symbolic interactionism is thoroughly constructionist in character" (Crotty, 2003, p. 4).

The key tenets of grounded theory are constant comparison and theoretical saturation (Creswell, 2009). Constant comparison refers to the process in which collected data is constantly compared to other previously collected data for similarities and differences in the emerging concepts (Creswell, 2013). The researcher goes back and forth between gathering new data and already collected data looking for patterns in efforts to ground the emerging theory in data (Wuest, 2012). Theoretical saturation refers to the point when no further concepts in comparison to already collected data emerge from new data (Wuest, 2012). In grounded theory, then, sample size is not predetermined, but rather depends on "whether a full range of variation in conceptual properties is identified" (Wuest, 2012, p. 234).

Pragmatism

Pragmatism dates back to late 19th century with ideas of Pierce, James, and Dewey (Hookway, 2008). The main tenets of pragmatism are practicality and focus on consequences rather than antecedents (Bryant & Charmaz, 2007). Pragmatism is concerned with practical consequences and emphasizes the value of experiences. Pragmatism is especially concerned with whether inquiry is going to make a practical difference and be useful. Reality is seen as being continually evolving and constructed by active beings rather than simply existing out there (Strübing, 2007). Reality exists in dynamic experience and is an element of the actor's environment. The methodological principle behind pragmatism is that meaning is found through study of actions in particular contexts (Crotty, 2003). In pragmatism, inquiry begins with a problem (Corbin & Strauss, 2008). When a problem is identified, the task is to understand it through explaining its constituents and recognizing relationships among them (Hookway, 2008).

Dewey, in particular, believed in inquiry as an “iterative-circular” process, practical, and concerned with assessing situations people are involved in (Strübing, 2007, p. 580). Corbin and Strauss (2008) refer to this circular process in their discussion of the philosophical foundation and the nature of knowledge of their methodology: “Knowledge leads to useful action, and action sets problems to be thought about, resolved, and thus is converted into new knowledge” (p. 5). Key assumptions of pragmatists are that truth is relative to the time being and may be critiqued entirely or partially wrong, some knowledge is accumulative and bases for evolution of thought, “knowledge can be useful for practice or practical affairs,” there is an interplay of practice and knowledge, and action is crucial (Corbin & Strauss, 2008, p. 4).

Symbolic Interactionism

Symbolic interactionism originated from pragmatism, particularly from writings of Mead (Crotty, 2003; Franzoi, 2007). However, the term symbolic interactionism was not used by Mead but rather coined by Blumer who was Mead's student (Franzoi, 2007). The methodological principle behind symbolic interactionism is that action, situation, and meanings attached to them are seen from the actors' (participants) viewpoint (Crotty, 2003). Interaction refers to the researcher's earnest endeavor to take the viewpoint and role of the participants, while symbolic refers to language and other communication tools in that interaction. Through dialogue with symbols, such as language, researchers "become aware of the perceptions, feelings, and attitudes of others and interpret their meanings and intent" (Crotty, 2003, p. 75). Central to symbolic interactionism is that through interacting with others, people constantly construct and reconstruct the meaning of their life or situations and that symbols, such as words or gestures, are key components

in the interactions (Franzoi, 2007). Symbolic interaction is concerned with the back and forth mutual interaction and the meaning that we make in interaction with others and society. People act based on their interpretation of a situation and others' behavior. Symbols have meaning and can be different in various groups and based on the context. Blumer (1969) expressed three assumptions of symbolic interactionism. The first assumption asserts that "human beings act toward things on the basis of meanings that the things have for them" (Blumer, 1969, p. 2), with things referring to physical objects, other humans, groups, institutions, guiding ideals, activities of others, or situations. The second assumption declares that "the meaning of such things is derived from, or arises out of, the social interaction that one has with one's fellows" (p. 2). In third assumption, Blumer (1969) explained that "these meanings are handled in, and modified through, an interpretative process used by the person dealing with the things he encounters" (p. 2).

Rationale for Qualitative Study

A qualitative approach was an appropriate method for this study because it explored subjective and multiple realities of nurse faculty as they interacted with others in the complex context of nursing academia. Through qualitative research, insight was gained, grounded in nurse faculty's experiences of implementing electronic health records in nursing academia. More specifically, Strauss and Corbin's (1998, 2008) grounded theory approach was an appropriate methodology for studying the phenomena of interest in this study because implementing electronic health records is a social process that faculty are experiencing. Societal memberships, which are often complicated and coinciding, affect people's viewpoints (Strauss, 1993). Faculty influence each other's attitudes and behaviors related to the process of teaching nursing documentation.

Teaching electronic health records is also a developmental transition from teaching paper-based documentation. The electronic health record has brought an inevitable change in how nursing documentation is taught, after a long period of permanence. Faculty are comfortable teaching paper documentation but are likely to experience a situational challenge, meaning that multiple factors will affect their attitudes and behaviors, as they encounter the process of implementing EHRs. As the electronic health record is replacing paper documentation, modifying and restructuring faculty's attitudes and behaviors will likely occur within the social context of nursing academia.

Pragmatism was appropriate in guiding this study because reality is evolving and constructed by the nurse faculty who were experiencing the dynamic process of implementing electronic health records within the environment of nursing academia. Furthermore, implementing electronic health records was action oriented and had practical consequences. In order to understand the dynamic process of faculty implementing electronic health records, an iterative-circular process to inquiry was necessary and so was the realization that truth is relative to time with the ever-evolving technology in health care. Finally, interplay of practice and knowledge exists as faculty were experiencing the process of implementing electronic health records.

Symbolic interactionism was appropriate in framing this study because faculty, when implementing electronic health records, engaged in social interaction with others, such as students, patients, and each other. They also interacted with the academic institution and the situation of teaching nursing students. In order to truly understand the meaning that faculty asserted to the process of implementing electronic health records in the context of nursing academia, their viewpoint was central. A key element of a

methodology that is guided by symbolic interactionism is that researcher attempts to take the viewpoint and role of the participants. Research within the symbolic interactionism paradigm involves face-to-face interactions (Franzoi, 2007), such as the method of interviewing for data collection. Furthermore, reality within symbolic interactionism is always modified and changing and, therefore, research within this paradigm focuses on social processes that are recurrently modified (Franzoi, 2007). Nursing education is under constant change, especially as it relates to the advances in technology, making symbolic interactionism appropriate for framing the social process of implementing electronic health records in nursing academia. Furthermore, symbolic interactionism deals with "language, communication, interrelationships and community" (Crotty, 2003, p. 8), all of which were essential elements imbedded in the process of faculty implementing electronic health records in nursing academia.

Significance of the Study

Students who are competent in utilizing EHRs will be ready for practice. Ultimately, students who are competent in using EHRs upon graduation will contribute to quality patient information at the bedside and improve the safety of patient care. Faculty play a vital role in implementing electronic health records in academia. A grounded theory study may explain the process of faculty implementing EHRs in nursing academia and therefore provide understanding of the factors that influence their attitudes and behaviors in the process. There is paucity in research from the faculty perspective; therefore, this study has significance to nursing and implications for the future of nursing education, nursing practice, nursing research, and health and public policy.

Significance to Nursing

Ideally, integrating electronic health records into nursing curriculum can lead to advantages for both students and future employers (Connors et al., 2007). Students have reported that utilizing an electronic health record helps them learn terminology and focus on solving problems, as well as provides them with cues to help with documentation (Connors et al., 2007). Employers have reported a reduction in the time it takes to orient new graduates to the electronic health records documentation (Connors et al., 2007). Implementation of electronic health records in nursing academia shapes nursing curriculum for the future and will assure a curriculum that is future thinking. Grounded theory has the capability of advancing nursing knowledge through explaining the social process that nurse faculty are experiencing when implementing electronic health records. The science of nursing is advanced through grounded theory research, which results in a substantive theory to guide further research.

Implications for Nursing Education

Teaching documentation skills has continuously been part of the nursing curriculum. In order for new nurses to manage in the new electronic era upon graduation, the faculty must teach nursing documentation the way it is done in the clinical area (Nickitas et al., 2010). A recent survey of new nurses revealed that only 20% of them reported having exposure to EHRs in their nursing programs (Miller et al., 2014). "Change is not a choice, but a requirement in any dynamic organization or curriculum" (Warner & Misener, 2009, p. 92). The development of theory, through the grounded theory method, may help in explaining the process of faculty implementing electronic

health records and, consequently, guide designing a much-needed faculty development program for integrating EHRs to the nursing curriculum.

Implications for Nursing Practice

The EHR will be the norm for students now entering nursing practice. The information technology skills found most essential to nurses upon entry into nursing practice are nursing-specific software skills, such as utilizing electronic health records in bedside charting and medication administration (McCannon & O'Neal, 2003). Barriers such as security concerns, as well as overwhelming student and faculty training needs limit hospitals in educating today's nursing students about the EHR (Fetter, 2009b). Additionally, hospitals that have adopted EHRs still face internal challenges, such as inadequate training for their employees (Gabriel et al., 2013). Consequently, hospitals do not have the resources available to teach students about the EHR. The faculty must step up to the era of technology and teach nursing documentation with the EHR in order to assure a more seamless transition from education to practice for our new nurses. A theory constructed through the grounded theory method may explain how faculty are supported over the transitioning process, what resources and individual strategies, and what specific outcomes exist that improve the process of faculty implementing the electronic health record in nursing academia.

Implications for Nursing Research

Currently, there is a lack of research in implementing electronic health records in nursing academia. No framework currently exists, specific to the process of nursing faculty transitioning from teaching paper-based nursing documentation to utilizing the electronic health record to guide further research. The development of theory, specific to

the faculty's process of implementing electronic health records in nursing academia, through the grounded theory method, may offer a framework for additional research and may aid in development of an instrument for additional research through quantitative methods.

Implications for Nursing Health/Public Policy

A curriculum plan that exposes students to information technologies prepares students for their clinical rotations and broadens their learning to include “the use of technology to transform the health care delivery system and the regulatory requirements from the Joint Commission and other bodies that govern patient care and documentation” (Hebda & Calderone, 2010, p. 59). A need exists for national guidelines and policies for agency-academia collaboration in teaching nursing students documentation with the electronic health record (Fetter, 2009b). The IOM (2010b) calls for collaboration between schools of nursing and accrediting bodies, as well as healthcare agencies, in order to ensure that nursing curricula includes competencies necessary for graduates to be able to meet the needs of current and future patient populations. Creating a nursing workforce that can practice in the rapidly changing health care environment will require faculty who embrace change and are both competent and committed in teaching documentation with the electronic health record. Understanding gained from this study may provide insight into the challenges that avert faculty from making this commitment and may offer guidance in creating guidelines and policies for collaboration of the nursing academia and health care agencies.

Scope and Limitations of the Study

The purpose of this grounded theory study was to develop a substantive theory of the process of faculty transitioning to teaching nursing documentation with the electronic health record and the factors that influence faculty in the transition. This study utilized purposive and theoretical sampling, which are sampling techniques characteristic to grounded theory. Therefore, the scope of this study was to gather information through face-to-face interviews from a purposive sample from a population of nursing faculty having transitioned within the past 5 years to utilizing the electronic health record in teaching documentation to nursing students in various nursing schools in Florida. The scope furthermore included theoretical sampling in the form of a focus group interview of nursing faculty with at least 2 years of experience teaching documentation with the electronic health record, in order to facilitate substantiating the evolving theory.

The innate limitations of this study included the prospect of faculty participants not being entirely honest in their responses, lack of male participants, the researcher being a novice and thus possibly lacking objectivity and finally the possibility that various academic institutions may have different support available for the faculty and that they utilize various electronic health record vendor products.

Chapter Summary

This chapter discussed the background and significance of this study. The purpose of this grounded theory study was to develop a substantive theory of the process of faculty transitioning to teaching nursing documentation with the electronic health record and the factors that influence faculty in the transition. The research questions and the nursing problem supported the decision to approach this inquiry with a qualitative

method. To gain a better understanding of the faculty process of implementing electronic health records in nursing academia, a grounded theory approach was used. Lastly, this chapter explored the scope and limitations of this study. Chapter Two will follow with a review of literature.

CHAPTER TWO

REVIEW OF THE LITERATURE

The purpose of this grounded theory study was to develop a substantive theory of the process of faculty transitioning to teaching nursing documentation with the electronic health record and the factors that influenced faculty in the transition. It was anticipated that the findings of this qualitative grounded theory study could provide an understanding of the factors that influence faculty attitudes and behaviors about implementation of electronic health records in nursing academia.

It is anticipated that by 2015, most agencies will have replaced paper charts with the EHR (CMS, 2014). Nursing curricula must transform to reflect this change. The EHR will be the norm for students now entering nursing practice. The NLN (2008) asserted that nurse educators are not preparing nursing graduates who are competent in using informatics tools, such as the EHR. Lack of knowledgeable nursing faculty or their lack of interest in embracing the EHR has been reported as a significant barrier (Curry, 2011; Meyer et al., 2011; Taylor et al., 2010; Thompson & Skiba, 2008). A search of relevant literature across disciplines was conducted to explore the phenomenon of faculty implementing electronic health records.

Using Health Reference Center Academic (Gale), Academic One File (Gale), Health Source: Nursing/Academic Edition (EBSCO), and ProQuest Direct search engines, the following computerized databases were used for this search: Academic Search Complete, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Educational Resource Information Center (ERIC), Library, Information & Technology Abstracts, and MEDLINE. The key words used in the search were

electronic health record, electronic medical record, clinical information systems, nursing, faculty, education, academia, and implementing. Citations were limited by language to English and by subject to exploration of the concepts. A limitation was imposed to find literature published in peer-reviewed journals since 2009, except for where classics and theoretical works were sought. Sixteen research studies were reviewed in which the experience of implementing EHRs was explored. The literature review addressed research literature within the disciplines of nursing and medicine that pertained to implementing electronic health records in nursing practice, nursing academia, and medical education. Synthesis of the literature revealed what is known and not known about this phenomenon. The literature review is divided into historical context and the major research literature attending to nurses' experiences with electronic health records, students' experiences with electronic health records, and faculty's experiences with electronic health records. An abundance of research literature of nurses' experiences with the implementation of the EHR in nursing practice was found, and some research exists from the student viewpoint. However, there is a lack of original research from the viewpoint of nursing faculty; therefore, one study was also included from the viewpoint of medical faculty. "Grounded theory is particularly useful when little is known about the area to be studied, or when what is known is from a theoretical perspective that does not satisfactorily explain what is going on" (Wuest, 2012, p. 230).

Historical Context

Florence Nightingale recognized that data in the patient records could be used to improve care and patient outcomes (Ozbolt & Saba, 2008). In the end of 1950s, Werley, a nurse researcher, was consulted by IBM regarding the possible uses of computers in

health care and had the vision “for using patient data stored in computer systems to investigate and improve quality of care” (Ozbolt & Saba, 2008, p. 199), which later emerged as nursing informatics. The first nursing computer applications in nursing care planning and documentation; the first comprehensive EHR system, which nurses helped to build in the El Camino Hospital in California came about in the 1970s (Ozbolt & Saba, 2008). During the same era, the Veterans Health Administration began to build its own EHR system. The aim of these EHR systems was to enhance the completeness of nursing documentation and to use nursing data to improve quality of care (Ozbolt & Saba, 2008). In the 1980s, nursing informatics courses were introduced into nursing schools, and the first graduate program in informatics opened. In 1992, the American Nurses Association (ANA, 2008) recognized informatics as a sub-specialty in nursing and now defines it as “a specialty that integrates nursing science, computer science, and information science to manage and communicate data, information, knowledge, and wisdom in nursing practice” (p. 1). Through informatics, nurses have the ability to transform health care and improve patient outcomes (Ozbolt & Saba, 2008).

“Patient safety is a primary concern and the one that drives many informatics initiatives” (Sewell & Thede, 2013, p. 9). After patients are discharged, information hosted in a paper chart is not easily used to learn from it (Sewell & Thede, 2013). The irrefutable aim of informatics in health care is for everyone to have an EHR with lifetime health information. While the focus remains first in primary data to facilitate care of individual patients, such as “capturing data at the point of care” (Sewell & Thede, 2013, p. 7); secondary data, such as analysis of aggregated intervention outcomes, is essential in improving patient care. The goal of EHRs, then, is not just to collect or store data but to

determine what can be done with the data, therefore making it useful (Gartee & Beal, 2012; Sewell & Thede, 2013).

Transitioning to EHRs in the United States has been driven largely by the efforts of the Institute of Medicine (IOM) through its several published reports: *The computer-based patient record: An essential technology for health care* (1997), *To err is human: Building a safer health system* (2000), *Crossing the quality chasm: A new health system for the 21st century* (2001), *Health professions education: A bridge to quality* (2003), *Key capabilities of an electronic health record system: Letter report* (2003), and *Health IT and patient safety: Building safer systems for better care* (2012). In 2004, the Bush administration mandated all Americans to have an interoperable EHR by 2014, and the Office of National Coordinator for Health Information Technology (ONC) was established. The Obama administration continued the EHR as a priority and in 2009 signed a law, the Health Information Technology for Economic and Clinical Health (HITECH) Act contained under the American Recovery and Reinvestment Act (ARRA), which offered $27 billion in federal monetary initiatives through Medicaid and Medicare to hospitals and primary care providers that adopt EHRs and demonstrate their meaningful use (U.S. Department of Health and Human Services, [HHS], 2014).

Since the HITECH act, the adoption of EHRs has significantly increased among U.S. hospitals with 93% of hospitals in 2013 having adopted EHR technology (Charles, Gabriel, & Furukawa, 2014). Beginning in year 2015, hospitals that have not transitioned to the EHR may not be entitled to some Medicare and Medicaid reimbursements (Centers for Medicare and Medicaid Services, [CMS], 2014b). It is anticipated, then, that by the year 2015, most agencies have replaced paper charts with the EHR (CMS, 2014b).

“Every nurse is going to need to understand and be able to efficiently use electronic health records” (Gartee & Beal, 2012, p. ix). EHRs are expected to be streamlining several nursing processes (McBride, Delaney, & Tietze, 2012). For example, electronic physician ordering reduces the need for nurses clarifying orders in order to prevent prescribing errors due illegibly written orders; medication scanning offers a double checking feature to prevent medication errors; automatic data transfer from bedside monitoring lessens the need for nurses' transcription; and clinical decision support presents reminders and warnings, which help keep track of care responsibilities. However, EHR and its processes intended to improve quality of care “could compromise patient safety if users aren't properly educated in its use” (McBride et al., 2012, p. 41).

The IOM (2003) report *Health professions education: A bridge to quality* recommended that five core competencies be included across all health professionals' education reform in order to manage 21st-century health care. One of the core competencies was utilizing informatics to “communicate, manage knowledge, mitigate error, and support decision making using information technology” (p. 4). The report pointed out that the informatics education is mostly delivered through specific certifications or degrees and not as part of pre-licensure education, specifically in the profession of nursing, often due to resource constraints, such as lack of technology or knowledgeable personnel (IOM, 2003). Other barriers for including informatics competencies in health professionals education are overcrowded curriculum, inadequate time for faculty to learn the necessary skills, lack of support from administrators, and not having straightforward access to experts in informatics (IOM, 2003).

Following the IOM report and Bush administration's plans, nursing leaders

formed organizations, such as the Alliance of Nursing Informatics (ANI), and began collaborative efforts, such as the TIGER initiative, in order to determine EHR competencies and push forward the education reform needed for nurses to "acquire the wisdom to use data, information, knowledge, and technologies that support them to transform nursing practice and health care systems" in the 21st-century demands (Ozbolt & Saba, 2008, p. 205). The TIGER initiative was formed in 2004 by various nursing stakeholders "to develop a shared vision, strategies, and specific actions for improving nursing practice, education, and the delivery of patient care through the use of health information technology" (TIGER, 2009a, p. 2).

The American Association of Colleges of Nursing (AACN, 2008) also designed its Quality and Safety Education for Nurses (QSEN, 2011) to include informatics competencies in its six core safety and quality competencies. For students in pre-licensure nursing programs, the informatics competencies, among others, include skills in navigating, documenting patient care, and protecting confidentiality in utilizing electronic health records (QSEN, 2011). AACN (2008) also included competencies in informatics in the new essentials of baccalaureate nursing education. Essential IV called for the graduate to be able to "document interventions related to achieving nurse sensitive outcomes," "evaluate data from all relevant sources ... to inform the delivery of care," "recognize the role of information technology in improving patient care outcomes and creating a safe care environment," "uphold ethical standards related to data security," and "participate in evaluation of information systems in practice settings" (AACN, 2008, p. 18, 19).

The National League for Nursing (NLN, 2008) also called for nursing graduates

to be competent using informatics tools, such as the electronic health record, in order to "ensure safe and quality care" (p. 1). In its most recent position statement regarding nursing education and informatics agenda, the NLN (2008) recommended that nurse faculty participate in faculty development to achieve informatics competency, designate an informatics champion in their school, integrate informatics into the curriculum, establish informatics evaluation criteria, and partner with clinical agencies to develop student and faculty competencies to assure "hands-on experience with informatics tools" (p. 5) and to showcase changes in clinical practice based on informatics.

Implementing electronic documentation in nursing education can be approached by relying on students' clinical experiences in agencies' EHR systems, forming agency-academia partnerships with sharing of the agency adopted EHR systems, or purchasing a simulated EHR system, often with a high price tag, from various educational vendor products, such as, Neehr Perfect®, SimChart®, Cerner Academic EHR®, and DocuCare®, among others. According to an NLN *National survey of informatics competencies in nursing curricula* (Thompson & Skiba, 2008), more than 60% of the faculty (n = 1,557) and administrator (n = 540) respondents alleged that they taught EHRs, clinical documentation systems, or bar coded medication administration content within their courses. However, they were rarely integrated into the courses, and only 26% reported them as part of simulation experiences (Thompson & Skiba, 2008). The most common method to teach EHR content was through exposure during clinical experiences, which was reported by 71 of the respondents (Thompson & Skiba, 2008).

Nevertheless, examples of implementing electronic documentation within nursing curriculum exist in the literature, such as John Hopkins University School of Nursing

adding electronic documentation into their simulation experiences (Taylor et al., 2010); State University of New York at Plattsburg adding simulated academic EHRs into their simulation and clinical courses (Curry, 2011); Indiana University-Purdue University Fort Wayne integrating an academic EHR into their undergraduate curricula; Saint Francis Medical Center College of Nursing integrating EHRs into simulation scenarios (Skiba, 2009); Maricopa Community College and Mesa Community College using web-based electronic documentation in simulation and clinical courses (Skiba, 2009); and Villanova University integrating EHRs into simulation and other courses (Skiba, 2009).

One of the earliest examples of EHR implementation in nursing academia is that by the University of Kansas School of Nursing, which formed a partnership with Cerner Corporation to design and implement an academic version of their PowerChart® EHR in their nursing curriculum in 2001 (Connors et al., 2007). Their program called *SEEDS*, *Simulated E-hEalth Delivery System*, aimed for nursing students to learn how to "document electronically, use decision-making tools, develop critical thinking skills, make decisions with data, understand the importance of structured nomenclature, acquire information at point of learning, search databases, and access evidence-based guidelines with supporting reference text" (Connors et al., 2007, p. 130) through the incorporation of the academic EHR into simulation experiences and clinical courses.

Another example of an industry-academia partnership is that of the College of St. Scholastica, which also collaborated with the Cerner Corporation in a project called *ATHENS, Advancing Technology, in Healthcare Education Now at St. Scholastica* (Johnson & Bushey, 2011, p. 134) in an effort to integrate an academic EHR across their undergraduate and graduate nursing programs. The objective of the ATHENS program

was for nursing students to develop informatics competencies as outlined by the TIGER report and the Essentials of Baccalaureate Education through clinical cases within the academic EHR (Johnson & Bushey, 2011). An example of academia-clinical partnership in home health care is that between Hunter-Bellevue School of Nursing and the Visiting Nurse Service of New York (Nokes et al., 2012). In their project, the undergraduate students were provided with an opportunity to practice point-of-care home care assessment documentation with a simulated EHR with an objective to ease their transition into working in home health care setting upon graduation (Nokes et al., 2012).

The road to successful implementation of EHRs in nursing academia is not without difficulties. Significant obstacles exist when implementing EHRs in nursing academia by relying on exposure during students' clinical experiences. Barriers include acquiring access, insufficient amount of available computers, security concerns, reliance on clinical staff, or unsupportive staff members (Bond, 2007; Borycki et al., 2011; Curry, 2011; Fetter, 2009a; Fetter, 2009b; Mahon et al., 2010; Nickitas et al., 2010). Additionally, the time required to train faculty and students to use either an academic simulated health record or clinical partner's health records systems have overwhelmingly been viewed as a barrier (Fetter, 2009b; Mahon et al., 2010; McNeil et al., 2006; Meyer et al., 2011). Furthermore, to form true agency-academia partnerships, due to the economic climate, it is unlikely that clinical agencies will have adequate resources to include nursing students in the agency's EHR training (Gabriel et al., 2013). Moreover, literature exists that indicates lack of knowledgeable nursing faculty or their lack of interest in embracing the use of the electronic health record as a significant barrier to

implementing EHRs in academia (Borycki et al., 2011; Curry, 2011; Fetter, 2009b; McNeil et al., 2006; Meyer et al., 2011; Taylor et al., 2010; Thompson & Skiba, 2008).

Currently, no nursing theory exists for providing a lens through which the phenomena of faculty implementing electronic health records could be explored. Nursing informatics is a young specialty, and much of the conducted research has been problem rather than theory driven (Effken, 2003). Effken (2003) found in her review of 75 informatics research articles that only eight of them utilized a theory as a framework and that they were mostly "borrowed from another discipline" (p. 316).

Staggers and Parks' (1993) Nurse-Computer Interaction Framework has been used in nursing research of EHRs, such as in the study by Whittaker et al. (2009). The framework was developed through "integrating concepts from human-computer interaction, nursing informatics, and developmental psychology" (Staggers & Parks, 1993, p. 282). It involves the dyad of nurses and computers interacting within the nursing context. The three elements of their framework are nurse characteristics, computer characteristics, and nursing context, which move "along the developmental trajectory" (Staggers & Parks, 1993, p. 287). Nurse characteristics include variables such as age and attitudes towards computers. The computer characteristics variables are, for example, hardware and software. The nursing context variables include the setting, physical aspects, and social environment. According to Staggers and Parks (1993), the apparent use of the framework is to guide research as it "helps determine pertinent classes of study variables" (p. 288).

Another framework that has been utilized in EHR research is the Technology Acceptance Model (TAM), which was developed in the 1980s as an adaptation of

Fishbein and Ajzen's Theory of Reasoned Action (Davis, Bagozzi, & Warshaw, 1989). TAM hypothesizes that “people form intentions toward using computer systems based largely on a cognitive appraisal of how it will improve their performance” (Davis et al., 1989, p. 985) and that computer acceptance behaviors are influenced by two beliefs: perceived usefulness and perceived ease of use. Perceived usefulness is “defined as the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context” (p. 985), while perceived ease of use is defined as “the degree to which the prospective user expects the target system to be free of effort” (p. 985).

Lewin's change theory has also been suggested as a commensurate theory applied to informatics (Kaminski, 2011) and has been used in explaining EHR implementation (Laramee, Bosek, Shaner-McRae, & Powers-Phaneuf, 2012). According to Bozak (2003), implementing informatics systems requires change, and the key is recognizing that nurses may resist technological changes. Lewin's change theory can offer direction in the change process and help in recognizing forces that serve to either aid or languish the desired change (Bozak, 2003). Bozak (2003) suggests that Lewin's change theory applied as a framework to a process of implementing an informatics system in a health care organization will serve as an effective strategy to “encourage adaptation to change rather than resistance” (p. 84). In the process of implementing a new informatics system, driving forces exists, such as “educational/training needs provided” and “autonomy in organizational culture” that will aid in weakening the restraining forces, such as “low level of staff commitment” or “aversion by staff to learning a new system” and then

moving the change from unfreezing to refreezing, so that the “desired outcome can be accomplished” (Bozak, 2013, p. 83, 84).

Lastly, Bandura's self-efficacy theory has also been used in explaining EHR implementation (Mahon et al., 2010). Self-efficacy is believed to have an encouraging influence on behavior (Resnick, 2008) and is a major determinant on how people approach challenges (Hergenhahn & Olson, 2005). Bandura (1977) argued that the higher the person's self-efficacy, the higher his or her perseverance and the probability that he or she will be successful in the performance of the chosen pursuit. According to Bandura (1989), “people's self-efficacy beliefs determine their level of motivation, as reflected in how much effort they will exert in an endeavor and how long they will persevere in the face of obstacles” (p. 1176). According to Bandura's theory, those with high self-efficacy believe that they are capable of performing well and are more likely to tackle even difficult tasks, rather than avoiding them (Hergenhahn & Olson, 2005). According to Bandura (1977, 1989), self-efficacy is developed in four ways: direct experience (mastery experience), vicarious experience (watching others succeed), verbal persuasion, and emotional arousal (fear or stress response). Direct experience, in which the individual succeeds after overcoming obstacles through perseverance, is the strongest source of self-efficacy, while the verbal persuasion by others is the weakest in building one's self-efficacy (Bandura, 1977, 1989). Self-efficacy then is enhanced by endeavors that are achieved after much effort rather than encouragement or feedback from others.

The following section includes research reviewed in order to determine what is known and not known regarding implementing EHRs in nursing and to support this study. Due to a scarcity of research from the faculty viewpoint, literature from the

viewpoint of other end-users, nurses and nursing students, is included in this review. One study was also included from the viewpoint of medical faculty. Thus, the following review includes implementing EHRs in nursing education from the viewpoint of faculty and students, as well as the perceptions of nurses in clinical practice.

Nurses' Experiences with Electronic Health Records

Smith et al. (2011) conducted a quasi-experimental study of the satisfaction and attitudes of nurses (*N*= 119) pre- and post-implementation of a computerized documentation system in a hospital setting. The researchers used a visual analog scale to measure nurses' satisfaction and the Stronge and Brodt's Nurses' Attitudes Towards Computerization (NATC) instrument with three deleted items to measure nurses' attitudes (Smith et al., 2011). Both surveys were administered prior to the implementation of the computerized documentation system and 4 to 6 months after (Smith et al., 2011). Both the satisfaction and attitude data were not normally distributed, so Mann Whitney U was used to analyze the data. The difference between the pre- and post-survey measurements, both in nurse satisfaction and attitudes, were found to be statistically significant ($p = .014$ and $p < .001$, respectively). Despite the facility's efforts to include nurses' input and offer training and technical support, nurses reported, “less satisfaction with computerized charting .... and [sic] less favorable attitudes towards computer charting after implementation of the electronic charting system” (Smith et al., 2011, p. 248).

The authors did not clearly indicate whether the results of the attitudes towards computers instrument resulted in a mean score indicating a positive attitude, either pre- or post-implementation. They reported that the range of scores for the results was 31-85 with a mean of 57.84 and SD of 8.8 with a prior reference to the range of scores for the

instrument being 17-85 with the three items deleted. The researchers did not specify a score, which would indicate a positive attitude. Therefore, while the results indicated a reduction in the attitude and satisfaction 4 to 6 months post implementation of the EHR system, it is not clear if either the mean (57.84) for the pre-survey or the mean (52.37) for the post-survey would be considered positive attitudes towards computers.

The study also reported a brief description of the findings of one open-ended question in the survey, which asked the nurses to share their story of transitioning to electronic health record documentation. The stories revealed the challenges that nurses were experiencing in transitioning to electronic documentation. They acknowledged that the process was not as easy as first perceived, it took more time than anticipated, bedside charting had concerns over privacy, computer downtime was an issue, and they were not adequately included in the decisions over selecting the documentation system prior to purchase (Smith et al., 2011).

Whittaker, Aufdenkamp, and Tinley (2009) conducted a descriptive qualitative study examining nurses' (N = 11) perceptions of barriers and facilitators in implementing electronic documentation in a hospital setting. They utilized the Staggers and Parks Nurse-Computer Interaction Framework to conceptualize the process of adopting electronic documentation system. The data collection utilized the adopted framework, and the study questions were, therefore, based on this framework, which recognizes nurse characteristics, computer characteristics, and contextual characteristics as the influencing factors in successful adaptation to computerized systems. The sampling was purposeful, and the interviews lasted 30 to 60 minutes. The data analysis of the participant interviews was also concluded with the help of the framework, which provided the three

coding categories: nurse characteristics, computer characteristics, and contextual characteristics (Whittaker et al., 2009). Deductive content analysis was utilized for each of the three categories, and responses were quantified in order to "support the development of themes and patterns" (Whittaker et al., 2009, p. 295). For inductive content analysis, the authors used the constant comparative technique by Strauss and Corbin.

Findings of the computer characteristics category suggested that the ease of use, reduction of written documentation, and ability to take the laptops to the bedside were viewed as the facilitators, while time-consuming logging process and technology issues, such as slow laptops and missing power cords, were identified as the barriers (Whittaker et al., 2009). The facilitators of the nurse-related characteristic were found to be prior experience with computers, time management skills, positive outlook, and openness to change, while barriers were the opposite of the facilitators with the addition of difficulty in finding help. The contextual characteristics category identified the availability of super-users, staff support, and managerial support as the facilitators, while training time, information overload, unsupportive staff, and dealing with physicians having computer related issues were identified as the barriers.

Laramee et al. (2012) conducted a quantitative study with a pre- and post-survey design to understand nurses' attitudes towards electronic health records prior to (n = 312) and both 6 months (n = 410) and 18 months (n = 262) post implementation of an electronic health record in a 500-bed hospital. The study used the Nurses' Attitudes Toward Computerization (NATC) questionnaire by Stronge and Brodt; however, it was modified by exchanging the word computer with the word electronic health record. The

survey had 20 items, with total scores ranging from 20 to 100. Higher scores signify more positive attitudes with scores above 50 considered indicative of a positive attitude (Laramee et al., 2012). Laramee et al. (2012) found that the average attitude scores were significantly ($p < .0001$) less 6 months (65.9) after implementation, as well as, 18 months (67.7) after implementation, in comparison to the pre-implementation mean score of 74.2. The increase in the mean scores from 6 to 18 months was not statistically significant. They also found a statistically significant negative correlation between both age and years of practice and the attitude score at pre-implementation and at 6 months. Although the researchers did not discuss any of the attitude scores alone without comparison, it is the interpretation of this author that even though there was a reduction in nurses' attitudes pre- and post-implementation of an electronic health record, the average scores were above 50 at pre, after 6 months, and after 18 months, thus indicating that overall nurses' attitudes towards the electronic health record were positive.

Leblanc, Gagnon, and Sanderson (2012) conducted a quantitative survey study with an objective to explore factors influencing nurses' ($n = 99$) intention to adopt an electronic health record in their clinical practice. The theoretical framework that guided the study was the theory of planned behavior, and the study instrument measured the variables as identified by the theory: intention, attitude, subjective norm, and perceived behavioral control. In addition, Leblanc et al. (2012) measured demographic variables, such as age, level of education, years of work experience, and previous EHR use, in order to identify the influence of socio-demographic variables on the nurses' intention to adopt EHR. Descriptive analysis and multiple regressions were used to analyze the data. The results revealed that none of the measured socio-demographic variables had an influence

on the nurses' intention to adopt the EHR. Overall, Leblanc et al. (2012) found that nurses in the study had a strong intention to adopt the EHR (Mean score of 6.14 with possible scores 1-7) and that intention was influenced by their perceived behavioral control ($p = .0002$) and attitudes toward the EHR ($p < .05$). The attitude, in turn, was influenced by the nurses' belief that the EHR could improve the care quality ($p < .0001$).

Vezyridis, Timmons, and Wharrad (2012) carried out a qualitative study to explore nurses' ($N = 22$) reactions of an implementation of a computerized information system in an emergency department. The authors utilized purposeful, snowball sampling and collected the data via semi-structured interviews. The interviews were transcribed and analyzed thematically utilizing the QSR-NVivo 8 software (Vezyridis et al., 2012). The two main themes identified were initial reactions and first interactions. The subthemes for initial reactions were listed as: computer literacy, system availability and downtime, moving forward with technology integration, transition to paperless practice, and computer-based information provision.

In discussion of the initial reactions theme, the authors concluded that older nurses, in particular, were fearful of their ability to master the computerized system and that most nurses were concerned that the system would at some point not work properly. On a positive note, Vezyridis et al. (2012) noted that some nurses recognized that the system could allow for "better and faster information provision" (p. 542). The subthemes for first interactions were listed as: system downtime, filling in text boxes, navigating through screens and menus, moving patients through the system, recalling use of system, rectifying mistakes, saving clinical notes, spellchecking, keyboard typing, and wrong-record update. In the first interactions theme, the nurses found training and system

design to be problematic. They had difficulty navigating the system and were disappointed that all data entered was saved and could not be edited. Issues with system downtime also contributed to their trust of the system.

Chow, Chin, Lee, Leung, and Tang (2011) conducted a cross-sectional survey research to explore nurses' (N = 204) attitudes and perceptions of electronic health records in their clinical practice. The Technology Acceptance Model was utilized as the theoretical framework for the study, providing an explanation of possible factors that influence a person to either agree to or refuse technology. According to the model, perceived usefulness and perceived ease of use are the primary factors that affect attitudes towards technology (Chow et al., 2011). The researchers used stratified random sampling in order to include equal proportion of all levels of nurses for the study. The instrument used in the study included items measuring IT support, perceived usefulness, perceived ease of use, level of satisfaction, attitudes, and demographics. Descriptive statistics were used to analyze demographic data, correlation coefficients were used to determine relationships among the study variables, and multiple linear regression analysis was used to determine predicting factors for nurses' satisfaction with and attitudes towards the EHR (Chow et al., 2011).

Positive correlations were found between nurses' attitudes and perceived usefulness, as well as IT support. Positive correlations were also found between perceived ease of use and nurses' satisfaction, attitudes, perceived usefulness, as well as IT support. Finally, nurses' satisfaction and attitudes, perceived usefulness, as well as IT support were also positively correlated. The multiple linear regression analysis indicated that IT support and perceived usefulness were statistically significant in predicting nurses'

satisfaction with the EHR, while perceived usefulness, IT support, and nurses' satisfaction were statistically significant in predicting nurses' attitudes towards the EHR (Chow et al., 2011). The authors concluded that their results were commensurate with the relationships identified within the Technology Acceptance Model. The implications of the study point to the need for proper IT support and fostering nurses' attitudes towards EHRs (Chow et al., 2011).

These six studies examined nurses' reactions, attitudes, and satisfaction, as well as perceived barriers and facilitators with EHR implementation. In general, the review revealed that practicing nurses' attitudes towards computerization are positive with a reduction in the mean attitude score after implementation of electronic health record systems. Similarily, negative correlation between the attitude scores and age, as well as years of practice was suggested. The open-ended question in the study by Smith et al. (2011) provided some insight into the factors affecting nurses' satisfaction and attitudes towards electronic documentation. The findings of the study by Whittaker et al. (2009) helped in identifying the perceived barriers and facilitators in implementing electronic documentation. However, they are not enough to guide much-needed strategies in implementing electronic health records in either clinical or academic settings.

Three of the studies utilized a theoretical framework to guide their research. Whittaker et al. (2009) utilized the Nurse-Computer Interaction Framework in their qualitative study, which supported the coding categories. Utilizing an existing theory in the selection of which categories to focus on may have restricted the findings of the study. Chow et al. (2011) utilized the Technology Acceptance Model, while Leblanc et al. (2012) utilized the Theory of Planned Behavior, both to identify the study variables

and provide guidance in hypothesis of the relationships among them. Grounded theory approach can aid in expanding the understanding of possible critical factors that influence the EHR implementation, and furthermore, it allows studying participants without needing to fit their behavior into any existing theory.

Students' Experiences with Electronic Health Records

Kennedy, Pallikkathayil, and Warren (2009) conducted a case study to explore the experiences and behaviors of nursing students (n = 8) utilizing an electronic health record to complete a care plan based on a patient case scenario during seminar group sessions that were led by a faculty member. Kennedy et al. (2009) collected the data via videotaped observations of the seminar sessions, semi-structured interviews of five of the students and the faculty member, and evaluation of the care plans completed by the students. The data analysis was conducted simultaneously with the data collection and consisted of coding, categorizing, and merging coinciding categories.

The results indicated two foundational themes and a concluding theme. The first foundational theme was “Techno-savvy Students and Teacher, Simulated Technology, and Data-Rich Case Studies: A Valuable Hybrid SEED for learning” (Kennedy et al., 2009, p. 98), and the second foundational theme was “Seeing, Hearing, and Doing: A Catalyst for Application and Spontaneous Interaction” (p. 98). The concluding theme was “Honing the Data Gathered and Data User Roles With a Modified Electronic Health Record: An Authentic, Learner-Centered Experience” (Kennedy et al., 2009, p. 99). The study concluded that the seminar sessions utilizing the EHR were a fun, positive, student-centered, and hands-on learning experience that assisted the students' application of the nursing process skills.

Baillie, Chadwick, Mann, and Brooke-Read (2013) surveyed adult nursing students' (*n* = 51), mental health nursing students' (*n* = 28), and midwifery students' (*n* = 26) to explore their experiences in learning to use electronic health records during their clinical practice experiences. In addition to the questionnaire, Baillie et al. (2013) conducted three focus groups with open-ended questions. The survey data were analyzed with descriptive statistics, and Pearson's chi-square was used to determine associations among variables. The data from the focus groups were thematically analyzed with Patton's framework (Baillie et al., 2013). After the focus group themes were reviewed in relation to the survey results, two overall themes emerged: preparation for using EHRs and skills development and access to EHRs and involvement (Baillie et al., 2013, p. 439).

The theme preparation for using EHRs and skills development (Baillie et al., 2013, p. 439) revealed that 60% of the participants had no training to use the EHR and 59% of those who reported having had some training indicated that the training was informal. Additionally, 64% felt that they were well prepared for documenting with a paper-record, but only 16% felt the same regarding EHRs. Students in the focus groups indicated that the training that they received was helpful but that how much guidance they had with the EHRs was dependent on their mentors. In terms of the theme discussing access to the EHR, the study revealed that there was a difference between the first-, second-, and third-year students, with 27% of first-year students having had access to the EHR as compared to 63% of the third-year students (Baillie et al., 2013). The students in the focus groups indicated that the lack of access to the EHRs was frustrating and affected their learning. They discussed that while they were allowed to access paper records without restrictions, the EHR access was limited due to their mentor's uncertainty

or unfamiliarity with students' authority to access the EHRs. The difficulty for mentors to verify student documentation within the EHRs was also identified as barrier.

Jansen (2014) conducted a study using a single group descriptive design to explore nursing students' (n = 16) perceptions of utilizing an EHR during simulation experiences. The Nursing Education Simulation Framework was used to guide both implementing the EHR into the simulation experience and the evaluation of the corresponding students' experience. The data was collected via researcher-developed and pilot-tested survey instrument that included 10 Likert-type closed-ended questions and 10 open-ended questions. Means, standard deviations, and a total percentage of students that slightly agreed, agreed, or strongly agreed with an item were used to analyze the Likert-scale survey questions. Content analysis with "empiric-analytic inductive technique" (Jansen, 2014, p. 167) was utilized for the open-ended survey questions. The mean for the 1-6 range Likert-scale items ranged from 3.8 to 4.9 with the lowest mean being the item stating that the student fee for the EHR was reasonable and the highest mean being for the item stating that “it is important for the nursing program to use some type of EHR system” (Jansen, 2014, p. 166). With the item inquiring if the EHR system was realistic, the researcher also compared the students' (n = 6) means who reported prior experience with EHRs to those without experience and found that the students with prior experience more strongly agreed that the EHR was realistic (p = .04).

The content analysis of the open-ended survey questions resulted in the emergence of eight categories. The most frequent response by the participants was that the EHR was not used fully as intended. In this category, the students shared that faculty often used the system in demonstration mode because it was time consuming for all

students to log in and chart themselves. Another category indicated that the students recognized the value of being able to practice with the EHR instead of only using paper documentation. The students also found the EHR similar to the ones used in clinical practice and found it useful. The rest of the categories were: easy to use, promoted realism of simulations, helpful but not needed relative to costs, and online accessibility and log-in issues (Jansen, 2014, p. 169). The low number of students is a serious limitation of this study.

Zhang, Ura, and Kaplan (2014) examined the difference on the effectiveness of simulation between a group of nursing students (n = 99) who used paper charting during their simulation experience (SIM group) and those students (n = 110) who used an electronic health record (SIMEHR group). Convenience sampling was used, and the data were collected via a 13-item, 3-point ordinal scale (Zhang et al., 2014, p. 125) effectiveness survey, which was administered to both groups after the simulation experience. Only 36 of the 99 students from the SIM group responded to the survey, while 106 of the 110 students from the SIMEHR group responded to the survey. Data analysis included a t-test, which was used to compare the differences between the groups. No difference (p = .42) was found between the groups in the total score of the survey. The authors' interpretation of the result was "that students did not view the EHR as an impediment for their learning process" (Zhang et al., 2014, p. 127).

Jones and Donelle (2011) conducted a usability study of electronic health records with nursing students (n = 13). The participants were given a short introduction to an EHR and then asked to complete several tasks in the EHR based on a presented patient scenario. The students were asked to think aloud while performing the tasks. The data

collection included video recorded observation of the participants' actions and their audiotaped verbalizations. A demographic survey was also administered, and three open-ended questions were included to inquire what they found difficult, whether they were satisfied with their ability to use the EHR, and if they thought that the introduction to the EHR was helpful. Descriptive statistics were used for the demographic data, and thematic analysis was used for the videoed participant actions, audio-recorded participant comments, and the responses to the open-ended questions.

Nearly all students responded that they were proficient in using computers, and all were aware of EHRs from their clinical experiences. However, none reported having used EHRs prior to the study. The thematic analysis resulted in three themes: being novice, confidentiality and security, and repetition and practice (Jones & Donelle, 2011, p. 10). The being a novice theme signified that students were unclear where they should document their findings. The observation of their actions further revealed that 23% skipped reviewing patient's health history, 62% reviewed some of the history, and 15% thoroughly reviewed all health history information although they were all instructed to view it. The confidentiality and security theme demonstrated that 23% of the students did not log off or close the browser windows that contained patient information. The students indicated a positive attitude towards the EHR and recognized that repetition and practice would increase their capability to use the system (Jones & Donelle, 2011).

Miller et al. (2014) conducted a quantitative descriptive study to investigate novice nurses' (n = 222) beliefs of their ability to use electronic health records effectively and nurse managers' (n = 326) beliefs of the degree to which the novice nurses demonstrated effectiveness in using EHRs. The novice nurses were identified as having

obtained their RN license less than 2 years before the study and the nurse managers as "nurses who managed other RNs" (Miller et al., 2014, p. 6). The objective of the study was to identify a possible gap between new nurses reports of their abilities and those reported by the nurse managers. The pilot-tested survey instrument was developed by the researchers and included 28 questions regarding "knowledge and skills anticipated to be critical to effective EHR use" (Miller et al., 2014, p. 6). Descriptive statistics were used to analyze the data. If more than 50% of the novice nurses or nurse managers reported being highly or very highly skilled with the survey item, the skill area was considered as strength.

The results revealed that novice nurses and nurse managers agreed on seven of the 28 skill areas as strengths and eight of the skill areas needing development. However, a gap was identified in 13 of the 28 skill areas, meaning that nurse managers saw them as areas needing development while novice nurses saw them as strengths (Miller et al., 2014). Among the identified skills were the following:

> … spreadsheet development, data entry, medication administration documentation, treatment documentation, graphics documentation and tracking, patient education material retrieval, patient education documentation, lab results retrieval, diagnostic result retrieval, accessing electronic charts content, accessing prior admission data, care plan development, and discharge planning documentation. (Miller, 2014, p. 13)

These six studies discussed nursing students learning nursing process using an EHR, their experiences in using EHRs in practice settings, and their perceptions of using EHRs during simulation experiences. They also compared the students' perceptions of

the effectiveness of simulation with or without using an EHR and identified possible gaps between new nurses' self-reported EHR skills and those reported by nurse managers. The review revealed that students valued learning experiences using EHRs (Baillie et al., 2013; Jansen, 2014; Jones & Donelle, 2011; Kennedy et al., 2009) but also that they saw themselves as novices (Jones & Donelle, 2011) and that there was a gap between what areas new nurses saw themselves as having strong skills as compared to the nurse managers (Miller et al., 2014). The study by Jansen (2014) also revealed that the students were not able to use the EHR during simulation experiences fully or as intended due to faculty seeing the process of each student logging and documenting as too time consuming and laborious.

In order for students to develop competencies needed for effective use of EHRs, they must be able to practice these skills during nursing education. The role of nurse faculty is crucial in the process of incorporating EHRs into the nursing curriculum. Exploration of the critical factors that influence faculty in implementing EHRs in nursing academia through the grounded theory method may provide insight into possible challenges or barriers affecting full integration of EHRs to the nursing curriculum from the viewpoint of nursing faculty, as well as offer strategies for their successful implementation.

Faculty's Experiences with Electronic Health Records

Mahon, Nickitas, and Nokes (2010) conducted a qualitative exploratory study within the framework of self-efficacy theory of how faculty members (N = 25) perceived teaching documentation skills to students either with paper or with clinical agencies' electronic system. Data were collected via face-to-face interviews. A qualitative

constant comparative method was utilized to analyze the data (Mahon et al., 2010). Four themes emerged from the study: teaching strategies, learning from experts, road from novice to expert, and legal-ethical institutional issues (Mahon et al., 2010). The faculty in the study stated that they were especially reliant on the clinical staff in using the clinical information system and reported time constraints in orienting and acquiring access to the system, which consumed too much time from the clinical rotation (Mahon et al., 2010). Other related obstacles were unavailability of staff nurses to assist faculty and students, insufficient amount of computers to use, and only issuing the access code to the faculty member and not the students, which reportedly was an ethical and legal concern for the faculty in their ability to adequately supervise multiple students documenting under the faculty's access code (Mahon et al., 2010). Furthermore, Mahon et al. (2010) noted that faculty was concerned with the time needed to train again to a different system in another clinical agency for the next clinical rotation.

The authors concluded that faculty perceived themselves as competent and confident in teaching paper-based documentation skills, suggesting a “plateau of comfort in this area,” but that their perceived self-efficacy was diminished teaching clinical documentation with the electronic systems (Mahon et al., 2010, p. 620). According to the researchers, the most important implication of their study was the use of role-modeling as a teaching strategy. The authors state that modeling the self-efficacy theory will help in working through integrating new technologies into nursing curricula.

Bani-issa and Rempusheski (2014) investigated teaching beliefs and subsequent teaching practices of nurse faculty ($N = 7$) teaching with the EHR in a classroom setting, through a qualitative collective case study approach. Data were collected by participant

interviews, classroom teaching observations, and curriculum documents. Data were analyzed "using analytical induction and constant comparison" (Bani-issa & Rempusheski, 2014, p. 908). The analysis resulted in emergence of two case studies of teaching beliefs: a constructivist educator and an objectivist educator. The study revealed that while most of the teaching beliefs and subsequent practices represented the constructivist focus, the objectivist orientation was still existent with some nurse educators. The faculty with constructivist beliefs embraced the use of EHR in teaching, and their teaching practices were interactive with utilization of Socratic questioning, case studies, and experiential learning. The faculty with objectivist teaching beliefs had negative attitudes about the EHR, and their teaching practices reflected a "didactic instructional approach" (Bani-issa & Rempusheski, 2014, p. 909) in which faculty delivered the material that students needed to know to be successful in their exams. The researchers recommend that nurse faculty assume the constructivist approach in teaching, which allows for embracing the technological changes in nursing education.

Spencer et al. (2012) conducted a quantitative survey research on how implementation of an EHR in medical education affected clinical faculty's (N = 427) teaching enthusiasm and what factors contributed to their responses. The study found that nearly half of the study participants agreed that the EHR implementation in clinical teaching decreased their enthusiasm for teaching medical students. Those respondents who reported being more comfortable with using the EHR were less likely to report a decrease in the teaching enthusiasm with EHR implementation, but the amount of experience with the EHR did not have the same response. The study found no association between teaching enthusiasm after EHR implementation and the variables of

age, gender, or academic rank. Additionally, the majority of faculty agreed that the EHR distracted them from teaching medical students, and those who reported being comfortable with the EHR were less likely to report EHR being a distracter, while those who reported themselves as enthusiastic about teaching medical students were more likely to be distracted. One-fourth of faculty saw the EHR offering advantages for teaching, with the faculty who are comfortable using the EHR more likely to report advantages. Lastly, the majority of faculty reported that the EHR implementation resulted in spending less time teaching the students, with the faculty being less comfortable, having less experience, or reported themselves as enthusiastic teachers being more likely to report that.

Kowitlawakul, Chan, Wang, and Wang (2014) conducted a qualitative study to investigate nursing faculty's (N = 7) experiences and perceptions of implementing an electronic health record in the nursing skills lab and to explore what factors may have influenced successful implementation of the EHR. The researchers utilized purposive sampling and collected the data via semi-structured face-to-face interviews. The interviews were recorded, transcribed, and then content analyzed in order to develop categories and subcategories (Kowitlawakul et al., 2014).

The three categories that emerged were innovation, transition, and integration. Within the innovation category, the faculty expressed that utilizing the EHR in their skills lab classes was a new experience, and they perceived it as being an innovative teaching tool. Some of the faculty also felt that the EHR was challenging to use, did not see it as useful, and affirmed that it was time consuming, therefore, adding to their workload. However, some also felt that it was a valuable tool and helped the students in recognizing

documenting errors, thereby improving quality of care. The study showed that implementing the EHR in the nursing skills lab "was a transitional process" (Kowitlawakul et al., 2014, p. 503). The faculty recognized that the health care organizations had transitioned to the EHRs, so including the EHR in the skills lab provided the students an opportunity to learn it prior to their clinical practice. The integration category included faculty perceptions that more time should be allowed during class to learn about the EHR, and it should be integrated early within the curriculum. Faculty also felt that the EHR should be a web-based application in order for students to be able to use mobile devices to access the EHR (Kowitlawakul et al., 2014).

These four studies discussed nursing and medical faculty's experiences, perceptions, teaching enthusiasm, teaching beliefs, and teaching practices with the implementation of the EHR in academia. All identified themes in the study by Mahon et al. (2010) addressed the process of faculty teaching documentation skills and students learning clinical documentation but failed to "capture faculty's views of their own ability to transition from paper to electronic record systems" (p. 620). The study by Bani-issa and Rempusheski (2014) suggested that adopting the constructivist teaching beliefs aids in embracing technological changes in nursing education. However, in addition to teaching beliefs and the corresponding teaching practices, their study did not explore the influence of any other factors in relation to faculty implementing EHRs in nursing academia. Spencer et al. (2012) revealed that medical educators reported a decrease in enthusiasm with the EHR implementation and that it both distracted them from teaching students and lessened their time spent with the students. Kowitlawakul et al. (2014)

identified that implementing EHR in the nursing curriculum “was a transitional process” (p. 503) and identified that faculty felt that EHR was an innovative teaching tool.

Neither Bani-issa and Rempusheski (2014), Spencer et al. (2012), nor Kowitlawakul et al. (2014) discussed any framework in their studies. Mahon et al. (2010) discussed the self-efficacy model as a framework within their exploratory qualitative study; however, its role was left somewhat unclear. None of the studies could explain the process of faculty implementing EHRs nor offer a framework to guide research. Therefore, a grounded theory approach is needed to further explore the critical factors influencing this process and to develop a middle range theory to inform practice and research.

Experiential Context

According to Creswell (2013), reflexivity refers to the researchers positioning themselves in the study by talking about their past experiences with the phenomenon under investigation. It is important for the researcher to be attuned to her perspectives and emotions in order to be aware of how they might lead the researcher to ask particular questions or make certain interpretations (Glesne, 2011). Through self-awareness and self-exposure, the researcher strives to be self-conscious about how her experiences with the phenomenon may shape the study findings or interpretations made (Creswell, 2013; Munhall, 2012). This researcher has personally experienced the transition from paper-based documentation to utilizing the EHR, first in a hospital setting as a staff nurse and then in academia as a faculty member. I have continually supported faculty experiencing challenges or in need of support by preparing and conducting orientations to the EHR, as well as offering continued support via e-mail, phone, or in person. Additionally, during

my master's studies, as part of a directed independent study, I was invited to assist in the college of nursing's process of implementing EHR in their undergraduate program.

As a staff nurse, I noticed some nurses quickly make the transition while voicing relative satisfaction with the EHR and some facing numerous challenges and dissatisfaction with the process. Similarly, in academia, I have observed some faculty embrace the change, making the transition successfully, while some continue to face challenges and a longer transition process. For me, the transition both as a nurse and as an educator was interesting. I found the EHR added to the completeness of my documentation and served as a good method for the students to learn nursing language and how to document nursing care. However, the process of helping other faculty has been difficult and frustrating at times. Often, there is not enough time available to adequately offer support, or it has been difficult to coordinate a mutually convenient time, especially with adjunct faculty who often work full time outside academia. Futhermore, I have felt inadequate in my ability to ensure a meaningful and rewarding process for everyone involved.

It is these experiences through school and work that prompted me to investigate the critical factors that influence faculty in the process of transitioning to teaching with the EHR. It is hoped that the findings of this qualitative study with the grounded theory method will advance the development of nursing faculty, therefore leading to best practices in implementing electronic health records in nursing academia. In order to attain reflexivity, bracketing through journaling is encouraged (Dowling, 2006; Watt, 2007). Bracketing, or epoche, refers to researchers setting aside the experiences they have had with the phenomenon, in order to "take a fresh perspective toward the

phenomenon under examination" (Creswell, 2013, p. 80). I used self-reflection through journaling in order to stay attuned to my assumptions, biases, perspectives, and emotions throughout the data collection and analysis process. As an additional form of bracketing, I also reviewed and discussed the analysis of the transcribed interviews with the dissertation chair and committee members, as illustrated by Fisher (2009) who utilized such bracketing with the other members of his research team. Through these two forms of bracketing, I pursued to ensure that when inductively arriving at a theory, it was truly informed by the participants' subjective views and accurately reflected the process as experienced and told by the study participants.

Chapter Summary

This chapter explored the literature on the phenomenon of this study. There is a lack of literature on EHRs in nursing education, particularly from the viewpoint of nurse faculty. This review concentrated on the historical context, on faculty experiences with the EHR, as well as on the experiences of nursing students and practicing nurses. The experiential context, with strategies for bracketing, was also explored. Chapter Three will follow, providing an explanation of the methodological procedures that were utilized in this study.

CHAPTER THREE

METHODS

The purpose of this grounded theory study was to develop a substantive theory of the process of faculty transitioning to teaching nursing documentation with the electronic health record and the factors that influenced faculty in the transition. It was anticipated that the findings of this qualitative grounded theory study could provide an understanding of the factors that influence faculty attitudes and behaviors about implementation of electronic health records in nursing academia. This chapter discusses the research design, sample and setting, access and recruitment, inclusion and exclusion criteria, ethical considerations, data collection procedures, interview questions, data analysis, and the rigor of this study.

Research Design

The research problem is one factor that affects the choice of the research design (Creswell, 2009). A quantitative approach is best when the research problem calls for predictors of outcomes, the efficacy of an intervention, or to test a theory, while qualitative approach is best when little research has been conducted on the phenomenon, the variables to be examined are not known, the topic has not been studied with the particular group of people, or an existing theory does not pertain to the group to be studied (Creswell, 2009). Research has been conducted examining the implementation of EHRs among nurses, and while examples of integrating EHRs into the nursing curriculum exist in literature, currently there is scarce research on faculty implementing EHRs. The literature review further established that currently no practice theory specific to the process of implementing EHRs exists either in nursing practice or academia.

"Grounded theory is particularly useful when little is known about the area to be studied, or when what is known is from a theoretical perspective that does not satisfactorily explain what is going on" (Wuest, 2012, p. 230). It allows the researcher to study participants without needing to fit their behavior into any existing theory. Furthermore, grounded theory is used when the goal is to develop a theory explaining human behavior, especially as it relates to "health issues, developmental transitions, and situational challenges" (Wuest, 2012, p. 230). Instead of focusing on participants' individual experiences like in phenomenology, grounded theory focuses on the process that the participants have experienced and seeks then to develop a theory of that process (Creswell, 2013). Teaching documentation with electronic health records is often a developmental transition from teaching paper-based documentation and, furthermore, is related to a situational challenge, meaning that multiple factors will affect faculty attitudes and behaviors, as they encounter the process of implementing EHRs. This study focused on the process of faculty transitioning from paper-based documentation to EHRs. Therefore, grounded theory, specifically that of Strauss and Corbin, was appropriate for the exploration of this process to answer what critical factors influenced faculty attitudes and behaviors about implementation of electronic health records in nursing academia.

The following explanation of the chosen methodological approach of Strauss and Corbin focuses on the procedures as outlined by them. The key elements of Strauss and Corbin's (1998) methodology are the analytic techniques of "making comparisons, asking questions, and sampling based on evolving theoretical concepts" (p. 46). Procedures exist to offer the researcher thoroughness to the process; however, the intent is not to rigidly follow the procedures, but instead, it is to remain creative and flexible (Strauss &

Corbin, 1998). Although, sampling, data collection, and analysis are discussed in the following sections, such separation is only artificial because in grounded theory, the data analysis takes place concomitantly with the data collection (Strauss & Corbin, 1998, 2008). Concurrently with the data analysis, more data were collected, in harmony with the grounded theory principles of the intertwining of data collection and analysis.

Constant comparison is the central process of grounded theory in which the researcher compares collected data to the emerging categories and returns to collect more data (Creswell, 2013). The data collection and analysis along with constant comparison continued until categories fully emerged. Closely related to constant comparison is the notion of sensitivity, which refers to the researcher's ability to have insight and recognize relevant issues in the data (Corbin & Strauss, 2008). Immersing in the data means being adept to the participants' role and being able to present their view. It is the process of alternating between data collection and analysis in which the researcher begins to see the participants' views and the emerging issues.

Data analysis in the Strauss and Corbin (1998) approach progresses though open, axial, and selective coding. Coding is the process of “extracting concepts from raw data and developing them in terms of their properties and dimensions” (Corbin & Strauss, 2008, p. 159). In open coding the researcher worked through the data word-by-word, line-by-line, or by paragraph in an effort to discover concepts, group them into categories and subcategories, and to moderate their properties and dimensions (Strauss & Corbin, 1998). In axial coding, the aim was to relate concepts or categories to each other and begin to identify the core category. In selective coding, the researcher strived to link the

categories around core category and move forward in integrating and refining the theory (Strauss & Corbin, 1998).

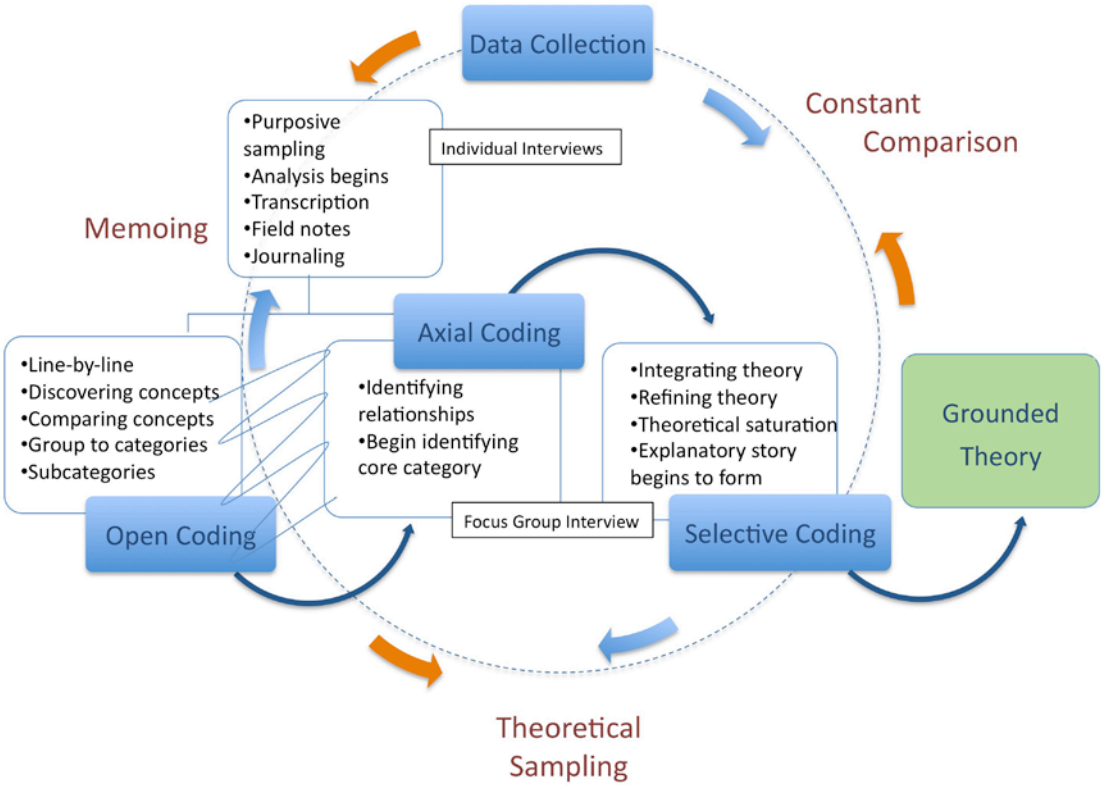

Figure 1. Schema illustrating the research design (Wallace, 2014, adapted from Strauss & Corbin, 1998).

Figure 1 is a schematic illustration representing the research design of this qualitative grounded theory study. The circle represents the cyclical nature of qualitative research, and its dotted line illustrates the assumption of the dynamic rather than static nature of reality in qualitative research. Outside of the circle are the words memoing, constant comparison, and theoretical sampling, which signify the key tenets and central processes of grounded theory. The coding procedures are linked with arrows, denoting the analytic progress towards the ultimate aim of arriving at a grounded theory. The grounded theory box is colored green to convey that it is grounded in data. The

meandering line between open and axial coding exemplifies that the two processes are not separate, but rather go hand in hand. The blue and orange opposing arrows exemplify the nature of grounded theory, in which the researcher goes back and forth between data collection and analysis.

Sample and Setting

Sampling is related closely to the researcher's built up sensitivity to the concepts that are emerging (Strauss & Corbin, 1998). From the beginning and throughout the course of the study, the researcher engaged in the analytic process of memoing. Writing memos was an important component of the analysis. They are written records of the products of the researcher's analysis, which mature in precision, sophistication, and accuracy with the progression of the research (Corbin & Strauss, 2008). According to Corbin and Strauss (2008), memos are "reflections of analytical thought" (p. 120) and "move the analysis forward and as such are just as important to research process as data gathering itself" (p. 118). Doing memos is more important than the particular form of memos. Researchers will develop their own way of doing them.

In the grounded theory method, sampling begins within a target population, and the researcher continues to sample from that group throughout the sampling process (Corbin & Strauss, 2008). In this study, the target population was nurse faculty implementing electronic health records in nursing academia. This study was conducted in two phases: individual interviews and a focus group interview. The study participants were selected based on their knowledge on the phenomenon of interest, through both purposive and theoretical sampling (Wuest, 2012). A purposive sampling technique was

utilized to seek participants for the individual interviews in phase one. In phase two, the sampling shifted to a theoretical sampling technique.

Purposive sampling is used to seek participants who are going through the particular process being investigated (Bryant & Charmaz, 2013). This study explored the critical factors that influenced nurse faculty attitudes and behavior about implementation of electronic health records in nursing academia. Purposive sampling technique was utilized to access nurse faculty who have experienced this particular process within the last 5 years and who were currently teaching clinical courses or had taught nursing documentation using an electronic health record as part of a clinical course within the last year. Additionally, snowball sampling was utilized. Snowball sampling, also referred to as "chain referral sampling" (Berg & Lune, 2012, p. 52), is a strategy in which participants refer other possible participants for the study.

Theoretical sampling criteria included nurse faculty who were currently teaching clinical courses or had taught nursing documentation using an electronic health record as part of a clinical course within the last year, had experienced the transition to teaching using the EHRs within the last 5 years, and had taught nursing documentation using an electronic health record for at least 2 years.

In initial sampling, the researcher was largely open and aimed to discover as many concepts as possible. As the data collection and analysis progressed, the sampling became more specific. Once the researcher discovered several categories, the aim of sampling moved to develop those categories further. At the end of the study when theory is being formed, sampling becomes "highly selective" (Strauss & Corbin, 1998, p. 211). Once the emerging concepts, central phenomena, and the preliminary findings were

identified, the sampling technique of phase one shifted from purposeful to theoretical sampling in phase two. The purpose of theoretical sampling is to acquire data to facilitate clarifying the categories (Charmaz, 2006).

According to Creswell (2013), typical sample size for grounded theory study is 20-30 participants (p. 86). Wuest (2012) discussed that 10-15 participants is usually sufficient for a narrow realm, while as many as 40 may be needed for a broad realm (p. 235). In agreement, this study estimated the sample to include maximum of 25 participants for the individual interviews in phase one. However, the final sample size was determined by point of data saturation, in accordance with the grounded theory methodology (Creswell 2013; Wuest, 2012). Saturation signifies that no new data is emerging, the properties and dimensions of categories are well developed and demonstrate variation, and that "the relationships among categories are well established" (Strauss & Corbin, 1998, p. 212). The sample size for this study consisted of 15 participants for the individual interviews.

In phase two, a focus group interview was used to substantiate the emerged theory, through introducing the findings for a discussion among the group. The further insight gained was used to aid in the saturation of the emerged theory. Focus groups typically have a number of participants (Berg & Lune, 2012). According to Krueger and Casey (2000), "six to eight people that have something in common" (p. 4) are selected for focus groups. The focus group, for this study, was estimated to have a maximum of seven participants. The sample size for this study was six participants for the focus group interview. Participants for both phases were adjunct or full-time nurse faculty with

specific inclusion and exclusion criteria. The setting for both phases included an associate degree nursing school in Florida.

Access and Recruitment of the Sample

Prior to recruiting prospective participants, the Institutional Review Board approval was attained from Barry University and from the prospective participants' place of employment if warranted by that academic institution. In order to access the nurse faculty participants for this study, permission to access nurse faculty was requested from various nursing schools, both associate and baccalaureate degree by approaching the deans/directors via e-mail and a follow-up telephone call (Appendix C). If their institution necessitated an additional IRB approval, it was then sought. Upon IRB approval from Barry University, the recruitment flyer (Appendix D) was then e-mailed for distribution to the deans/directors who were asked to forward it to the nurse faculty. Participants had the option to contact the researcher either via telephone or e-mail.

According to Bryant and Charmaz (2013), participant recruitment begins based on whether they have experienced the phenomena under investigation. It is most logical for the researcher to recruit purposefully, as to "go find them where they are" (Bryant & Charmaz, 2013, p. 233). Approaching organizations or individuals as an initial recruitment method may be used in order to reach people who meet the inclusion criteria of the study (Wuest, 2012). The participants for this study were recruited in two phases. In phase one, once initial purposive sampling had begun, snowball sampling was used. In snowball sampling, the researcher asks the initial participants to invite their colleagues and acquaintances to take part in the study (Bryant & Charmaz, 2013). Every individual who contacted the researcher received a follow-up call to determine that he or she met the

inclusion criteria. These participants were then invited for an interview at convenient locations for them. In phase two, theoretical sampling was utilized to recruit participants for the focus group who had used EHR to teach documentation to nursing students at least for 2 years. Upon determining the participants' eligibility, a focus group session was scheduled in a location mutually agreed upon as convenient for the participants. At the conclusion of the initial interview, all study participants, including focus group participants, received a $25 gift card as a gesture of appreciation for their participation in the research. However, if they had chosen to terminate the interview and withdraw from the study, they would have still received the gift card.

Inclusion Criteria

The inclusion criteria for the individual face-to-face interviews included: full-time and adjunct nurse faculty in an associate or baccalaureate degree nursing school who were currently teaching or had taught nursing documentation using the electronic health record as part of a clinical course within the last year and who had experienced the transition to teaching nursing documentation using an electronic health record as part of a clinical course within the last 5 years. The inclusion criteria for the theoretical focus group interview included: full-time and adjunct nurse faculty in an associate or baccalaureate degree nursing school who were currently teaching or had taught nursing documentation using an electronic health record as part of a clinical course within the last year, who had experienced the transition to teaching nursing documentation using an electronic health record as part of a clinical course within the last 5 years, and who had at least 2 years of experience teaching nursing documentation with an electronic health record.

Exclusion Criteria

The exclusion criteria for the individual face-to-face interviews included: full-time and adjunct nurse faculty in an associate or baccalaureate degree nursing school who had not taught nursing documentation using the electronic health record as part of a clinical course within the last year and who had not experienced the transition to teaching nursing documentation using an electronic health record as part of a clinical course within the last 5 years. The exclusion criteria for the theoretical focus group interview included: full-time and adjunct nurse faculty in an associate or baccalaureate degree nursing school, who had not taught nursing documentation using an electronic health record as part of a clinical course within the last year, who had not experienced the transition to teaching nursing documentation using an electronic health record as part of a clinical course within the last 5 years, and who had been teaching nursing documentation using an electronic health record for less than 2 years. In addition, participation in an individual interview excluded the participant from a focus group interview.

Ethical Considerations/Protection of Human Subjects

Without participants, there would be no research. It is the participants who "go out of their way to help us...." who we impose our curiousness on, take their time and "....reduce important elements of their lives into our data" (Berg & Lune, 2012, p. 98). While our goal is that through our research, the society will ultimately benefit, it is of utmost importance that in the process of research, we "respect the trust that our informants place in us" (Berg & Lune, 2012, p. 98). Ethical considerations in research ensure that the people who participate in the study will not be harmed, are truly informed about the study, freely consent to participate, and that both their privacy and anonymity

are protected (Berg & Lune, 2012). Furthermore, the data must be safeguarded to ensure confidentiality. Lastly, ethical considerations include that the study is methodologically sound in order for it to generate scientific benefits.

Approval from the Institutional Review Board at Barry University was sought in agreement with the ethical considerations of research (see Appendix A). Additional Institutional Review Board approvals were sought from the participants' academic institutions if indicated by that institution. This study did not have any direct benefits to the participants. There were no known risks. At the beginning of the interview, the participants were informed that there were no direct benefits or risks, the study purpose, the questions that would be asked, and the audio taping and transcribing of the interview. They were also informed that they may choose to withdraw at any time during the study, that the initial interview was expected to last no more that 1 hour, that the second interview for member checking was expected to last no more than a half an hour, and that the data collected will be kept confidential. Informed consent was obtained from all participants. Prior to obtaining the informed consent from the focus group participants, they were reminded that confidentiality could not be guaranteed due to the nature of the group process.

In order to ensure that the participants freely chose to participate in the study and were not coerced to do so by the researcher, the participants contacted the researcher via telephone or e-mail after having received the recruitment flyer from their dean/director or, in case of the snowball sampling, from their colleagues or acquaintances. To protect the confidentiality of the participants, they were asked to provide a pseudonym at the beginning of the interview, which was then used in the audiotapes and transcriptions.

The audiotapes were stored in the researcher's password-protected personal computer and were deleted upon completion of the member check. The transcriptions are stored in the same password-protected computer, and their printouts are stored in a separate locked filing cabinet at the researcher's home office. The informed consents and demographic sheets are kept secure in a locked cabinet, separate from each other and the transcriptions, also in the researcher's home office. To further protect the privacy of the participants, the interview setting was not recorded or enclosed when it related to an academic affiliation. Any additional data, such as field notes, are also secured in a locked filing cabinet at researcher's home office. All of the written research data will be kept indefinitely.

Data Collection Procedures

Corbin and Strauss (2008) discussed that researchers can use variable forms of data, such as interviews, observations, or documents among others, either alone or in combination. This study collected data through face-to-face interviews. Upon IRB approval, data collection commenced. The data collection occurred in two phases. Phase one included individual interviews, and phase two included a focus group interview. In phase one, based on participants meeting the inclusion criteria, an individual face-to-face interview was scheduled and took place in a public, yet quiet location, which was agreeable to the participant. At the beginning of the interview, informed consent was obtained from the participant. Before beginning the interview, the participant chose a pseudonym in order to protect his or her confidentiality. The participants were then asked to complete a researcher-drafted anonymous demographic questionnaire (see Appendix G). Permission was asked to audiotape the interview and to use an additional device for backup purposes. Both devices were visible to the participant.

The interviews in grounded theory are semi-structured (Wuest, 2012). The semi-structured interviews began with an open-ended grand tour question and proceeded with additional follow-up questions, as well as probing questions as were deemed appropriate (see Appendix E for full list of questions). The grand tour question for both the individual and theoretical focus group interviews was: What are your experiences and feelings about you implementing electronic health records in nursing academia? In grounded theory, the initial question usually will remain the same for all interviews, but the follow-up questions are likely to change as the theory begins to emerge (Wuest, 2012). Important to remember in conducting interviews is that "concepts drive the data collection and analysis" (Corbin and Strauss, 2008, p. 30), meaning that concepts discovered in prior interview offer opportunities to follow up on them in subsequent interviews in addition to discovering new ones. In harmony with qualitative research and the grounded theory principles, the researcher remained flexible during the interviews, encouraging the participants' responses to be intricate and detailed, while keeping true to the purpose of the study. The researcher also returned to previously collected data to reorganize or recode it after a better understanding of the emerging concepts was developed. After the interview ended, the researcher wrote careful field notes. The audiotaped interviews were transcribed by the researcher within 3 days of the interview. The audio recording was deleted after member checking. For member checking, the researcher scheduled another interview within 1 week of the first interview, either in person, via telephone, or via e-mail in which the participant was given the opportunity to determine accuracy of the verbatim transcription (Munhall, 2012).

In phase two, a theoretical focus group interview was conducted upon the emergence of the core category and the relationships among categories. The focus group interview was scheduled to take place at a mutually agreed time and location after the researcher had determined that the participants met the inclusion criteria for the focus group. Prior to obtaining the informed consent from all participants, they were reminded that the confidentiality could not be fully protected due to the nature of the group process. Before beginning the interview, the participants chose a pseudonym in order to protect their confidentiality. The researcher then asked the participants to complete a demographic questionnaire (Appendix G). Permission was asked to audiotape the interview and for the use of an additional device for backup purposes. Both devices were visible to the participants.

Interview Questions

The methods of qualitative research are normally more flexible than those of quantitative research (Mack, Woodsong, MacQueen, Guest, & Namey, 2005). The interviews used open-ended questions (Appendix E) that allowed for greater complexity and freedom in participant responses. Additionally, in qualitative research, the participant-researcher relationship is less formal, allowing the researcher more freedom to respond to the participant-provided information and to adapt the subsequent questions accordingly (Mack et al., 2005). Although Corbin and Strauss (2008) stated that in their experience, unstructured interviews produce the thickest data, they recognize that backup questions are often necessary. This study used an opening question and the backup questions that were prepared as the interview guide (Appendix E). However, in accordance with Strauss and Corbin's (1998) approach, the interview guide was

considered provisional and the questions changed as concepts began to evolve. The grand tour question for both the individual and theoretical focus group interviews was: What are your experiences and feelings about you implementing electronic health records in nursing academia? In harmony with qualitative research and the grounded theory principles, the researcher remained flexible during the interviews, encouraging the participants' responses to be intricate and detailed, while keeping true to the purpose of the study.

Demographic Data

The participants were asked to fill a demographic data questionnaire, which was drafted by the researcher (see Appendix G). The information collected with the questionnaire included: gender, age, primary language, another language spoken, race, ethnicity, highest level of education, area of the highest degree, years of nursing experience, years of experience as a faculty, whether participant worked outside academia, years of experience with the EHR, years of experience teaching with the EHR, and the method used to teach electronic health record documentation to students. The questionnaires were anonymous. The information collected was used for narrative purposes. Gathering background information about the participants added to understanding and describing the full array of context of the study. Specification of background data to clarify context of study is one of the strategies related to the transferability criterion of trustworthiness in qualitative studies (Shenton, 2003).

Data Analysis

Strauss and Corbin’s (1998, 2008) procedures were followed for the data analysis. The data analysis in grounded theory takes place concomitantly with the data collection

(Wuest, 2012). "Analysis begins with collection of the first pieces of data" (Corbin & Strauss, 2008, p. 57). In sampling, the researcher should not get too far ahead of analysis because the next data collection may have an altered focus, meaning that questions that will be asked were discovered in the analysis (Corbin & Strauss, 2008). The data collection and analysis along with constant comparison continued until saturation had been reached, meaning that the categories had fully emerged.

What the researcher was thinking as she was analyzing the data was presented as memos. Memoing was fundamentally important to analysis and was used throughout the data analysis process. Memos are written records of the products of the researcher's analysis (Corbin & Strauss, 2008). According to Corbin and Strauss (2008), memos are "reflections of analytical thought" (p. 120) and "move the analysis forward, and as such are just as important to research process as data gathering itself" (p. 118). They will become more "accurate, complex, and longer later in the study as analysis accumulates" (Corbin & Strauss, 2008, p. 164). It was the procedural link through which the researcher was able to "transform the data into a theory" (Bryant & Charmaz, 2013, p. 245). The researcher wrote memos continuously throughout the course of the research.

Diagramming was also a technique used throughout the data analysis process that aided the researcher in seeing the emerging concepts, categories, and core categories through visual representation (Strauss & Corbin, 1998, 2008). After the interviews ended, the researcher wrote careful field notes. Data analysis began with transcription, which was completed utilizing Word for Mac software with the document formatted to contain three columns. The left column indicated the date and pseudonym for interviewee. The verbatim transcription was in the middle column, and the right column

was reserved for coding. An additional two rows on the bottom of the page were reserved for field notes and memos. Through transcription process, the researcher began to become familiar with the data.

In open coding, the researcher worked through the transcription in an effort to understand the meaning being expressed and began to identify concepts. Open coding was "the analytical process through which concepts are identified and their properties and dimensions are discovered in data" (Strauss & Corbin, 1998, p. 101). Open coding can be accomplished in various ways, such as line-by-line, by sentence, or by paragraph (Strauss & Corbin, 1998). The researcher then gave the ideas conceptual names, which were delineated either as "researcher-denoted" (Corbin & Strauss, 2008, p. 160) or borrowed in the words of the participants, called in-vivo codes. When naming concepts, it was important to remember the context in which the experience was embedded (Strauss & Corbin, 1998). An example of open coding is presented in Table 1.

Table 1

Open Coding

Participant	Narrative	Open Coding
Starla 4/2/15	... I think there is **value** in it for the students because it is their first exposure to... the realization that they will be responsible for and the value of... knowing the **ethical integrity** of... knowing that what their sign they are responsible for and what they put down and document for one. For two it also makes them aware of their level of technology needs to be up to a certain standard and a lot of them are extremely deficient in that area, so it makes them suddenly aware that they need to be more **up to date** and current and that it adds another burden to them in some sense but it also makes them keenly aware that is something that they are going to need to address, so just on that… for start is very **important** for them, so... you know I feel **committed** to that. The students don't like it. They are extraordinarily resistant in a lot of levels. But that, I think it is important. They get better and better at it and easier and easier. And I think that it is a good thing for us to do.	Value (in vivo) Ethical integrity (in vivo) Awareness Competence Up to date (in vivo) Awareness Important Being committed Improving
Field Notes	Used an empty office with dimmed lighting and window to the hallway covered. The venue was very private, comfortable and fairly quiet. You could hear the occasional traffic in the hallway, but it wasn't distracting. Overall good setting though. Participant appeared comfortable and willing to share her thoughts.	
Memos	Hearing a lot of different concepts, mostly working with in vivo coding and phrases. Some of the things heard were recognizing student struggles, expecting excellence, committing/persevering/feeling responsible/value of implementing EHR, facilitating learning, hesitating/clinging to comfort/accepting, and constraining technology.	

Concepts that were discovered were compared to each other for similarities and differences, and those concepts that were found to share similar meanings were grouped into categories, which were more abstract than concepts (Strauss & Corbin, 1998). Through constant comparative analysis, conceptually similar occurrences from new and

previously coded incidents were given the same conceptual name and located under the same category (Corbin & Strauss, 2008). This allowed the researcher to reduce the elements with which she was working with for analysis. After the categories began to emerge, the analysis moved to developing their properties and dimensions, with properties referring to the attributes of the categories and dimensions referring to the property's location on a range (Strauss & Corbin, 1998). Identifying properties and dimensions aided in formulating patterns and variations. Subcategories were also developed, which provided detail information of the category, such as "where, when, why, and how a phenomenon is likely to occur" (Strauss & Corbin, 1998, p. 119).

In axial coding, the researcher aimed to identify relationships between the categories and subcategories (Strauss & Corbin, 1998). In the beginning, knowing which concepts are categories and which are subcategories may be unclear, but as analysis progresses, these distinctions will become more evident (Strauss & Corbin, 1998). Although axial coding is explained separately from open coding, such separation is artificial because, in actuality, seeing the relationships between categories already begins during open coding (Strauss & Corbin, 1998). "Open coding and axial coding go hand in hand" (Corbin and Strauss, 2008, p. 198). In axial coding, the researcher began to relate the categories and subcategories to each other. Identifying the core category began during axial coding and was refined during selective coding. The core category was the main theme of the study and represented "what this research is all about" (Strauss & Corbin, 1998). In deciding on a core category, Strauss and Corbin (1998) noted that certain criteria should apply: it should be central and other concepts are related to it; it should occur often in the data; it has not been forced; its name or phrase is abstract

enough; and it is able to explain variation. An example of axial coding is presented in Table 2.

Table 2

Axial Coding

Participant	Narrative	Axial Coding
Chester 4/22/15	... I feel it's good because it's the real world now. So based on, like even doing, for example doing medications, which I do with the students in the clinical and they see how to do it. Because it's all timed, cause you have to give medications at a certain time and if you pass that time they see the red flag and they also see how the nurses can get themselves into trouble too. Because if you are late on something, you need to document. Why you're late, what's going on, was the patient there, and stuff like that and also by doing the simulated electronic record, it brings everything around, like they look at the diagnosis, then based on that, look at the labs and based on the labs the medications, and then the care plans and based on the care plans it brings the head to toe assessment. So it gives them a more broad perspective on the... electronics, which I like because I've done the paper and done that and I like this one better because it gives you a better overview of how to put it all together. It's like a more complete picture.	**(Embracing), Valuing/** relevance Accountability **(Embracing) Valuing**
	The only thing that hindered me was the trying to make the time to go onto the computer. Like the paper you could always carry to wherever you are and just grade. But it helped because by doing the paper, it's almost the same thing on the computer. It was not a hard transition because I was already used to the care plan, the medication, the labs, the diagnosis. It wasn't hard. It was the time to go onto a computer. Sit in front of the computer.	**(Letting go), Evolving/** time and system barriers

	I mean first it wasn't so easy, but every semester that you do it, you get better at it and then you get more explanation. And then you have guidance, like we were sent directions on how to do the steps or the videos too. So it's not like you were left alone. You always had somebody to go to. Your peers too. So it wasn't so difficult cause you always had someone you could ask. If you would have to fend for yourself, then I would assume it would be difficult. Cause when you were stuck you could call someone or someone would guide you through it. So it didn't make it difficult. So I wouldn't say it was a hard transition. It was fine.	**(Letting go), Evolving** **(Letting go), Evolving/** collegiality **(Letting go), Evolving/** collegiality
	Sometimes the hardest thing is just to explain it to the students, like help them navigate it. That was difficult, but once they explained it in the classroom also, it made the transition easier for them and easier for us also. So all the implementation is all about if you get the help and if you get introduced to it. Once you get introduced to it, you are able to navigate the system and like I said I never felt alone. And if I had a question, I could e-mail someone and you get the response you need. So I can't say for me personally that it has been that difficult. Support is the biggest thing. Because you may get stuck. We e-mail. We may not get the answer right away, but we WILL get the answer. And the classroom for the students was good. They see it, they hear it, and after that they get reinforcement.	**(Relationality) Interacting/** collaboration **(Relationality) Interacting/** collaboration **(Relationality) Interacting/** collaboration
Field Notes	Private office, late at night. Quiet, no distractions. All equipment working fine. Participant relaxed, laughing a lot. Relaxed atmosphere.	
Memos	**Embracing/** recoded **Valuing**: real world experience, better grasp when "get out there", comprehensive. **Letting go/** recoded **Evolving**: The own transition the beginning is the fear of the unknown, but then guidance, orientation, continued support (collegiality) is key to feeling the transition was smooth. Progressive now. Navigating also here. Time for grading is the issue with her too, designating the time to sit in front of computer unlike with paper, which you can take anywhere. Also wanting the thinking (critical thinking). **Relationality/** recoded **Interacting**: feedback is central again, demonstrating, communicating, collaboration, the learning together with the students as has been said before. Core: **Professionalization**: Patient specific, excellence, accountability	

When the theoretical saturation was reached at 13 participants, selective coding began. Two additional faculty participants were interviewed to confirm saturation and assure that no new information was being added. Theoretical saturation occurred when variation had been accounted for, no new relationships, properties, or dimensions among the categories emerged, and the explanatory story began to form. Selective coding was "the process of integrating and refining the theory" (Strauss & Corbin, 1998). Integration refers to the process in which the researcher links the categories around the core category (Corbin & Strauss, 2008). "A theory that is grounded in data should be recognizable to participants, and although it might not fit every aspect of their cases, the larger concepts should apply" (Strauss & Corbin, 1998, p. 161). The core category was refined during selective coding and the theoretical scheme took form. Statements were also developed that explained how the researcher perceived the categories, subcategories, and the core category inter-relating and fitting together. Diagramming, intense memoing, and constant comparison were used throughout the selective coding process.

Another important consideration is reflexivity during data collection and analysis (Corbin & Strauss, 2008). Bracketing refers to the researchers setting aside the experiences they have had with the phenomenon, in order to "take a fresh perspective toward the phenomenon under examination" (Creswell, 2013, p. 80). This researcher used self-reflection through journaling in order to stay attuned to her biases, perspectives, and emotions throughout the data collection and analysis process. As an additional form of bracketing, she also reviewed and discussed the analysis of the transcribed interviews with the dissertation chair and committee members, as illustrated by Fisher (2009) who utilized such bracketing with the other members of his research team. Through these two

forms of bracketing, the researcher sought to ensure that when inductively arriving at a theory, it was truly informed by the participants' subjective views and accurately reflected the process as experienced and told by the study participants.

Research Rigor

Trustworthiness is the term that is used in qualitative research in evaluation of the research rigor (Graneheim & Lundman, 2003; Klopper, 2008; Shenton, 2003). Few models for ensuring trustworthiness exist, but many prefer the model by Lincoln and Guba (Shenton, 2003; Suter, 2012). The four criteria to ensure trustworthiness according to Lincoln and Guba are: credibility, dependability, confirmability, and transferability, with credibility being the most important and overarching criteria to establish trustworthiness (as cited in Shenton, 2003; Suter, 2012). Credibility refers to the believability of the study findings and its evaluation focuses on the quality of data collection, data analysis, and the resulting conclusions (Suter, 2012). Dependability refers to whether repeating the study could render similar results and is enhanced by such strategies as triangulation and audit trails (Suter, 2012). Confirmability refers to handling researcher bias in that the study findings truly are a result of the participants' experiences. Transferability refers to the relevance of the study findings to another similar setting or context, and it is enhanced by meticulous descriptions within the writing of the report (Suter, 2012). Table 3 demonstrates the researcher's adopted strategies for ensuring trustworthiness.

Table 3

Four Criteria for Trustworthiness and Researcher's Adopted Strategies for Pursuing Them

Criteria	Strategy
Credibility	Appropriate methods of data collection (individual and focus group interviews) and amount of data (until data saturation) Triangulation via individual and focus group interviews, as well as recruiting from various nursing schools Use of probes to elicit detailed data during interviews Frequent debriefing between researcher and dissertation supervisor Reflective commentary, journaling to bracket researcher preconceptions and biases Member checking for participants assuring transcriptions written verbatim Thick descriptions of the phenomenon Relating study findings to findings from preceding research
Dependability	Overlapping methods (individual and focus group interviews) Detailed report was provided of the processes within the study Code-recode consistency with going through the data multiple times
Confirmability	Triangulation to assure that findings were truly informed by the participants, rather than the researcher Disclosure of researcher's preconceptions and biases (experiential context) Reflective commentary, journaling to bracket researcher preconceptions and biases Detailed description of methodologies using tables/diagrams to illustrate the steps in the course of the research Audit trail Periodic peer review All data will be stored in password protected computer and will be kept indefinitely
Transferability	Collecting background data via researcher drafted demographic questionnaire to establish study context and participant characteristics Detailed description (including appropriate quotations) of the findings to enhance readers' understanding and aid in enabling them to compare it to their situations and determine a "fit"

Wallace (2014). Adapted from Graneheim & Lundman (2003); Shenton (2003); Suter (2012).

Chapter Summary

This chapter discussed the methods of this study. Grounded theory was the most appropriate research method for this study. Figure 1 illustrates the research design. Sample and setting were then discussed, as were the access, recruitment, and inclusion

and exclusion criteria. Next ethical considerations were explored, followed with explanation of the data collection procedures and interview questions. Finally, data analysis was explained. Chapter Four will follow with an explanation of the study findings.

CHAPTER FOUR

FINDINGS OF THE INQUIRY

Nurses have a vital role in safe utilization of EHRs. In order for nurses to contribute to quality patient information at the bedside and improve the safety of patient care, students must be competent in using electronic health records upon graduation. Lack of knowledgeable nursing faculty or their lack of interest in embracing the use of electronic health record has been suggested as a significant barrier in implementing EHRs in nursing academia (Curry, 2011; Meyer et al., 2011; Taylor et al., 2010; Thompson & Skiba, 2008). The purpose of this grounded theory study was to develop a substantive theory of the process of faculty transitioning to teaching nursing documentation with the electronic health record and the factors that influenced faculty in the transition. It was anticipated that the findings of this qualitative grounded theory study could provide an understanding of the factors that influenced faculty attitudes and behaviors about implementation of electronic health records in nursing academia.

This chapter presents the study findings that resulted from the data collection of 15 individual interviews of faculty participants and one focus group interview of six faculty participants. The categories, subcategories, and the core category emerged from the data through the constant comparative analysis process in accordance with the grounded theory method. This chapter presents a description of the study sample and the results of the data collection including categories, subcategories, and the core category.

Overview

Prior to data collection, Institutional Review Board approval was attained from Barry University and from the prospective participants' place of employment if that

academic institution warranted it. Permission to access nurse faculty was granted by the deans/directors of various nursing schools, both associate and baccalaureate degree (Appendix C). The data collection was conducted in two phases: individual interviews and a focus group interview. Fifteen nurse participants comprised the sample in phase one. Six nurse faculty comprised the sample in phase two. Purposive sampling technique was utilized initially to access nurse faculty who met the inclusion criteria. Additionally, snowball sampling was utilized. The sample represented nurse faculty who were able to provide indispensible insight built upon their knowledge and experience on the phenomenon of implementing electronic health records in nursing academia. Upon emergence of the core category and the saturation of the categories, the sampling shifted to a theoretical sampling technique in which the faculty participants were chosen based on having 2 or more years of experience in implementing electronic health records in nursing academia. The purpose of the focus group in the phase two of data collection was to facilitate clarifying the categories that had emerged through the individual interviews in phase one of the data collection and aid in refining the emerged theory. The categories that emerged in phase one data collection were: embracing, relationality, and letting go. The emerged core category was professionalization, which explained the basic social process of faculty implementing electronic health records in nursing academia.

In accordance with the grounded theory method and the Strauss and Corbin approach (1998), 15 nurse faculty participants were included in phase one of the data collection process. Semi-structured, face-to-face interviews were conducted. The interviews began with a grand tour question and proceeded with additional open-ended follow up questions and probing questions as deemed appropriate, in order to encourage

intricate and detailed responses of participants' attitudes and behaviors about implementation of electronic health records in nursing academia. The grand tour question remained the same throughout the data collection process; however, as concepts were discovered in prior interviews and as the theory began to emerge, the follow-up questions changed. According to Corbin and Strauss (2008), "concepts drive the data collection and analysis" (p. 30).

The initial open coding was the analytical process of identifying concepts, grouping them into subcategories and categories, as well as developing their properties and dimensions. Open coding began by working through the transcriptions and giving ideas conceptual names that were either "researcher-denoted" (Corbin and Strauss, 2008, p. 160) or in-vivo codes. Through the constant comparative analysis, the discovered concepts were then compared to each other for similarities and differences and those sharing similar meaning were grouped into categories. After the categories emerged, their properties and dimensions were developed, as were their subcategories, which provided detailed information of the categories, such as "where, when, why and how a phenomenon is likely to occur" (Strauss & Corbin, 1998, p.119). Seeing the relationships between the categories and subcategories began during open coding and continued through axial coding. The core category, which is the main theme of the study, began to emerge during axial coding and was refined during selective coding. The process of linking the categories around the core category and "refining the theory" (Strauss & Corbin, 1998, p. 161) denoted selective coding.

Data collection and analysis along with constant comparison continued until data saturation was reached. Memoing was fundamentally important to analysis, and the

researcher wrote memos after each interview and continuously throughout the course of the research. It was the procedural link though which the researcher was able to "transform the data into a theory" (Bryant & Charmaz, 2013, p. 245). Diagramming was also used in the data analysis process in order to aid the researcher in visualizing the emerging categories, subcategories, and the core category (Strauss and Corbin, 1998, 2008). The researcher also took careful field notes in order to illustrate the case, events, or actions occurring during interviews (Strauss & Corbin, 1998). In order to assure, when inductively arriving at the theory, that it was truly informed by the participants' subjective views, the researcher engaged in self-reflection through journaling after each interview and through discussing the analysis with the dissertation chair.

After the analysis of the collected data, field notes, journaling, memos, and diagrams, the explanatory story was formed. Diagramming was used in order to facilitate the integration and refining of the theory. After the theory had emerged and the schema was sketched, its draft was then presented to the focus group participants for their reactions. "A theory that is grounded in data should be recognizable to participants, and although it might not fit every aspect of their cases, the larger concepts should apply" (Strauss & Corbin, 1998, p. 161). The following section provides a description of the faculty participants whose perceptions via the collected data contributed to the substantive theory that emerged.

Sample Description

Two groups of participants were interviewed for this study. The phase one group of participants comprised the individual interviews of 15 nurse faculty in an associate degree nursing school. They were currently teaching or had taught nursing

documentation using the electronic health record as part of a clinical course within the last year and had experienced the transition to teaching nursing documentation using an electronic health record as part of a clinical course within the last 5 years. The phase two group of participants comprised the theoretical focus group interview of six nurse faculty in an associate degree nursing school. They were currently teaching or had taught nursing documentation using an electronic health record as part of a clinical course within the last year. They had experienced the transition to teaching nursing documentation using an electronic health record as part of a clinical course within the last 5 years, and they had at least 2 years of experience teaching nursing documentation with an electronic health record.

The theoretical focus group was conducted upon reaching data saturation in order to facilitate clarification of the categories and subcategories that emerged through the individual interviews in phase one. In order to add to the understanding and describing the full array of context of the study and therefore enhance the transferability criterion of the trustworthiness in qualitative studies (Shenton, 2003), background information about the participants was collected via a demographic data questionnaire. In order to maintain confidentiality and protect the participants' identity, the faculty participants were asked to choose a pseudonym.

Phase One Demographic Characteristics

This section describes the participants' backgrounds in an aggregate form based on the data collected via demographic questionnaire filled by each of the participants (Appendix G). Prior to beginning the interview, the purpose of the research was explained to each participant in detail. Each of the participants voluntarily agreed to

participate in the study. The phase one of individual interviews consisted of 15 nurse faculty who were currently teaching or had taught nursing documentation using the electronic health record as part of a clinical course within the last year and who had experienced the transition to teaching nursing documentation using an electronic health record as part of a clinical course within the last 5 years. The phase two focus group occurred after completion of the phase one individual interviews. The background information of the focus group participants will be presented after the discussion of the phase one individual participants.

The nurse faculty who participated in the individual interviews were all female and ranged in age from 32 to 64. All but one of the participants' primary language was English; however, she chose not to identify the primary language. Three (20%) spoke another language in addition to English. The sample included 11 (73%) Caucasian or White, 1 (7%) Multiracial, 1 (7%) Asian or Pacific Islander, and 2 (13%) Black or African American. The ethnicities included 10 (67%) Americans, 2 (13%) European, and 3 (20%) Caribbean. One (7%) participant's highest level of education was a bachelor's degree, 10 (67%) had a Master's degree, and four (27%) had a doctorate degree. The highest nursing degrees held by the participants were PhD (13%), DNS (7%), Master's in Nursing Education (53%), Nurse Practitioner (7%), Certified Nurse Midwife (7%), and a BSN (13%). The years of being a registered nurse ranged from 9 years to 40 years. The participants had worked in nursing education for 2 to 26 years. Ten (67%) of the participants did not currently work outside of academia in clinical practice, such as hospital, home health, public health or private practice, while 5 (33%) of the participants did.

The participants' experience of using EHRs in their own clinical practice as a registered nurse ranged from not having any experience to 12 years of experience. More specifically, five (33%) participants had no experience of using EHRs in their own clinical practice, two (13%) had 1 year of experience, three (30%) had 4 years of experience, one (7%) had 6 years of experience, one (7%) had 8 years of experience, two (13%) had 10 years of experience, and one (7%) had 12 years of experience of using EHRs in clinical practice. The years of experience teaching documentation in academia using EHRs ranged from 1 to 4 years. One (7%) participant had 1 year of experience, two (13%) participants had 2 years of experience, three (20%) participants had 3 years of experience, and 9 (60%) participants had 4 years of experience of teaching documentation using EHRs. All 15 participants noted that the method of teaching EHR documentation in their academic institution was with a simulated EHR. In addition to using a simulated EHR, nine (60%) participants indicated that the students also had exposure to the clinical agencies EHR via the faculty having access to the agency's EHR, meaning that the students were able to view the agency's EHR with the faculty but not be able to document with it. Three (20%) participants also indicated that the students had their own access to the agency's EHR during the clinical rotation, meaning that the students were able to view the agency's EHR on their own but not be able to document with it. Tables 4 and 5 provide an overview of the background information of the phase one individual interview participant sample, as collected via the demographic questionnaire (Appendix G).

Table 4

Demographic Background Information (N = 15)

	Measure	Frequency	Percentage
Gender	Women	15	100%
Primary	English	14	93%
Language	Other	1	7%
Another	Spanish	1	7%
Language	Creole	1	7%
	Other	1	7%
Race	Asian/Pacific Islander	1	7%
	Black/African American	2	13%
	Caucasian/White	11	73%
	Multiracial	1	7%
Ethnicity	American	10	67%
	Caribbean	3	20%
	European	2	13%
Educational	Bachelor's	1	7%
Degree	Master's	10	67%
	Doctorate	4	27%
Highest	Master's nursing education	8	53%
Nursing	Nurse Practitioner	1	7%
Degree	Certified Nurse Midwife	1	7%
	DNSc	1	7%
	PhD	2	13%
	Other	1	7%
Working in	Yes	5	33%
Health care	No	10	67%
Method of	Simulated EHR	15	100%
EHR	Exposure in clinical	9	60%
Teaching	Student agency EHR access	3	20%

Table 5

Demographic Background Information cont. (N = 15)

	Mean (years)	Median	SD
Registered Nurse	21.6	21	11.8
Nursing Education	10.9	8	7.7
EHRs in practice	4	4	4.3
EHRs in academia	3.3	4	0.98

Phase One Individual Characteristics

This section presents the authentic data obtained from each of the participants during the individual interviews in phase one and through the demographic questionnaire as completed by each of the phase one participants prior to beginning the interview. Participants' statements from the interviews and the selected demographic background information together provide a genuine illustration of each participant. In some instances the participant's voice was emphasized using italics. Each participant was asked to choose a pseudonym in order to ensure confidentiality.

Starla. Starla was a Caucasian/White female with a doctoral degree and 21 years as a registered nurse. She has worked in nursing education for 21 years and was not currently working outside academia. Starla reported no experience working with the electronic health records in her own clinical practice but has taught documentation to students using EHRs for the past 3 years. She reported the method for teaching EHR

documentation in her academic institution as a simulated EHR. In reflecting back to the time that EHR implementation was initiated in her academic institution, Starla stated:

> It was difficult because there was a lot of resistance. There was a lot of resistance with students, but I would say that students take direction more than faculty. So I would say that students were willing to do whatever we said because they didn't have a whole lot of alternative. The faculty were much more passive resistant and they can get away a lot more. So I would say it was more difficult and that's an ongoing battle too. Really, so … the transition was trying to get everyone onboard and for us to be a consistent front for the students. I think that's still a challenge but I think that, I think that it is going all right for sure. I really do. Because it hurts the students, I mean it really hurts the students and you want to be faculty and you want to be in academia and if you are not there for the students you have no business being there. That's how I feel.

Judy. Judy was a Caucasian/White female with a Master's degree in nursing education and 40 years as a registered nurse. She has worked in nursing education for 4 years and is currently working outside academia in another health care setting. Judy reported 12 years of experience working with electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 3 years. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR and exposure during clinical rotations. Judy first stated: "I think it is very beneficial to the students because it simulates what I actually do when I am actually working (in a hospital). It is very similar in that respect." In discussing her experiences with implementing EHRs in nursing academia, Judy talked about how time

consuming it is for students and faculty alike. Regarding students she shared: “it takes time for them to actually know what we expect from them, using the electronic health record”…. ”I find that the students are wasting so much time, trying to find things there”… “All I want them to do is to enter the information and learn from it, not take all their time trying to navigate through the system. That’s not the intent”. About faculty she stated: “It (simulated EHR) is extremely time consuming to grade if you do it correctly, which I do”…. “As faculty member, it is very time consuming. It takes over an hour per student and that’s pretty much if they got it right”. She also shared her vision: “I think what would be ideal is to be able to, like in some hospitals, let the students sign on to their system”…. “Because they can chart right away, you know they can actually go and do what they have to do, vitals and assessment and then go chart it immediately”…. “There would be no time. It’s real time, so there is no excess time for you or the student.”

Mutton. Mutton was a Caucasian/White female with a Master’s degree and 10 years as a registered nurse. She has worked in nursing education for 6 years and is currently working outside academia in another health care setting. Mutton reported 10 years of experience working with electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 4 years. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR and exposure during clinical rotations. In sharing her feelings about implementing EHRs in academia, Mutton stated:

> I think it is an excellent idea. I like doing it now that the platform of the simulated EHR is better. I would like to see some more improvements to the simulated EHR from the educator’s point of view... I would also like to see it be

> little more flexible for the students as far as the dropdown windows. It wasn't just click click click; it wasn't made so easy. I would also like to see things that were more specific to the patients; maybe places where they could actually type in comments, so that it was more like a webpage. That's what I would like to see more like a webpage so it would be more flexible in that way. I know I use an electronic health record at work, and it has places for comments.

Browser. Browser was a multiracial female with a doctoral degree and 39 years as a registered nurse. She has worked in nursing education for 25 years and was not currently working outside academia. Browser reported 1 year of working with electronic health records in her own clinical practice. She has taught documentation to students using EHRs for the past 4 years. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR and exposure during clinical rotations. In discussing implementing EHRs in nursing academia, Browser stated:

> I look at myself as a facilitator because having the old way (paper) and the new way (EHR), I was able to show them (students) the positives and negatives. Because there are a lot of positives about it too. Over the years, we have learned more, I think, how we need to document and what we need to document. Coming from the old old school, you know, we didn't do as much documentation as we do now. And I think with that, ... I'm able to show them the greater need of documentation and the importance. Because once you do this, because you can't make changes to it. Where in the past, you could make changes, but with this you

> really can't, so the importance of making sure that you do the correct documentation with the electronic one.

Ms. Pink. Ms. Pink was a Caucasian/White female with a Master's degree in nursing education and 20 years as a registered nurse. She has worked in nursing education for 8 years and was currently working outside academia in another health care setting. She reported 4 years of experience working with the electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 4 years. Ms. Pink reported the method for teaching EHR documentation in her academic institution as a simulated EHR and exposure during clinical rotations. In thinking back to transitioning from teaching paper-based documentation to implementing EHRs in nursing academia, Ms. Pink reflected on a hindrance:

> Not being able to give them the feedback on how they did their care plan or how they did their assessment. If I type the feedback on the computer, it gets sent to them and if they see it at home, they may forget, then come to clinical and they never talk about it as opposed to have it handwritten on a piece of paper when you hand it back to them and they ask "what does this mean?" and you can explain. So that always bothers me about the two. I think that it helped them learn. That's a big one.

Sunibaby. Sunibaby was an Asian/Pacific Islander female with a doctoral degree and 17 years as a registered nurse. She has worked in nursing education for 10 years and was not currently working outside academia. Sunibaby reported 10 years of experience working with the electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 4 years. She reported the method for

teaching EHR documentation in her academic institution as a simulated EHR, exposure during clinical rotations, and academia-agency partnership in which students have their own access to the agency's EHR. Sunibaby stated:

> My experience in the clinical area with students and with practicing nurses and also comments from nurse managers is that new nurses starting or even experienced nurses who haven't been exposed to the electronic health records, that's the largest amount of time they spend in the hospital trying to figure out how to use it. So it's really good that they are using it and it's incorporated in academia.

Cooking Italian. Cooking Italian was a Caucasian/White female with a Master's degree in nursing education and 19 years as a registered nurse. She has worked in nursing education for 10 years and was not currently working outside academia. Cooking Italian reported 1 year of experience working with the electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 4 years. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR, exposure during clinical rotations, and academia-agency partnership in which students have their own access to the agency's EHR. Cooking Italian reflected:

> Overall I would have to say that my experience has been positive, I think, as I said before, that the transition initially was difficult having to learn along with the students. Having some experience prior to was helpful, but again with the different platforms it made it difficult. I think ultimately the experience overall was positive, but there were up and downs with the experience in trying to learn

> as much as I could to appropriately provide the teaching for them and show what effective documentation can do for your patient, especially as I said before showing them particular charts (in a hospital) where information had been done in certain areas and information that had been left off, how that could be a vital piece for their particular patient. How detrimental it could be to leave something off or to inappropriately document something and then of course nurses changing rapidly, shifts changing then how things can slip through the cracks if it's not appropriately documented, so that the next nurse that comes to care for the patient, sees what needs to be done and it can be followed across the board, so I think that's the difficult part of it and that's the ups and downs of it but I think ultimately it's a good experience for students because right now they have the ability to do it in a safe environment where they can see how detrimental it can be if you don't do it appropriately.

Maryanne. Maryanne was a Caucasian/White female with a bachelor's degree and 10 years as a registered nurse. She has worked in nursing education for 2 years and was currently working outside academia in another health care setting. Maryanne had no experience working with electronic health records in her own clinical practice but has taught documentation to students using EHRs for 1 year. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR. In conversing about transitioning to the EHR in academia, Maryanne shared that not having experience with EHRs in her own practice was a hindrance for her:

> I work in a private sector, so we haven't actually changed over to electronic charting, so when I was in school everything was in transition. Most of the

> facilities I was doing my clinicals at, were at least starting to change over. I wasn't, at the time, nobody was fully changed over yet and my facility that I work in is private sector, so I haven't had a lot of experience with it, so myself. I mean I have seen it and been to facilities and seen how it works, but I haven't had a whole lot of experience doing it. I've had more experience manipulating it in the clinical setting with my students when grading it than I have had in my own clinical practice. So it has been a little bit of hindrance, but I would say that is specific to me and my situation because of where I work.

Boomerang. Boomerang was a Caucasian/White female with a doctorate degree and 24 years as a registered nurse. She has worked in nursing education for 6 years and was not currently working outside academia. Boomerang reported 6 years of experience working with electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 4 years. She reported the method for teaching EHR documentation in her academic institution as a simulated electronic health record. For Boomerang, the challenge in transitioning to implementing EHRs in academia was a distance she felt, particularly as it related to giving students feedback on their documenting:

> Well, I was very familiar to start off with electronic charting, so for me it wasn't such a problem. Because I understood the purposes and how it was done and I understood the importance of the students understanding that this is the way it's done now, so I didn't find a real hindrance... I think the only thing I didn't and still don't like is that distance now with the students. Because you are giving them

> feedback online and sometimes it's very hard to do, rather than in person saying: Gee, what were you thinking?

Snow White. Snow White was a Caucasian/White female with a Master's degree in nursing education and 24 years as a registered nurse. She has worked in nursing education for 14 years and was not currently working outside academia. Snow White reported 4 years of experience working with electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 4 years. She reported the method for teaching EHR documentation in her academic institution as a simulated electronic health record and exposure during clinical rotations. For Snow White, transitioning to EHRs in academia was a gradual process from initial hesitance to full acceptance:

> I would say it was gradual…. I was always like when we first started it, I was always like hesitant towards it, you know like the technology of it, but I do see its benefit. And we reverted back, just this semester to our old paper document, you know hand written, just for until… you know we did it more in steps for the first semester students and I couldn't wait to get back to the electronic one. And I never thought I would say that…. I think once I get to the comfort level, like anything with technology. If I do it more then it becomes not a big deal to me anymore. And I try to be open to learning new things. Definitely with technology, I push myself because it's an area that I am scared about... but more I do it, I feel ok. So now that I feel ok, I just try to help the students through the process.

Laura. Laura was a Caucasian/White female with a Master's degree in nursing education and 28 years as a registered nurse. She has worked in nursing education for 26 years and was not currently working outside academia. Laura reported no experience working with electronic health records in her own clinical practice but has taught documentation to students using EHRs for the past 2 years. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR and exposure during clinical rotations. For Laura, implementing EHRs in her clinical teaching was time consuming because giving feedback was important for student's learning. With time, her expectations regarding students learning experience with the EHR changed as did her self-expectations:

> Ok, my experiences are that they take a lot of time. Very time consuming. You must be honest…. You have to be honest with yourself. You give them feedback and this way it will be a good learning experience for them….
>
> You know maybe I didn't do so good work in the beginning. I wasn't sure what we were looking for. It was more like let them put the information in, let them just go in and do it. Who cares how they do it, but now since time has gone by, even understanding that myself, that no that's not the good way. They have to know that specific client and not to, you know put all kind of information there….
>
> So that's time consuming when you aim to do a good job. You know, give them something. Leave them with something. I don't take it lightly. I try to give the best. I try to do that. You have a responsibility towards the students. You have to get it right. And you got to give them a learning experience. In making a comment, it should be based on scientific knowledge, critical thinking and

> everything. So we have a huge responsibility. I take it as an important learning tool and important learning for the students; therefore it's not to be taken lightly.

WTM. WTM was a Caucasian/White female with a Master's degree and 35 years as a registered nurse. She has worked in nursing education for 14 years and was not currently working outside academia. WTM reported no experience of working with electronic health records in her own clinical practice but has taught documentation to students using EHRs for the past 4 years. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR. In transitioning to using EHRs in academia, WTM did not have much trouble with her own transitioning:

> I think that because I was very involved with its implementation here, when it first came here, so for me, it was just taking the step to really learn what we are using. I think. I really didn't feel too hindered; it was... just a matter of getting used to it. So I didn't really feel too hindered. I think that just comes with how much effort you put into making yourself comfortable with it.

For WTM, the problem with EHRs in academia was with the "checkboxes:"

> I just think that lot of the things (in the EHR) really are not patient specific, you know what I mean. In other words, they (students) think that if they fill a box, they're done. That's just how it is. That's what they think. Which is not OK for me because there is a whole different thing to look at. You know, I don't think it's unique to here. It's societal. They are going to do the path of least resistance. Wherever they can fill in a blank, with something that must be appropriate because it's in a dropdown. They are looking that it must be appropriate, rather than is it really not appropriate for their patient.

Rose. Rose was a Caribbean female with a Master's degree in nursing education and 35 years as a registered nurse. She has worked in nursing education for 4 years and was not currently working outside academia. Rose reported 8 years of experience working with electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 3 years. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR and exposure during clinical rotations. Rose explained:

> Well it (EHR) takes time to learn and ... and you cannot help your student until you know about the software. If you are going to teach something, you have to know it very well. OK. To make a difference and send the correct message... change, change always, change... you get a little bit anxious, about changes and we have *been* accustomed to paper. Change is often anxiety provoking. So, changes brings on or change brings on a little bit of anxiety... but the change is for the better. You have to see, you have to look ahead. As I said, the future is now.

Mrs. Blue. Mrs. Blue was a Caucasian/White female with a Master's degree in nursing education and 9 years as a registered nurse. She has worked in nursing education for 5 years and was not currently working outside academia. Mrs. Blue reported no experience working with electronic health records in her own clinical practice but has taught documentation to students using EHRs for the past 4 years. She indicated the method for teaching EHR documentation in her academic institution as a simulated EHR, exposure during clinical rotations, and academia-agency partnership in which students have their own access to the agency's EHR. She shared her feelings about implementing EHRs in nursing academia:

> As faculty honestly, I like the paper better because I find it easier to grade ... but I don't think that should impact whether or not the school uses it or not. The student is what comes first and they are the ones who are important and who need to learn these kinds of things, so even if *faculty* are resistant to it... I don't think it really matters. I think it's really what is going to benefit the student most.

Chester. Chester was a Black/African American female with a Master's degree in nursing education and 15 years as a registered nurse. She has worked in nursing education for 8 years and is currently working outside academia in another health care setting. Chester reported 4 years of experience working with electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 2 years. She communicated the method for teaching EHR documentation in her academic institution as a simulated EHR and exposure during clinical rotations. She discussed about her transition from papers to EHRs in academia:

> It wasn't bad. Because I remember, well I have done EHRs like Meditech™ and stuff as a nurse. But when I started teaching about it wasn't until when I got here in the last two years... So, it's been a good transition. I can't complain. I know I was leery in the beginning, I was like oh my god, they use electronic documentation here, I'm used to the paper what am I going to do. Then orientation came and they walked us through it, so I thought, OK this is not so bad. Not bad at all, so that helped. It's doable, cause you get frightened of the unknown and then once you see it and then you do it, you like this is what I was scared of. That's not bad.

Phase Two Focus Group Characteristics

The nurse faculty who participated in the focus group interview were all female and ranged in age from 35 to 69. All participants' primary language was English. Two (33%) spoke Spanish in addition to English. The sample included 5 (83%) Caucasian/White and 1 (17%) Black/African American. The ethnicities included 3 (50%) Americans, 1 (17%) European, 1 (17%) Jamaican, and 1 (17%) Russian. Four (67%) participants had a Master's degree, and two (33%) had a doctorate degree. The highest nursing degrees held by the participants were PhD (17%), Master's in Nursing Education (50%), Nurse Practitioner (17%), and Clinical Nurse Specialist (17%). The years of being a registered nurse ranged from 10 years to 40 years. The participants had worked in nursing education for 5 to 15 years.

None of the participants currently worked outside of academia in clinical practice, such as hospital, home health, public health, or private practice. The participants' experience of using electronic health records in their own clinical practice as a registered nurse ranged from not having any experience to 8 years of experience. More specifically, two (33%) participants had no experience of using EHRs in their own clinical practice, one (17%) had 2 years of experience, one (17%) had 4 years of experience, one (17%) had 5 years of experience, and one (17%) had 8 years of experience of using EHRs in clinical practice. All (100%) participants reported 4 years of experience of teaching documentation to students using electronic health records. All six participants noted that the method of teaching electronic health record documentation in their academic institution was with a simulated EHR. In addition to using a simulated EHR, four (67%) participants indicated that the students also had exposure to the clinical agencies EHR

because faculty had access to the agency's EHR, meaning that the students were able to view the agency's EHR with the faculty, but not be able to document with it. Tables 6 and 7 provide an overview of the background information of the phase two participant sample, as collected via the demographic questionnaire (Appendix G).

Table 6

Demographic Background Information (N = 6)

Measure		Frequency	Percentage
Gender	Women	6	100%
Primary Language	English	6	100%
Another Language	Spanish	2	50%
Race	Black/African American	1	17%
	Caucasian/White	5	83%
Ethnicity	American	4	67%
	Russian	1	17%
	Jamaican	1	17%
Educational Degree	Master's	1	67%
	Doctorate	2	33%
Highest Nursing Degree	Master's nursing education	3	50%
	Nurse Practitioner	1	17%
	Clinical Nurse Specialist	1	17%
	PhD	1	17%
Working in Health care	No	6	100%
Method of EHR Teaching	Simulated EHR	6	100%
	Exposure in clinical	4	67%

Table 7

Demographic Background Information Cont. (N = 6)

	Mean (years)	Median	SD
Registered Nurse	23.5	19.5	13.8
Nursing Education	9.7	10	3.3
EHRs in practice	3.2	3	3.1
EHRs in academia	4	4	0

Todd. Todd was a Caucasian/White female with a doctorate degree and 40 years as a registered nurse. She has worked in nursing education for 5 years and was not currently working outside academia. Todd reported 5 years of experience working with electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 4 years. Todd indicated the method for teaching EHR documentation in her academic institution as a simulated EHR. Todd felt that implementing EHRs in academia was positive but expressed some challenges in terms of grading the simulated EHR documenting:

> ... I don't mind using it. I don't use it probably as well as some other people, like I don't use, the one that we use, I don't make comments directly next to the documenting, but I do use the comment box at the bottom and that's where I put my comments next to each section... what I did do in the beginning, I used it in the clinical area with my iPad™. I found that a very good learning experience

> with the students. However, I graded them at the time *there* not realizing that the grade was not going through. It looked like it was going through on the iPad™, but it was not going through.

Deliverance. Deliverance was a Black/African American female with a Master's degree in nursing education and 12 years as a registered nurse. She has worked in nursing education for 10 years and was currently not working outside academia. Deliverance reported 8 years of experience working with electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 4 years. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR and exposure during clinical rotations. Deliverance explained:

> I like the electronic health record, but I prefer the paper first. As a nurse, I remember when they were implementing the electronic charting and one of the rationales they were saying was to save paper. I think we used more paper that time than before because we used paper and then transcribed it, and yes we lost a lot of data in transcribing it from paper to the computer. Likewise with the students.

Donald Duck. Donald Duck was a Caucasian/White female with a Master's degree and 14 years as a registered nurse. She has worked in nursing education for 10 years and was not currently working outside academia. Donald Duck reported no experience working with electronic health records in her own clinical practice, but has taught documentation to students using EHRs for the past 4 years. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR.

Donald Duck shared her thoughts on finding the balance in implementing EHRs in academia:

> It's just very hard to really know if the students understand their patient and can critically think using electronic documentation, but I do think that it serves its purpose because it does reflect, you know, what they are going to do in practice. It's just finding the balance.

Scootie. Scootie was a Caucasian/White female with a doctorate degree in nursing education and 25 years as a registered nurse. She has worked in nursing education for 15 years and was not currently working outside academia. Scootie reported 2 years of experience working with electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 4 years. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR and exposure during clinical rotations. Scootie spoke about her feelings in transitioning implementing EHRs in nursing academia:

> I honestly think that, I mean I honestly believe that what we are attempting to do is introducing them (students) to something that they will be dealing with when they become a nurse, but because our focus is not on the doing of nursing, but learning of nursing, I honestly think that we should be using the paper format with couple of the simulated EHRs through the semester, so that they can gain familiarity instead of solely relying on the simulated EHRs.

Charlotte. Charlotte was a Caucasian/White female with a Master's degree in nursing education and 40 years as a registered nurse. She has worked in nursing education for 10 years and was not currently working outside academia. Charlotte

reported no experience working with electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 4 years. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR and exposure during clinical rotations. In Charlotte's transition to implementing EHRs in academia, she discussed her concerns about being able to get the same accuracy of documentation in the EHR as she felt was accomplished when she taught paper documenting:

> They were putting (in the simulated EHR) things that didn't apply to their client... using nursing diagnosis that did not seem applicable, so I have the tendency to like the paper and pencil, the paper that we were using better. And maybe it's just the oldness ... and because I have used it for so long. Now how do we get the comfort and the accuracy of information ... onto the electronic health record that we have on paper?

Laney. Laney was a Caucasian/White female with a Master's degree in nursing education and 10 years as a registered nurse. She has worked in nursing education for 8 years and was not currently working outside academia. Laney reported 4 years of experience working with electronic health records in her own clinical practice and has taught documentation to students using EHRs for the past 4 years. She reported the method for teaching EHR documentation in her academic institution as a simulated EHR and exposure during clinical rotations. When Laney spoke about implementing EHRs in academia, she stated:

> I think it would be ideal if we could get them to do our EHR in the clinical setting, so I think that would probably be the best scenario. If they were doing it in real time, I think that they would get a lot more out of it.

Results

This section discusses the three main categories and their subcategories with voices of the participant supporting and giving meaning to the categories and subcategories that emerged from the data. Phase one consisted of 15 individual interviews. Data saturation was reached after 13 interviews. Two additional individual interviews were conducted in order to verify that no new information was being discovered that would add to the emerged categories. The researcher transcribed all phase one individual interviews no more than three days after the interview and the phase two interview was transcribed the following day. Member check was completed within one week of the initial interview.

Strauss and Corbin's (1998, 2008) procedures were followed for the data analysis. The data analysis occurred alongside with data collection and began with the first interview data. In accordance with the Corbin and Strauss (2008) approach, the researcher strived not to get too much ahead of analysis in data collection because the next data collection could have an altered focus, meaning that questions that will be asked were discovered in the analysis. The data collection and analysis along with constant comparison continued until saturation was reached, meaning the categories had fully emerged. The three main categories that emerged from the phase one data collection and analysis process were: embracing, relationality, and letting go. Embracing means to accept, appreciate, and being satisfied (Ness, Hellzen, & Enmarker, 2014).

Relationality refers to self "in relation to others" (Munhall, 2012, p. 161). Letting go "implies freeing of oneself from present constraints so that we may see and be in new ways" (Boykin & Schoenhofer, 1993, p. 7). Within each main category, several subcategories emerged, which provided detailed information of the category, such as "where, when, why, and how a phenomenon is likely to occur" (Strauss & Corbin, 1998, p. 119). The core category that emerged during the axial coding process was Professionalization.

Clarification of the three main categories was achieved through the focus group interview in phase two of the data collection and the subsequent data analysis. The valuable insight gained through the focus group in the phase two of the data collection lead to revisiting the conceptual names of the emerged categories. The categories that had emerged in phase one were not refuted by the theoretical focus group, but rather they illuminated the categories. While the overarching substance and meaning of the categories remained the same, the theoretical sensitivity gained through the focus group lead the researcher to conceptually refining the categories and the schematic illustration of the emerged theory. As a result, embracing was re-conceptualized as valuing, relationality as interacting, and letting go as evolving. The following section defines and presents the three main categories and their subcategories with voices of the participant supporting and giving meaning to the categories and subcategories that emerged in the data collection process. In some instances, the participant's voice was emphasized using italics.

Valuing

Valuing is seeing something as important or of benefit (O'Connor, 2006). It is the act of granting existence (Grossman, 2009). The category of valuing emerged from the participants' feelings of implementing EHRs in academia and expressed the notion among all of the participants that using EHRs in nursing academia was beneficial and important. Their attitude was overwhelmingly that it was necessary for students to utilize EHRs during their nursing studies. The subcategories that provided further detail about the category of valuing were: relevance, readiness, and experience. The participants felt that today when EHRs are commonplace in nursing practice, in order for the graduates to be ready for practice and have an easier transition to practice, they ought to have the opportunity to experience and practice electronic documentation while in school. Participant quotes illuminate the category of valuing and the subcategories of relevance, readiness, and experience.

Mrs. Blue stated:

> I think it's definitely important for the students because that's how everything is going right now. I mean all the hospitals have the electronic health records no matter where they'll go. So it's really important in nursing schools that they are exposed …. I think it's definitely necessary, let me put it that way. I think it's *definitely* a necessary thing even if there is resistance as far as faculty goes. Cause, they have to know it. That's what they're going to get out there and do, so they have to know it.

Sunibaby commented:

> I think it's of utmost importance to incorporate electronic health records. It provides the students and later nurses to have a formalized way of documenting their assessment or what ever their clinical experiences are. In terms of following up for legal reasons, ethical reasons, the electronic health record is important.... For health care provides as a whole, in terms of the multidisciplinary team, it serves as a good way of each discipline following each other and also from one shift to next it's a good way to track those. So, incorporating it in the academic setting is important because they need to be exposed to it prior to going out.

Rose noted:

> It will be an advantage, a tremendous advantage. Because when you go to a hospital now, you need to have a degree, but you need to be computer savvy and they are learning it now and they are learning it in a methodical way where you know how to access the computer, you know how to document, but you know how to document correctly. So your transition to a hospital because even though software is different, the concept is the same, so the transition is I think is easier, will be easier.

Starla stated:

> ... I think there is value in it for the students because it is their first exposure to... the realization that they will be responsible for and the value of ... knowing the ethical integrity of ... knowing that what they sign they are responsible for and what they put down and document for one. For two, it also makes them aware of their level of technology needs to be up to a certain standard and a lot of them are

> extremely deficient in that area, so it makes them suddenly aware that they need to be more up to date and current and that it adds another burden to them in some sense, but it also makes them keenly aware that is something that they are going to need to address, so just on that ... for start is very important for them, so ... you know, I feel committed to that.

Boomerang felt:

> I think its good that the students get to know that this (EHR) is part of their life once they graduate and become nurses. I think that since every hospital has their own system and they all differ widely it's very hard to teach the electronic charting to them because you don't know what system they are going to go into. However, just the experience of having to go in, go through different pages, going to different sections, understanding how these work and layer with each other, you know to get the different parts of it, is very important and understanding basically turning pages, going to different tabs, that's really really important, so that's very, very good part of it.

Coking Italian stated:

> I think it's a positive push in the right direction because I think that the students really need to understand how to use an electronic health record prior to getting out in the working world and I think that it will make their transition from student to novice nurse a lot easier because most facilities use electronic health records now. So I think it's definitely positive, I'm happy about it and I enjoy using it and I feel comfortable using it with the students.

Relevance. Relevance is a dynamic concept, which implies that something is pertinent, needed, and useful for the user (Borlund, 2003). The faculty participants felt that the future was now and therefore EHRs must be taught in nursing academia. Following participant quotes illuminate subcategory of relevance.

Judy commented: "I think it is very beneficial to the students because it simulates what I actually do when I am actually working. It is very similar in that respect." Ms. Pink stated: "... I think it's great, a better tool. I'm sometimes old school and miss handwritten... but I think it's a way of the future. You have to have it." Maryanne noted:

> I mean if we were still on that mode where they were in the clinical facility seeing electronic charting and then we (faculty) were asking them to hand in a paper, it would take away and it wouldn't really be helping the student achieve what they need to achieve …. I mean one thing I know in actual practice what I like about electronic charting there is no leaving blanks it prompts you to things at certain times, so I think that what's good for the goose is good for the gander. So if it's good in the actual setting, then it's good for the students.

Snow White stated:

> I definitely think it's useful. And I was a disbeliever at first, but I do definitely, you know, for years they were saying we were getting rid of paper, and it's reality now. I take and show them the charts in clinical, and you know there is nothing in them and tell them that there is really nothing in them anymore, except a face sheet maybe, but everything is electronic, the progress notes, history, orders, everything is in the system. So definitely, you know that was the area that students said before, you know the feedback, that with paper before they were not

> prepared to go to practice. So now, even though it's not perfect, the simulated record, even though it's not perfect, it prepares the student for practice. Like when I graduated, we weren't on the electronic record, so doing the paper while in school was appropriate, but now we don't use paper anymore, when you write a nurses note, you access, that's your signature, so to do it with a paper is kind of pointless and then it's more of a shock when they go to the reality and never seen the care plans electronically, seen the assessment electronically or nurses notes electronically.

Readiness. Readiness is seen as possessing the qualities and skills needed for one's future role (Coates & Gilroy, 2014). The participants' beliefs were that an outcome of implementing EHRs in academia was that the students would be better prepared as they graduate and will have an easier transition to practice. The following participant quotes illuminate the subcategory of readiness.

Browser stated:

> I keep hearing that they are better prepared when they get to the work environment because of what they learn in the academic setting and I know for a fact that they feel more confident in themselves that they know what they are going to do when they go out there. You know I stress that what you learn here is what you are going to see out there and the electronic records that we are teaching you, it's what's out there.

WTM reflected:

> I think it's beneficial .... I think it's real life learning for the students .... I think that the students are truly prepared when they get to the clinical practice. I think

> that's a positive. I do think it's the future …. I mean I don't know what the real systems in the hospital are like; if they are better, but I definitely think for student outcomes it's a big plus. It's introducing them to real world what they really will be doing…. So I think that the outcome is that it prepares them for the real world.

Sunibaby declared:

> I'd ask them (managers), what are the current graduates ..., what do they need to know. And almost always they would say, familiarity with the electronic health records and then they would verbalize that students who don't have access to electronic health records don't do that well. They have gone as far as saying that they like to hire our students because they were exposed to the electronic health records. And it is preposterous that you have nursing schools currently that graduate students without students even seeing an electronic health record.

Experience. Experience, for example, through clinical learning (Mattila, Pitäjärvi, & Erikson, 2009) or simulation learning (Felton, Holliday, Ritchie, Langmack & Conquer, 2013) involves an individual gaining knowledge through exposure or involvement in an activity or skill. In having the opportunity to practice documentation with an EHR while in school, the faculty participants felt that students gain a level of knowledge that will be to their advantage in the future. The following participant quotes illuminate the subcategory of experience.

Chester commented:

> I mean, like the outcome that I see, they have a better grasp... because they are exposed to electronic documentation. They have a better balance when they are out there. So it's not so hard for them to grasp. So the program really helps them.

> Because the documentation really helps them that OK this is what you have to do, like the medications, this is what you have to do. So it's not foreign to them, when they get out there to practice. So the outcome I think it gives them a better perspective too. Because they see how long it takes. Because it's timely. It's not a minute thing you do. And when they see the nurses in the hospital in front of the computer, 2 or 3 hours, they get it. Because now *they* have to go home and do it. So it gives them a better view of what is to come in future when they graduate.

Sunibaby stated:

> They (graduates) may not know Cerner™ or Ecos™, or Meditech™, but at least they know how to maneuver one system to the next on the computer. So when they do the orientation, they get what 2 weeks, 4 weeks and it takes a long time to learn an electronic health record, so then they can actually concentrate on other things and begin to feel that they are moving from that novice state a lot faster than if they are stuck in that state just trying to figure out how to work out the electronic health record. So employability, retention, recruitment, and definitely personal satisfaction that they are able to accomplish a task. Cause you know when we first started as nurses, you accomplished one thing, and you felt like you conquered the world because I know something. So they get a lot of personal satisfaction and feeling self-confident. And they feel like they are ahead of the game. Like I said it doesn't have to be the same exact thing, but because it was something similar to the electronic health records out there, they felt comfortable.

Laura noted:

> I mean this is our world now. Wherever they (students) will be going, this is the life in the hospital. So the outcome is that they got to be able to do it and we have to make sure that we give them that comfortable level, so that when they are real nurses, they have the skills. That's the real purpose here.

Browser stated:

> I think it builds their confidence, because I keep telling them that you are in the electronic world and you have to learn this because this is all you are going to see out there. Paper is gone for *good*. This is all you're going to see out there. So yes I think it helps them and they will have more confidence in themselves when they go out there because I had the opportunity to teach those who never had the electronics and went out. I taught them paper and they went out. Now *they* had to learn electronics on the job, they had no exposure. And now I have taught those who were exposed to it before they went out and I can say that we sent them out really feeling... that they are somewhat prepared. Because it's not all brand new to them, they are not oblivious to them, they have an idea.

Interacting

Kleiman (2004), in her phenomenological study of nurse practitioners interacting with their patients, described interacting as meaning "openness, connection, concern, respect, reciprocity, competence, time, and professional identity" (p. 264). King's (2006) interacting systems framework (Shanta & Connolly, 2013) maintains that there are three interacting systems: personal, interpersonal, and social. Personal system refers to "understanding of self and others," while "interpersonal system concentrates on

interaction, communication, transaction, role, and stress," and finally in the social system "interaction occurs within and between groups of people that share common goals, interests, and values representative of the social system" (Shanta & Connolly, 2013, p. 175).

The main category of interacting explains how the participants experienced the influence of implementing EHRs on interacting with students, peers, staff nurses, agencies and even the EHR. One of the key factors that participants conferred was being in a different location when giving feedback or not being able to have the electronic record available when assisting students in the teaching moment during clinical time. The participants revealed several strategies they now used, such as taking time to talk with the student during clinical time. Participant quotes enlighten the main category of interacting and the subcategories of feedback, collaboration, and awareness. In some instances the participant's voice was emphasized using italics.

Boomerang shared:

> ... I think the only thing I didn't and still don't like is that distance now with the students. Because you are giving them feedback online and sometimes it's very hard to do, rather than in person saying: Gee, what were you thinking? And, so I try to incorporate that kind of language in my critique (in her online comments): what were you thinking, or why did you do this and, you know, how did you go from here to there to make them critically thinking through it, even though there is not that one-on-one contact. I mean it's working, it's just working differently…. Perhaps for me it's that way. I know the students are pretty familiar with not having that physical contact in any of their relationships even with

> faculty and friends. It's all done online. So they may not see it themselves, but I feel that when you are looking at a person in the eye and you are really trying to see... the comprehension..., you don't have that online. So that's my only concern.

Maryanne explained:

> It is a little difficult in a sense because you can't sit down with the student and say here in this paragraph where you have this, you know that was really not what you needed to do, but over here what you did is great .... It makes it a little more difficult to communicate that with the student.

Ms. Pink stated:

> On the electronic health record, I find it difficult to review it with them. If you want to review it or give feedback other than just writing it and actually on the computer it's hard to pull them over to aside if you are there in the clinical area, to actually bring a computer with you there and actually show them what was wrong than when you actually had a handwritten paper. That bothers me because I like to think that they need to know what they did wrong. Sometimes when I grade it on the computer and they see it at home, then you get to clinical and they forget to ask and you don't really get to talk about it.

Not everyone felt a challenge as Rose reflected:

> I mean the fingers, your fingers are doing the talking, the communicating with your students ... I think it's more convenient for students... I think... for example in the electronic chart, if the student wants to ask you a question about something, you can go into the chart (at home) and see where they are at and see, you know

> they need help and you can be there and communicating with the student right there and then and you have a *picture* or you have their chart in front of right there and dialoging with the student at the same time. Because you can see what the student has done or what the student wants to do. I don't have that visual if it was in paper.

Mutton had developed a strategy in interacting by bringing her tablet to clinical:

> I also use a tablet at work when I am with the students at work and if they have a question about their sim I pull that up, I look at the tablet, we look at it, go over it there. So sometimes I don't make a lot of comments because I have already told the students what the comments are, but and I like that I can do that.

Sunibaby's strategy was bringing a computer to clinical to use during post-conference:

> I actually used to walk with my laptop to clinical and when they tell me that they had a problem and I whipped out my laptop, of course, I was in facility that had wifi or sometimes I'd have the hotspot thing, so that helped too. So when I in post conference pulled out my laptop and you know sometimes they gather around and it doesn't mean that they have it up, but they so appreciated me, even though they watched a video or they went through it many different times, just having a faculty there who knows how to use it and shows them how to maneuver it, is helpful.

Not everyone was able to use the strategy of bringing a laptop or tablet to clinical as Snow White explained:

> I try to go over some issues in clinical. I mean I don't bring my computer with me, sometimes another faculty does. We sometimes combine. I print a sheet from

> a previous student that did it and then they have some of it in lecture, just the basics, and then they have a tutorial that they can practice with. I try to encourage that. And then I bring a print out because it's just too cumbersome to bring my laptop. It's big and then the reception there... I always have trouble getting on in the hospital. Sometimes I send them an e-mail and tell them the steps to remind them and then if they have any questions.

Feedback. Feedback refers to the "information that students are given about their performance with the intention of guiding them in acquiring desired attitudes and skills" (Westberg & Jason, 2001, p. 13). This subcategory illuminates the experience of faculty participants giving feedback on a computer. Snow White explained:

> I think I used to do more and I don't do as much with the electronic, cause I used to give them a lot of feedback verbally and I also wrote a lot on the paper, but I would always give it back in clinical and go over it. That's the only drawback that I could see, but... I still try to, like I say it's their responsibility to look at it, the feedback. I give quite extensive feedback usually on their electronic ones, or when I did the paper one, but now I say because we don't really hand them back that they have to look at it electronically, so if you have any questions to let me know. But sometimes maybe they had questions and could forget to ask me or, so that's the only thing that when given back in clinical each week, I would go over it verbally real quick when I handed the paper back if there were any major issues. I mean I can still talk to them but it' not as... like I used to do it all the time. It's not the same when you can't physically give it back and talk about it…. I have to make more of a cognitive effort if there is an issue to address it with the

> student. If they don't ask me a question. I try to, but it's just not like when I handed it in, I used to do it every week. But I mean I had students couple of semesters ago in clinical that I wrote all of the feedback and they weren't even looking at the feedback. So I stress that now, you know every semester I learn from them, that its their responsibility as a student to look at it on their own. We are not printing papers, that's wasting paper, so I'm not going to be able to hand it back to you, but it's your responsibility to check it before clinical and ask if you have any questions. I kind of make a little note to myself if there is a major issue, so I remember to talk about it and I'll have them redo it anyway. But that is kind of the issue I have with it.

Ms. Pink stated:

> The biggest issue really is that we don't get to give the students feedback like if it was on paper. Not that you couldn't, but you're not going to walk around with your laptop. You usually forget, but if it's right there in front of them, they'll ask questions. So, that's the biggest problem, what I didn't like about it, for teaching purposes. I just want to be able to show them what they did wrong and teach them, so I never thought it was good tool for *that*. Otherwise, for learning how to navigate it and do assessment, that's perfect. Good tool. But for the feedback part it just is hard. I think they learn better with the feedback.

WRM had developed a strategy of addressing feedback in clinical:

> What I find is that I write comments for them in there (EHR) when I find that there is lack of connecting the dots or something that was missing or wrong information or something. To me, something they are not understanding. So

> what I do and I did this before. I have done redos, but it's just a little bit frugal because we are going back and forth electronically and I see these people and I don't want to do that. I rather tell them what they need to *learn*, what they are doing wrong, so I make them copy and paste all my comments (from the EHR) and bring them to clinical addressed. That's what I make them do because first of all it's a waste of their *time* to redo it if they don't know what they are doing. It's waste of *my* time to re-read it. So I have them address all my comments and bring it to clinical. And the problem I have is that sometimes there are things that I wouldn't fail a student on, so when they look at their grade, they don't even look at the comments or address them. So this way I make them do that. Then I take them, whenever I have time during clinical throughout the day, I'll pull each one of them to the side and go over their comments, so and teach them, you know this is why this is wrong. And really now I don't see any repeated behavior. So I think that it's a more prudent way of dealing with these. But I think we really need the electronic chart because it really tells us where they are.

Collaboration. Collaboration is "a process through which individuals [sic] can go beyond their own individual expertise and vision by constructively exploring their differences and searching for common solutions" (Shah, 2013, p. 1124). Collaboration involves various agents who may see different aspects of a problem. The subcategory of collaboration further illuminates interacting. Collaboration by faculty participants was expressed as shared learning, which was transpiring between the faculty, students, and even the staff nurses or the health care facility. Maryanne talked about collaborating with students:

> Even students, although they had never done a psyche chart, the students had done simulated EHR in their other semesters, so the students were actually able to tell me, you know we saw this document here on the floor when we were in the clinical and it actually is here if you go under this tab and you go here we can find it in simulated EHR, and do you want us to do that. So even the student kind of helped because I think they want to get as close to the real thing as possible too.

Chester appreciated collaboration between lecture and clinical learning and also having other faculty available to assist:

> Sometimes the hardest thing is just to explain it to the students, like help them navigate it. That was difficult, but once they explained it in the classroom also, it made the transition easier for them and easier for us also. So all the implementation is all about if you get the help and if you get introduced to it. Once you get introduced to it, you are able to navigate the system and like I said I never felt alone. And if I had a question, I could e-mail someone and you get the response you need. So I can't say for me personally that it has been that difficult. Support is the biggest thing. Because you may get stuck. We e-mail. We may not get the answer right away, but we WILL get the answer. And the classroom for the students was good. They see it, they hear it, and after that they get reinforcement.

Judy wished for academia-agency collaboration:

> I think what would be ideal is to be able to, like some hospitals let the students sign on to their system. That to me is ideal. And... actually they are taking more away from us, the hospitals.... Instead of giving us more, they are taking away

> and I don't understand why one facility *can* give student access and others don't. They are inconsistent... the facilities.

Laura cherished having access to the agency's record where she took students for their clinical experience:

> I think it's wonderful that I have access to the computer system there. They gave me access and I think that's such a good benefit. It's wonderful. So they can see actually what information is available there for doctors, nurses, and all the health care workers.

Cooking Italian collaborated with various members of the health-care team:

> Also being in the hospital and talking to the other nurses and seeing how they might put information in or how they would document something, kind of talking with administrators, their IT department, what's the best way to document and then passing that information to the students to show them what makes a particular thing right or wrong? What's the reason why this is right or this is wrong?

Browser discussed collaboration with nurses during clinical experiences:

> You know when I took the students to a clinical setting, I would have them buddy up with a nurse that was working with the patient that they were assigned to and have them go through the whole charting for the day with the nurse as part of their assignment of taking care of their patient, so that they would be able to learn what needed to be documented on the patient.

Starla collaborated with a Utilization Review nurse:

> I try to have a UR nurse come and talk to the students. To tell them the value of the documentation and what are kind of the key things that they are looking for. And what the providers are needing. And why goals are important and why symptoms are important and all those things and what the value of those things are. And then we just talk a lot about that and give report on that, so that they learn why the documentation is important. And we do care plans, all those sort of things. So just talking about professional nursing and why you do certain things and why you do those various assessment, you know, tools. And just all the different things that it (EHR) has in it. And having lots of discussions and feedback about it and I am talking about group discussions not that it is a didactic process, but it's interactive.

Awareness. Awareness involves perceiving thoughts and feelings of others (Asendorpf & Baudonniere, 1993). The subcategory of awareness further illuminates interacting. The faculty participants were keenly aware of the students' experience in learning to use the EHRs. Boomerang talked about what she felt was a challenge:

> They are disengaged, they are stressed, overstressed, they have too much on their plate and in terms of all the academic requirements and all the preparation of getting out and they just don't have the patience anymore (for the EHRs). They burn out basically.

Rose shared: “The only negative I see ... sometimes the tools are complicated and it... the students have to spend a long time, you know, it *consumes* a lot of their hours just to do their electronic charting.” Sunibaby conveyed:

> I never minded to give them extra time and showed them that this is what I need you to do. Even taking 5 or 10 minutes showing them. So that way they can end up liking the electronic health record.

Starla stated:

> One thing I’ll say is the students have trouble with is the particular type of documentation system we have. They loose it, or they don’t save it or they don’t do it correctly all the time, even though they are somewhat proficient at it. I’ll get “I forgot to save it”, “I forgot to put this part in, I can’t go in now.” So even our students that are really good and they still do that kind of a thing. Which is sort of a shame.

Snow White:

> Cause I think, I just want them to feel comfortable. I know I would feel nervous as a student, especially with the technology part, so if I can ease that transition, I try to as best as I can. I say that if I don’t know, I’ll find out and play with it myself and look. Cause I know more from the teaching aspect of it, how to grade it and stuff. And sometimes it’s going to their side and have a look.

Evolving

Evolving is a dynamic process in the experience of change and involves the act of growing and developing, both personally and professionally (Matthew-Maich et al., 2007). The category of evolving emerged from the faculty participants’ experiences and

feelings of transitioning from teaching paper-based documentation to implementing EHRs in nursing academia, as they reflected on the past, present, and future of implementing EHRs in their teaching. The implementation of EHRs in nursing academia was viewed by the faculty participants as a change, something new, and moving away from the comfort of knowing the paper. The implementation of EHRs in academia was not being expressed as something that was stagnant, but rather as a phenomenon in which the faculty themselves, students, and the expectations were continually evolving. Although most faculty had evolved from initial feelings of fear and anxiety to presently looking back at the implementation as a relatively easy transition, some continued to long for the comfort of paper. The dimensions of evolving, as expressed by the faculty participants, ranged from unceasing uncertainty to full acceptance. Participant quotes illuminate the category of evolving and the subcategories of navigating, collegiality, time and system barriers, and critical thinking. In some instances, the participant's voice was emphasized using italics.

Snow White reflected:

> Even though it's not perfect teaching the electronic documentation, I learn every day about it and implement the changes, and you have to be open to changes. So it's positive cause it prepares them (students) for their future. Just for me it was hard first. With anything new it just takes time. But I was open to it and I didn't shy away from it. I pushed myself to it and I knew that if I just gave it time, I would do it.

Mutton shared:

> It's just a different way, you know instead of having it in paper, you know the format that I was comfortable with; I went through the discomfort of a new way of doing it…. The implementation was just hard, you know, because it was new. Everyone resists because it's new, right, and even if you are using electronic health record at work, you don't associate it with what you are teaching because you are used to teaching, you know, in paper. So I think it was just the paper transition that was hard or the hardest part, and now it's just the way it is and it's better.

Ms. Pink stated:

> Anything new is dreadful, but it was the way we were going. But I was OK with it, really. It's just about learning it as a new thing for teaching. I wanted to learn it, since that's what's out there and that's how it needs to be taught. I mean I did fine. I caught on.

Laura commented on how her expectations evolved:

> At the beginning the students did a lot. Even on the second week they would have so much. And I said, so they really know all this or are they just putting all that in there? So I saw so much work and said that's not a good way. Some of the students of course that were more advanced and smart about computers or even worked as LPNs with systems, they understood maybe, but the others didn't. So I made kind of this decision that it was too much to manage for them. They can't possible understand all of this and swallow all that information. So let's take it steps at a time. We also got these guidelines and we follow them week-to-week

> and build it up. So too much too soon is not good. That's my belief. Give them time to learn it. It's all new to them. Just give them time. One step at a time.

Starla commented on both students evolving and faculty:

> One of the really good things is to try to get them to buy-in early. I think that would be good. And I think that it is probably happening more and more, would be my guess. Because what I see this semester. It's been an easier process for them that it has been in the past. So I think the simulated EHR is, it's getting better and better here at our college. So that's part of it. And perhaps I would like to think that our faculty are getting proficient at it. And holding everyone accountable for doing it and the students accountable too…. I really feel like it's still an evolving tool. I don't think it is at all at the end game.

Rose reflected on evolving:

> It takes a little bit of time and it's a working progress thing because the... you know I think it will be fine tuned as time goes by and sometime it will be improved. So I'm looking you know, ahead. There was a time when all you could do was write, you know with some feather tipped pen and then you had ball point pen and then you went on to the typewriter and now we are doing EHR and it's incredible. I love changes. It's all for the good and that everyone benefit, the students and faculty.

Navigating. Navigating is a process of moving through something, such as moving through change (DuFrene & Lehman, 2014). Navigating involves an individual finding his or her way. The subcategory of navigating provides further detail in the category of evolving. In transitioning to using EHRs in academia, one of the main

strategies that all participants talked about was practicing and navigating the EHR to familiarize themselves with it and assist students. Practicing with the system and learning to navigate it was a uniform key strategy. Boomerang stated:

> I just became familiar with it, the system. And that didn't take too long, so just the strategy of being prepared, I guess, so that when I dealt with the students I would know what it's all about and I would navigate the whole thing, so that I would know where everything is.

Mrs. Blue explained:

> Just personally playing around with the program helped, you know. Cause unless you're actually playing around with it and physically doing it, somebody could tell you over and over again how to do it, but unless you are actually doing it *yourself*, it doesn't really click. So I think that was probably the *biggest* thing, just going into the program and *actually* using it.

WTM commented:

> I think I took the owners to it. I mean, I think I took the *time* to look at it. And then also going to the electronic record. I mean I went there and opened every single box to find out what I wanted and what I didn't want.

Chester commented:

> The hardest thing is to help them (students) to navigate and figure out the system. The system is friendly, but you have to ... it takes time. Because you can't just go in there and start clicking stuff, you *have* to take time to find out where do things go, if I put this here, what does this drop box mean. Some of them have no idea. If it is a short-term goal, if the goal was met, what is the red dot, what is the green

> dot. They are just clicking boxes. And they have no idea. And when you ask them, they say: well the box was there. So they have no idea. Teaching them to navigate, that's the most hardest thing, to help them. And *you* have to know how to navigate before you teach them. So sometimes you have to go there and play, like you go in as a student and play around, so you can figure out.

Mutton shared:

> I just had to practice over and over again and get familiar and then ask the students to what they were seeing, so some of the students would show me. They would bring their tablet or lap top and we'd pull it up and look at what the student could actually see, so that I could understand what they saw as supposed to what I saw and what I was expecting them to do. Because my expectations were based on paper at that point. So my intervention to myself was to look at what the students had, show them the paper, what good charting was on paper and then move to putting in simulated EHR and divesting myself off of the paper too. So I had to, you know, get rid of the paper. I think the students had already gotten rid of the paper. I think they are ahead of us in a lot of ways.

Collegiality. Collegiality or peer support "is the provision of emotional, appraisal, and informational assistance by a created social network member who possesses experiential knowledge of a specific behavior" (Dennis, 2003, p. 329). The subcategory of collegiality further explains evolving. In the transition, having peer support was something that was viewed by participants as essential in helping to implement EHRs in their teaching.

Maryanne stated:

> Definitely, what helped were other professors who had worked with the simulated EHR before. I know because it was my first year implementing with the students. So, I would say definitely individuals that had experience with it helped me…. So speaking with faculty who had worked with the program before was a big help. I mean it was the most important thing that I was able to get. Otherwise, I would have been very ill prepared for it and I would have handed all the papers (figuratively speaking) back and not really fully be able to explain what was wrong and why it was not what we needed. So, definitely having that help beforehand was helpful not only with what to do with the program itself and where to go, but helpful as to so I could better communicate to the students what was expected of them for the assignment.

Sunibaby explained:

> I think in order for the faculty to be role-models (for students) they need the support also, so maybe like a point person or an individual who is a point person, whose always there with clinical experience who knows the ins and outs of doing it. And I think like someone who is familiar, like myself, in the clinical practice and then moving to the academia and then implementing it there. That's an advantage. So, you really want to have a point person who knows what's going on in the clinical practice.

Chester commented:

> I mean first it wasn't so easy, but every semester that you do it, you get better at it and then you get more explanation. And then you have guidance, like we were

> sent directions on how to do the steps or the videos too. So, it's not like you were left alone. You always had somebody to go to. Your peers too. So, it wasn't so difficult cause you always had someone you could ask. If you would have to fend for yourself, then I would assume it would be difficult. Cause when you were stuck you could call someone or someone would guide you through it.

Snow White shared:

> If I had any questions, I'd ask my peers, my colleagues. If I ran into any glitches…. I would learn some little thing and then pass it on, so if another faculty or student was struggling, I could help them with it. So, definitely helping each other too. Because it saves a lot of time.

Critical thinking. Critical thinking refers to "identifying, evaluating, and using evidence to guide decision making by means of logic and reasoning" (NLN, 2010, p. 67). Consequences of critical thinking are safe practice, enhanced decision making, and problem solving (Turner, 2005). The subcategory of critical thinking further explains evolving. In transitioning to the EHR in academia, the biggest challenge that all faculty participants shared, was how to facilitate critical thinking in students using the EHR. The faculty participants were concerned about students just "clicking boxes," having prompts and not thinking about what truly applies to their patient. As Cooking Italian explained:

> The only thing that I would say does concern me is that sometimes I feel like people don't tend to use that critical thinking because they are just clicking on choices that are available for them and picking what they think might apply to their patient and don't take the time to really go back to the old way of thinking of writing things out. The critical thinking, you know they can sometimes lose those

> skills a little bit because they are trying to rush through it because they click on what they think applies to the patient to get it over with, so they have the documentation there. So, that does kind of hinder it in a way and I see that with the students as they are formulating care plans that I think they are just clicking. They have dropdown menus, and they'll just click on it and tend not to think about what else that they can put in there that would apply to their patient.

Browser stated:

> Well, I think having come from the paper charting you know all these years, I think that it (EHR) is good, but that there are some negatives about it because it has a lot of check off boxes and it doesn't lend itself for the students to thinking much really about the patient whereas with paper charting you are able to really think and write a little bit more, but here you are following the check off boxes, 'ok that applies' but it doesn't give you an opportunity to really express anything in more detail about... yes, I know you have parts where you can write, but I think me having to have used both with the students, I think that the negative I find is that expressing yourself is not as detailed as it would be if I had it in paper.

Judy commented:

> Sometimes hindering students' learning is that everything is there. They just need to check the correct box, which makes you wonder sometimes how much they are learning at that point, but then again you have many students that don't do it correct, so maybe those students that *do* do it, really are learning to look for what has to be charted.

Mutton shared:

> So many of the dropdown windows boxes that they have just lead them down the wrong path because they say “uh there is a drop down window so lets just use that” and then I’ve realized that even a student that, I’ve only had one that was very marginal at understanding, that the student was able to go down and pick most of the correct boxes but without any of the understanding... so I can just click click click. But it’s the same thing in the real electronic health record. I hear nurses say ‘well if I just click click all the way down then I’m done. I got through my seventy pages, what ever, I’m finished’.

Chester stated:

> Like sometimes they’ll come up with a box that I’m like where did you find this based on the diagnosis? Where did you pick this from? And they are like, “but it was on there.” And I’m like yes, but at least you could narrow it down to the patient. And I think with all the drop down things, they are just looking. They are not sure. “Oh this is close enough.” But it doesn’t work like that. So just getting them out of that mindset and to start looking. I guess as they continue in the program, they’ll get it better cause like in the beginning it’s difficult for them to see. As they progress maybe the critical thinking comes more and they are able to see that. Like sometimes when you get the charts back, you wonder if they get it, if they consumed it, so you just try to work with that. Because it’s a working progress. It takes time.

Time/System Barriers. Time and system barriers refer to the difficulties in implementing technology such as the complexities of the systems and the comparative

change that occurs in the notion of time (Boonstra, Versluis, & Vos, 2014). The subcategory of time/system barriers further illuminates evolving. A barrier that was expressed by the faculty in transitioning to the EHR from paper was that it takes a lot of time to grade the students documentation and that being forced to being in front of the computer contributed to the challenge. Many also expressed some system issues, such as difficulty saving their comments. Chester stated:

> The only thing that hindered me was the trying to make the time to go onto the computer. Like the paper you could always carry to wherever you are and just grade. But it helped because by doing the paper, it's almost the same thing on the computer. It was not a hard transition because I was already used to the care plan, the medication, the labs, the diagnosis. It wasn't hard. It was the time to go onto a computer. Sit in front of the computer…. With paper you could be at the doctors and read it as you're waiting or anywhere. And then even if you bring your tablet and there is no WiFi connection, you may not be able to get there. So that makes it harder. To have to designate a certain time to go on the computer and just focus. If it's going to take you 3 or 4 hours, you have to sit there for hours. So that's a downfall.

WTM explained both about time and system barriers:

> I try to do three or four charts a day, which is a lot. And you get worn out by the time you finish work, go home and then start grading their (students') charts. And to tell you the truth, I find that it takes me longer to correct them earlier on in the rotation. I do see growth in them and learning in them. Because they don't take so long to grade later. Basically the pain for me is to scroll down all the way to

> the comments box to write a comment. You know if I am reading the assessment, I have to go to the bottom to write a comment. I don't write my comments right on the documentation because I don't want them to have to print the whole thing out. I just want them to copy my comments in the boxes. I don't think it's fair for them to have to print the whole thing out. And if that's where I put my comments then that's what they have to do. So I intentionally don't do that. It takes probably an hour per student to grade probably, I would say about an hour. But that's because I really finesse what they have to get. And originally probably they had everything in there too. Now I know what I want in there.

Starla stated:

> The faculty could be grading papers and doing stuff anywhere. You know, when they are in the park with their kids or at the Y or whatever. And they could be grading papers and we can't grade the simulated EHRs and we can't do some of those things everywhere. So, that makes it a little bit more of a burden to be able to do that stuff when it requires something that is even operated on a battery. You know, needs a cord. I think that makes it a little bit more frustrating and aggravating as far as the workload. It's not so much the time that's involved, but even though we all love our technology, we don't always want to use it to do everything. We have to sign on and then sign back off. You know to have that tool with us. So that's sort of a drag.

Maryann shared:

> Maybe it's a little tougher on the teacher. If you are at home grading these papers, now you are logging in to grade these papers. I mean for obvious reasons

> I'd like it if it only took me 5 minutes than 20 minutes, but that's not always what's best for the student. And I mean part of it too is that it was my first year working with it. Cause certainly, I had students in the first half and the second half and in the second half I was able to go through a little quicker and I knew what I needed to zero in and focus on. So, part of that may have been my inexperience with the program as well. But yes overall it does take you more time to grade. You know the process of logging in and finding it, is definitely more lengthy than they just handing you a paper and you looking through it.

Mrs. Blue commented:

> I think that my main complaint is that it's just, the inefficiency. Just getting used to something new, it's new to have to grade something on a computer and have to look at it. And then it's just system problems like you could type on red on the thing like right where they documented, but... half of the time it wouldn't save for me and I would just have to write it in the end and so it was more of the actual system than the fact that it was online. I think it's more of just working the kinks in the system and that it's relatively new.

Mutton stated: "When sometimes I would try to grade a paper it would disappear to what I now call the simland. It just disappeared and I couldn't retrieve it for the students. So, I felt that that was unfair."

Confirmation of the Categories by the Focus Group

Six nurse faculty agreed to participate in the theoretical focus group in phase two of data collection. The participants were selected based on meeting the inclusion criteria of being full-time or adjunct nurse faculty in an associate or baccalaureate degree nursing

school, currently teaching or having taught nursing documentation using an electronic health record as part of a clinical course within the last year, experienced the transition to teaching nursing documentation using an electronic health record as part of a clinical course within the last 5 years, and having at least 2 years of experience teaching nursing documentation with an electronic health record. Prior to beginning the focus group interview, the purpose of the study was described in detail, and a rationale for the focus group was explained. All participants volunteered to participate and signed consent to participate. The participants were then reminded that the confidentiality could not be guaranteed due to the nature of the group process. Each of the participants chose a pseudonym and completed a demographic questionnaire (Appendix G). The interview was audiotaped and transcribed by the researcher.

The focus group participants were respectful of each other's thoughts, allowing each participant to finish their thoughts during the 57-minute interview. Only in one occasion, one participant started conversing prior to another participant finishing her thoughts. Participants were attentive during the focus group interview process, and all participants offered valuable insight into the emerged categories.

Valuing

All six focus group participants agreed that implementing EHRs in academia was benefiting the students and helped them to be prepared to their future nursing practice. Scootie stated:

> The reason we went to the electronic health records here was that we were getting feedback from the hospitals that the students are very well prepared with

> everything; however, they struggle with the conversion of documentation onto the computer. So, in that sense, now they are ready for practice.

Todd commented:

> It's getting that experience. So, at least when they get there to the practice as a nurse, then at least they have done it little bit, so it's not brand new and they have some *experience*.

Charlotte confirmed:

> I have been observing the preceptorship in ... and the students that are coming through, they just happen to be on the same floor that I am with my students and they are documenting, and I haven't heard any complaints. Nothing from their preceptor. They seem comfortable with the electronic documentation. So, we must be doing something right.

Laney added: "Once they have that opportunity to see how they use it in practice and how much it does apply. They are going to be, that's when it all comes together."

Donald Duck reflected:

> I taught preceptorship for a while and I found that the nurses would take the students under their wing and show them the charting at the facility. And the feedback from them, the students who graduated, was that they actually understood why we are doing electronic documenting while in school cause they can see how much of it and how relevant it is in practice and after like maybe by the third shift ... they actually were able to, the nurse would let them to document and it would actually help them reinforce learning and you have another set of eyes. So, the actual outcome of it, it *does* serve its purpose and it is *relevant*.

Interacting

Much like the phase one participants, the focus group participants expressed the importance of feedback to student learning and the challenge of not being able to sit down with the student to reflect on their documenting, as they were used to when grading paper assignments. Todd shared that in the beginning of the implementation of EHRs she graded the students' electronic documentation with her iPad® during clinical with her students but later ran into a challenge:

> It wasn't until one of the faculty said that your student's chart wasn't graded. And I'm like what are you talking about, I'm grading it. And I'm sitting down with the student (during clinical), which was a very good learning experience with the student because I was literally going over it with them *in person*, one-to-one. And then they said, no on the iPad, it doesn't go through, so then I had to revert *back* and go back to grading it at home on my computer and of course I wasn't going to grade it at home on my computer and *then* sit down with them in clinical and then do it *twice*. So, then I find that it's not as good learning experience cause when it was on paper, I would grade it with them in person and then it was one-to-one experience.

Scootie agreed:

> You are right (looking at Todd), you can grade it (paper) right there, you can, even if you take it home and look at it after the clinical setting, you can sit down with your student if they have a lot wrong…. And how much can you really say in that little box. Like I said, I don't know that it's a good *teaching* tool, I think it's an excellent skill, skill, just something you do to become familiar.

Donald Duck stated:

> I find that in real life that if you really want them to practice documentation on real time it needs to perhaps be on paper first cause then you can give the feedback in real time and then you can also get that experience on electronic documentation as well…. Also, if you are trying to see them connect the dots between the care plan and the assessments on paper, you know, you can do arrows, you can highlight, you can actually show and see the progression and see the missing links where as on the electronic documentation, you make the comments and they are separated, there is no way to draw on the computer and *show* them, you know you documented here, why didn't you put it as data and it's kind of as an instructor going back just for the feedback part, it's really just kind of hard, and you have a lot of students and you have to sort of condense what you are giving back as feedback and then you make notes and then address it as a whole (in clinical) whether is applies or not, so that students down the road don't make the same mistake again. But then if the student didn't make that mistake this time, it's not going to apply to them in that teaching moment.

Evolving

Through the focus group, it was evident that in transitioning from paper to implementing the EHRs in academia, the faculty had not inevitably fully adjusted to implementing EHRs and expressed continued longing for the comfort of paper, instead of letting go. Surprisingly, although they had all began implementing the EHR 4 years ago, they were clearly still evolving in re-conceptualizing their teaching as Charlotte reflected:

"Now how do we get the comfort and the accuracy of information ... onto the electronic health record that we have on paper?" Charlotte further conferred:

> I wonder if we had a nurse from practice right now that was sitting with us, for the past year, year and a half, that has been using an electronic health record, how their opinion would be as compared to ours? You know, I'm ingrained in paper and it was a very hard switch, but we *have* to keep up with the technology and so I have tried to adapt to, but it's still, I still don't feel I'm getting from the students and they are not *learning* nursing process as well…. Working with first semester students... we were just paper for a long time and then started with the electronic health record and I still find that using the paper, the students, I feel they are putting more, more information about the client, that it's more in depth. When they are using the electronic health record, they are using the dropdown boxes and putting things that are not applicable to their clients, more things that are not applicable.

Scootie stated:

> I find that, I don't think the students are learning as well. I will be perfectly honest with you. Because what I discover is that they do an awful lot of cutting and pasting and even when they are at the keyboard, I don't think that it gets them embedded into their brain as much as when they were doing paper charting. I just think that there is a very strong kinesthetic link to learning that does not exist at the keyboard…. I mean there has been a learning curve from my part as to how and what I can do…. If I had a choice I would go back to pen and paper. I mean

> do the electronic one couple of times a semester…. I'm not convinced that they have to do it every week or every semester to get to that point.

Donald Duck replied:

> The only thing is that once you have it (simulated EHR), you have to use it. Because otherwise students feel like why am I paying for it and why am I not using it? So, that's the only other thing. If you are going to ask students to buy something, you have to use it enough. Cause I was in another place where we didn't use it enough and then it wasn't consistently used, so I think it is a good thing when each semester uses it. It makes it feel worthwhile.

Much like the participants in the phase one of data collection, the focus group participants particularly expressed their concern regarding critical thinking in transitioning to the EHRs. Donald Duck reflected:

> My feelings on electronic documentation is that, although, the good thing is that we have to keep up the technology and the times and we have to reflect what they are doing in practice because it also shows up on NCLEX, you know, there is a certain portion of technology and... information and all that, but with that being said, it's really hard to evaluate student's critical thinking and the ability to understand their patient and document pertinent information on the simulated EHR because sometimes when you're reading it, it looks as if they just click click click and they are not putting it all together whether it's assessment data or care plan data…. Cause they are just check, check, checking and it's like wait a minute you had an amputee, how can you have positive pedal pulse.

Scootie agreed: “I completely agree that the dropdown boxes kind of take the thinking out of the process and it almost makes it like a multiple choice question: OK, well one of these has to be correct. Laney joined: “It doesn’t necessarily promote the critical thinking as opposed to just teaching them the skill.” Laney added: “It’s assessing whether or not they can think past clicking a prompt and you know be able to demonstrate being able to connect and that critical thinking piece.”

On the other spectrum, some also felt that there were advantages too, as Donald Duck explained:

> But on that end, they get exposed to other assessments and they ask questions and that can be an advantage. It promotes asking what is this chart or that chart, you know, the special charts or certain assessments. And then you explain that you would do that in such and such situation so it could be another learning opportunity.

Scootie agreed:

> The good thing about electronic health records is that it has these other assessments such as the Braden scale you know other types of assessments that when we had the paper documentation those were not included.

Based on the focus group interview, confirmation of the meaning of the three main categories was achieved. The valuable insight gained through the focus group in the phase two of the data collection lead to revisiting the conceptual names of the emerged categories. Following the focus group, the researcher engaged in intensive memoing of phase two data, as well as, revisiting it from phase one. The researcher also went through all of the data multiple times, known as code-recode consistency. Through

this process, it was determined that the theoretical content of the categories remained saturated and was confirmed by the focus group. However, in order to better reflect variation and the categories location on a range, the main categories were renamed based on the theoretical sensitivity gained through the focus group participants. As a result, embracing was re-coded as valuing, relationality as interacting, and letting go as evolving.

Through the focus group, it was evident that coding the category as "letting go" did not fully explain the variation within the category. Evolving arose as better able to reflect the true variation and the range within the category. Through the focus group, it became clearer that the category devoured a full range from having fully divested of the old, being in a process of adjusting to the new, and even still longing for the comfort of the paper as the faculty transitioned to implementing EHRs in nursing academia. Similarly, with the category of "embracing," it was clearer through the focus group that faculty were not necessarily fully satisfied or accepting of the EHRs in their teaching as is understood with embracing. Again, enhanced communication of variation and range were needed. Re-coding the category as valuing was better able to communicate the perception of the participants seeing implementing EHRs as important and beneficial without the notion of complete satisfaction or acceptance, but rather a range. The category of "relationality" was recoded as a gerund word interacting, in order to better reflect action as communicated by the participants.

In conclusion, the categories, subcategories, and the core category were confirmed by going through the data multiple times and through presenting them to the focus group for their reactions. The following section discusses the basic social process

of professionalization, which explains the process of faculty implementing electronic health records in nursing academia.

The Basic Social Process: Professionalization

The core category that emerged from the participants' experiences of implementing EHRs in nursing academia was professionalization, and it was the main theme of the study. The core category of professionalization represents "what this research is all about" (Strauss & Corbin, 1998). Commensurate with Strauss and Corbin (1998) conditions for a core category, professionalization was central and other concepts related to it; it occurred often in the data; it was not forced; its name or phrase was abstract enough; and it was able to explain variation. Professionalization was theorized to be the core category that was able to explain the social process that influenced faculty participants' attitudes and behaviors as they implemented EHRs in nursing academia.

Faison (2003) defined professionalization as the "acquisition of the requisite knowledge, skills, values, and attitudes, which are characteristic of the profession" (p. 83). Professionalization, also referred to as the professional socialization, is the process of "socializing the members into forming a professional identity" (Yam, 2004, p. 979). "Nursing practice involves a rich, socially embedded know-how" (Meum & Ellingsen, 2011, p. 481). The social process of professionalization is considered an essential outcome of nursing education (Faison, 2003). Students learn professional identity through their interactions with nurse faculty who are seen as the main socializers (Wade, 1999). "Professional socialization is a dynamic, interactive process through which attitudes, knowledge, skills, values, norms, and behaviors of the nursing profession are internalized and a professional identity is developed" (Dinmohammadi, Peyrovi, &

Mehrdad, 2013, p. 32). The following participant comments illuminate professionalization.

WTM stated:

> I think the electronic chart is important for many reasons. For the professional stuff that we are seeing. So even though if it's not all clinical information we are teaching. We are teaching ethics, we are teaching how to document something abnormal, you know.... So I think it is multifaceted what we are teaching them. And I think about the quality. I think we really need to decide what we want them to know when they get out of this program. And more is not better.... We should ask what are we really trying to accomplish here. And it's not that I want to sit home and grade these, but I do find a multitude of information about my students. Where they are scattered, where they are not connecting... whether they are ethical or not or are they professional or not.

Rose explained:

> It's not only documentation, but it (EHR) teaches them... it's taught to make them professionals. You know. And that... and that your word, we take you for your word. You know what I am saying. And another thing is that, they will do their assignment and I have talked to them about, whatever you write, once you submit it, it's like written in stone, so before you submit anything, you need to review it, to see that is what you want... to write or that is what you want to put forward.... so what I'm saying is that what ever you have written is going to stand on its own. And it represents you. OK. So as a result you have to review the stuff that you've written before you submit it. Because these things are going to follow

> you. As a nurse, you write to the computer and you cannot erase, you have to write the correct things, whatever it is.... So ... it ... helps the students a lot. A lot about discipline and ethics. So, there is an ethical component, when you think about it and the grand scheme to... EHR.... What I'm saying is that what you are writing in the computer, represents you.... I don't talk about things like going to court and stuff like that, but... you are what you write and that is teaching them also to be safe.

Cooking Italian shared:

> Ultimately I feel, personally, I feel positive about it because I have gotten used to it (EHR) and I am happy about the feedback that I am providing to them. Listening to the students to where I made comments to them and it makes sense to them and it clicks with them and they can see what they could have done differently. And I feel good about it because I feel that we are preparing them to be out there to work, to be good nurses, to make a difference. So, I do feel that even if this might be a small component... compared to like care of your patient, I still think that it's part of being a good nurse to effectively document and I think I feel positive about contributing to that portion of it.... So, as a student I think and even as a novice nurse, that will help them making sure that patient receives effective care, which to me is that the patient receives the care that is appropriate for them and helps them to go back to a level of functioning that is acceptable to them, to get them to that point to where they foresee that they want to be. To me effective care is that they are safe and they received the care that is appropriate to get them back to a level of functioning that is acceptable for that particular

patient. So, I see that as the ultimate outcome. Improved outcomes for the patient.

Accountability, patient centeredness, and excellence further illuminated the core category of professionalization. Participants viewed teaching electronic documentation as more than just simply teaching students how to navigate it. It was evident that their aim ultimately was to teach students not only how to document, but how it related to accountability of "being a good nurse." The faculty clearly expected not only excellence, but also that electronic documentation was patient specific. They saw that EHRs teach about ethics, about being a good nurse, about honesty, and ultimately that good electronic documentation ought to lead to safety and better patient outcomes. The following participant comments further illuminate accountability, patient centeredness, and excellence.

Accountability

Accountability is defined as "taking responsibility for one's nursing judgments, actions, and omissions as they relate to life-long learning, maintaining competency, and upholding both quality patient care outcomes and standards of the profession while being answerable to those who are influenced by one's nursing practice" (Krautscheid, 2014). Reflected in the faculty's thoughts were that the students needed to understand the integrity of being a nurse and faculty wanted to see it reflected through their documentation.

Cooking Italian explained:

How detrimental it could be to leave something off or to inappropriately document something and then of course nurses changing rapidly, shifts changing

> then how things can slip through the cracks if it's not appropriately documented, so that the next nurse that comes to care for the patient, sees what needs to be done and it can be followed across the board, so I think that's the difficult part of it and that's the ups and downs of it but I think ultimately it's a good experience for students because right now they have the ability to do it in a safe environment where they can see how detrimental it can be if you don't do it appropriately, so.

Laura stated:

> You know just to make sure they do the right thing and I don't, you know the information, I tell them, that doesn't belong there, do *not*. If you don't have the information, don't put it on. Don't make believe that. So just monitoring that is a big thing. And I think they are very honest now. You know I get them on that path.... So it's not stories. These are real clients and I want them to be honest. Because when you become an RN, you got to be truthful. So that's what I see. So in other words, from the beginning I tell them to be honest, if you don't remember the diagnosis or something, e-mail me and I will tell you. So just don't invent information in that EHR. Because that it's not going to take you anywhere. Sooner or later I will find out or the next semester will. So learn the basics and no stories.

Laney reflected:

> It's hard to have that authentic presence with the patient when you are so tied to the electronic health record and responsible for all the documenting because you are held accountable and everything is timed and nothing can be erased or changed or edited. So the initial of what you did is still there. So I think it's

> almost a big distraction and it has taken away from the bedside presence of the nurse. Another view is that it's a good thing that everything is being documented now the way it is because maybe not so good nurses can't get away with it now. So six of one or half dozen of the other.

Patient-Centeredness

Patient-centeredness involves "orientation to care that incorporates and reflects the uniqueness of an individual" (NLN, 2010, p, 68). In implementing EHRs, the faculty frequently referred to their objective to assure that students documentation in the EHR, reflected the individual patient. Laura exclaimed: "This is not just getting to know the system (EHR), it's getting to know the *client*. So the *client* will be in the system. Just like it will be when you go out to work." Laney stated: "I think that the electronic chart itself is not patient-centered per se, but you try to get them (students) to do it, so it reflects the patient at the center of care." Starla stated:

> They (students) see it (EHR) as busy work and that's a shame. That's a shame. Because when they carry it over to the nursing care plans and they don't individualize it, I see how removed they are from that patient. They could be writing about anybody. So, it's frustrating that they... it's frustrating that the students are not invested in it. Cause it shows me that they are not invested in the *patient.*

Charlotte explained:

> And each of the comments that they (students) put in, I want them to be thoughtful. I want it to be relating to the patient. I mean great that they did something, but I want that something to be meaningful. I want them to learn

> something from each simulated EHR. That's why you have to read everything that's in it and somehow comment on everything.

Excellence

Excellence refers to "an aspiration toward which we must continually strive" (NLN, 2010, p. 12). In the participant reflections, it was evident that they expected excellence. Starla stated:

> Well I'm more and more about the actual products, the charts that they are submitting. I have fewer and fewer that have to be redone, for one. The level of excellence is definitely higher; the bar is getting higher all the time and so fewer have to be resubmitted.

Judy shared:

> I have actually told them that I don't need to know about your patient per se. I should be able to look at your electronic health record and have a full picture of what type of patient she was, what happened today, what your plan of care was. I don't want generic care plans, I want specific to what you were doing for your patient that day and... a lot of students are achieving that. I can look at the record and it's all there and it is amazing. And that is the way it needs to be. So when you are out and you are a nurse and you are charting and your record has to go to the court for any reason, everything is there that you do.

The faculty not only expected excellence from the students, but of themselves as Laura shared:

> I mean sometimes it's a little frustrating, like where to fit it all in. But then when I go there (students' EHR), I want to give my students the best. Nothing goes half

way, it's got to be 100%. I don't feel good otherwise. When I finish (grading EHR), I hope that I did a good job and gave them something.

Restatement of Research Questions

As the researcher proceeded through the open, axial, and selective coding as described by Strauss and Corbin (1998, 2008), the core category of professionalization emerged and answered the three research questions that guided this study:

1. What are the critical factors that influence faculty attitudes and behaviors about implementation of electronic health records in nursing academia?
2. What are the strategies used by nursing faculty in the process of implementing electronic health records in nursing academia?
3. What challenges do nursing faculty encounter in the process of implementing electronic health records in nursing academia?

Formulation of a Theory

The process of professionalization was discovered through the three main categories of valuing, interacting, and evolving. Professionalization influenced nurse faculty's attitudes and behaviors about implementation of electronic health records in nursing academia. As the faculty interacted within the social context of nursing academia, they were keenly aware of professionalization as their reality of teaching nursing documentation shifted through the process of implementing electronic health records in the academia. In the process of faculty transitioning to teaching nursing documentation using the electronic health record, the common voice of the participants was that of professionalization: "it's taught to make them professionals;" "so when you go out there and be a nurse, you have to be the person who takes full responsibility and so

whatever has to be done, you're going to get it done and you are going to do it correctly;" "so that when they are real nurses, they have the skills. That's the real purpose here;" "I think with the electronic documentation, it's bringing us nurses to a higher level;" "improved outcomes for the patient;" "so we have a huge responsibility. I take it as an important learning tool and important learning for the students, therefore it's not to be taken lightly;" "as a nurse to be successful that's the thing you have to do;" "because they feel like that defines a professional nurse;" "I think the electronic chart is important for many reasons. For the professional stuff that we are seeing". Figure 2 illustrates the social process of professionalization.

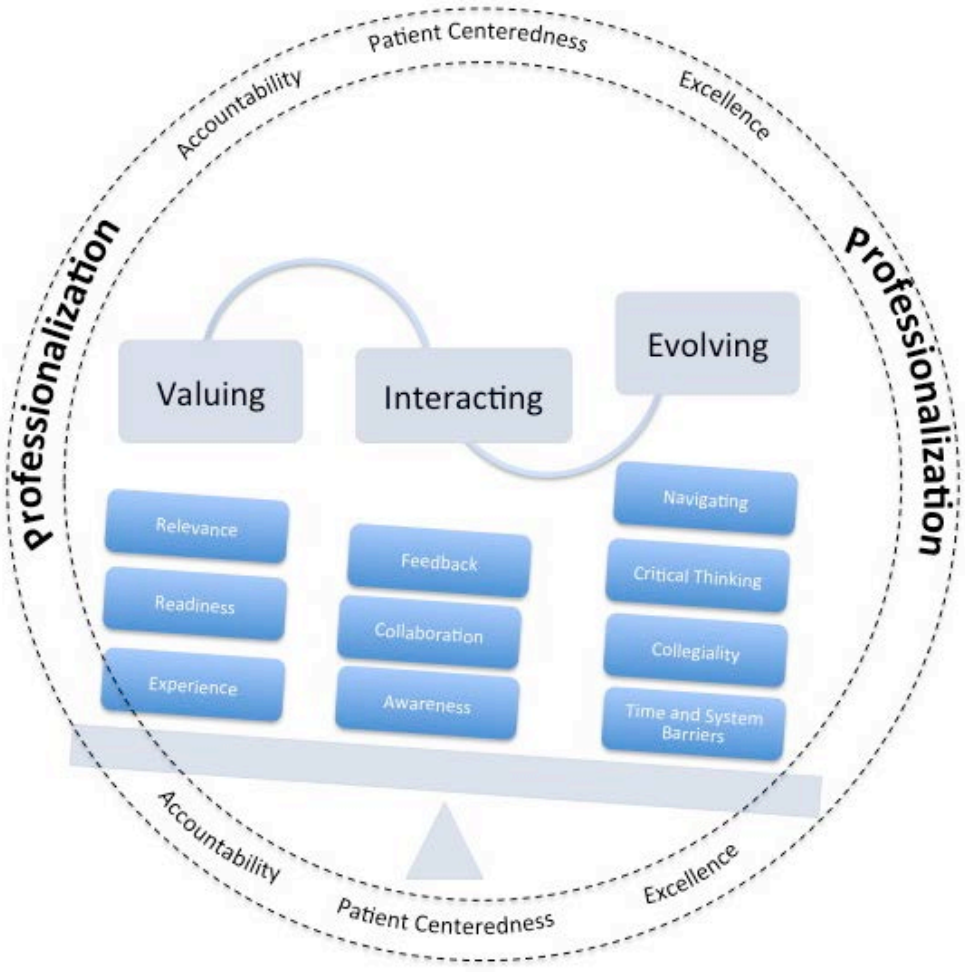

Figure 2. Conceptual model of professionalization (Wallace, 2015).

Figure 2 explains the social process of professionalization and the relationships of the three main categories of valuing, interacting, and evolving, as well as their subcategories. Professionalization within the two circles around the main categories portrays that professionalization was the overarching expression and responsibility of faculty as they were implementing EHRs in nursing academia. The circle communicates that professionalization is not a linear but rather is a continual process. The dotted line of the circles further signifies the dynamic and fluid nature of the process. Accountability, patient centeredness, and excellence that share the space with professionalization further illuminate the process of professionalization as the faculty determinedly assist students in internalizing and developing their professional identity whilst implementing electronic health records.

The three main categories of valuing, interacting, and evolving with their subcategories are on the balancing board to signify the act of balancing as faculty are implementing EHRs in nursing academia. Although, all faculty shared the outlook of valuing the implementation of the EHRs in nursing academia, evolving shifted the balance and weighted heavy on the faculty, particularly as they faced challenges such as time and system barriers or assuring development of students' critical thinking. Interacting is in the middle to denote that the role of the actors was central in the faculty's experience of implementing EHRs in nursing academia. The nature of the interaction within faculty, students, and the environment was being reformed with the implementation of the EHR.

The flexible line traveling through the three main categories connects them to each other and communicates their relationship. Much like the line, faculty would flow

through valuing, interacting, and evolving as they were transitioning to EHRs in academia. Valuing, the impression that implementing EHRs in academia was important and beneficial, flows through the challenges that were met and the strategies that were developed as faculty were interacting and evolving in the process of implementing EHRs in their teaching. Supported by the presence of valuing, the faculty were prepared to evolve and interact in the implementation process and pushed to develop strategies to overcome challenges. Hence, the categories were inter-related in the sense that interacting involves valuing and valuing supports evolving and interacting, just like evolving promotes interacting and implicates valuing. Finally, professionalization heightens the three categories and in valuing, interacting, and evolving, the overall aim was for professionalization.

Chapter Summary

This chapter presented the results of the data collection and analysis. The data collection occurred in two phases. Phase one included individual interviews of 15 nurse faculty participants and phase two included a focus group of six nurse faculty participants. Three categories emerged through the data collection and analysis: valuing, interacting, and evolving. The core category and the basic social process that emerged was professionalization. A theoretical model of professionalization was discussed.

CHAPTER FIVE

DISCUSSION AND CONCLUSION OF THE INQUIRY

The purpose of this grounded theory study was to develop a substantive theory of the process of faculty transitioning to teaching nursing documentation with the electronic health record and the factors that influence faculty in the transition. The intent was to move beyond description and use an inductive approach to generate a substantive level theory that explained the factors influencing nurse faculty attitudes and behaviors about implementation of electronic health records in nursing academia. Using the grounded theory method informed by Strauss and Corbin (1998, 2008), the basic social process of professionalization emerged. This chapter discusses the meaning of this study, the interpretation of the study findings, and a comparison of the categories with current scholarly literature. The significance of the study, its strengths and limitations, as well as, recommendations for future study are also presented.

Exploration of the Meaning of the Study

Grounded theory and its philosophical underpinnings of symbolic interactionism and pragmatism guided this study. The aim was to gain an in-depth understanding of the subjective and multiple realities of nurse faculty as they interacted with others in the complex context of nursing academia during the process of implementing electronic health records in academia. Following the procedures outlined by Strauss and Corbin (1998, 2008) allowed the researcher to systematically gather data from the nurse faculty participants who were able to offer valuable insight into the phenomenon of the study.

Symbolic interaction is concerned with the back and forth mutual interaction and the meaning that people make in interaction with others and society. Blumer (1969)

expressed three assumptions of symbolic interactionism. The first assumption asserts that "human beings act toward things on the basis of meanings that the things have for them" (Blumer, 1969, p. 2), with things referring to physical objects, other humans, groups, institutions, guiding ideals, activities of others, or situations. The second assumption declares that “the meaning of such things is derived from, or arises out of, the social interaction that one has with one's fellows” (p. 2). In third assumption, Blumer (1969) explained that “these meanings are handled in, and modified through, an interpretative process used by the person dealing with the things he encounters” (p. 2). Central to symbolic interactionism is that through interacting with others, people constantly construct and reconstruct the meaning of their life or situations and that symbols, such as words or gestures, are key components in the interactions (Franzoi, 2007).

The assumptions of symbolic interactionism were heard amongst participants as they shared their experiences of implementing EHRs in nursing academia. Societal memberships, which are often complicated and coinciding, affect people's viewpoints (Strauss, 1993). Through the participants’ experiences, it was evident that as the electronic health record replaced paper documentation, modifying and restructuring faculty's attitudes and behaviors occurred within the social context of nursing academia. When implementing electronic health records, faculty engaged in social interactions with students, each other, the academic institution, and the health care agencies.

Furthermore, the electronic health record brought an inevitable change in how faculty taught nursing documentation, after a long period of permanence. Reality within symbolic interactionism is always modified and changing and, therefore, research within this paradigm focuses on social processes that are recurrently modified (Franzoi, 2007).

As the faculty discussed their experiences in moving on the continuum of implementing EHRs in academia, the process was continually modified as they reconstructed their teaching. Faculty alluded to being comfortable teaching paper documentation and experienced challenges in implementing EHRs and that multiple factors influenced their attitudes and behaviors, as they moved along the process of implementing EHRs.

The methodological principle behind symbolic interactionism is that action, situation, and meanings attached to them are seen from the actors' (participants) viewpoint (Crotty, 2003). Through dialogue with symbols, such as language, researchers "become aware of the perceptions, feelings, and attitudes of others and interpret their meanings and intent" (Crotty, 2003, p. 75). The symbolic meaning of the processes that occurred between the faculty, students, and the agencies were described by the three main categories that emerged from the data: valuing, interacting, and evolving.

The main tenets of pragmatism are practicality and focus on consequences rather than antecedents (Bryant & Charmaz, 2007). Pragmatism is especially concerned with whether inquiry is going to make a practical difference and be useful. Reality exists in dynamic experience and is an element of the actor's environment. Pragmatism was the philosophical foundation that guided this study and from which a useful theoretical framework of professionalization evolved. Professionalization was the core category that explained the reality of the nurse faculty experiencing the dynamic process of implementing electronic health records within the context of nursing academia. The following section discusses the interpretive analysis and compares the study findings with current literature.

Interpretive Analysis of the Findings

The first two chapters of this study discussed the background of the study and examined the scholarly literature. Due to the paucity of disseminated research examining faculty's experience of implementing electronic health records in nursing academia, literature examining the experience of students and practicing nurses implementing EHRs was also included in the review of literature in chapter two. This study focused on nurse faculty's experiences of implementing EHRs in nursing academia and therefore added to the understanding of the phenomenon from the faculty perspective. The categories of valuing, interacting, and evolving emerged from the analysis of the data collected through individual and focus group interviews. The subcategories that emerged during the data analysis provided detail information about the three main categories. The core category that emerged was professionalization.

Shortly following the completion of the first few participant interviews, the researcher began to hear common thoughts and ideas as faculty shared their experiences of implementing EHRs in academia. As the faculty interviews progressed, together with coding, memoing, and constant comparison, the researcher became increasingly sensitive to the common concepts, grouping them into subcategories and categories, developing their properties and dimensions, while continuing to sample in order to assure variation and thorough development of the properties and dimensions. It was fascinating and reassuring to see how following the procedures of grounded theory outlined by Strauss and Corbin (1998, 2008) facilitated this novice researcher in the data collection and analysis process. Additionally another process, which permitted the researcher to bracket, included discussions with the chair about issues that seemed confusing.

While the main ideas or themes emerged from the data rather fluently and quickly, refinement of the conceptual names, as well as the development of their properties and dimensions, took significantly more time and stretched this novice researcher's theoretical sensitivity. The focus group was instrumental in providing clarity and insight that assisted the researcher in refining and integrating the emerged theory. Through the focus group experience and resulting memoing and going over the data multiple times, the researcher was able to refine the categories, particularly to communicate variation. This was especially meaningful in the main category of *evolving*, as it was clear through the focus group and through the resulting comparison of individual interview data that transitioning to teaching documentation using EHRs was a progressing experience with faculty existing in various phases of evolving.

Evolving was the category that emerged when faculty reflected on their own transition from teaching paper-based documentation to using the electronic health record in nursing academia. It had perhaps the most variation and dimensionality of all three categories that emerged. Dimensionality refers to the properties location on a range. The dimensionality of evolving was apparent not only *within* the individual faculty who commonly described their transition as having evolved from initial hesitance and anxiety to acceptance and comfort but *between* the faculty whose current state ranged anywhere from "if I had a choice I would go back to pen and paper" to "I guess anyone is tied to what they are comfortable with. Their little teddy bears" or "we just get used to it now and stop whining" to "I enjoy using it and I feel comfortable using it with the students." The subcategories of navigating, critical thinking, collegiality, and time/system barriers provided further detail about evolving.

The category of valuing emerged when faculty discussed their feelings about implementing EHRs in nursing academia. The principal meaning of the category was perhaps the most uniform with the least amount of variation and hence became saturated rather readily. All 15 participants spoke about the value of implementing EHRs in nursing academia. They believed that implementing EHRs in academia was necessary and important: "I think it's of utmost importance to incorporate electronic health records" and "I think it's definitely necessary." The subcategories of readiness, relevance, and experience provided further detail about valuing.

The category of interacting emerged as faculty shared their experiences of implementing EHRs in nursing academia. In implementing EHRs, the faculty were making modifications especially as it related to their interactions with others. Distance seemed to be a factor for many that influenced their behaviors when providing feedback to the students: "I think the only thing I didn't and still don't like is that distance now with the students. Because you are giving them feedback online and sometimes it's very hard to do, rather than in person saying: Gee, what were you thinking?" The subcategories of feedback, collaboration, and awareness provided further detail about interacting.

As the overarching theme, professionalization emerged as the core category that was able to explicate the process of faculty implementing EHRs in nursing academia. After the seventh interview, the researcher became subtly aware of the main theme of the study. Although unable to denote a conceptual name at that time, the basic meaning started to develop. After four more interviews and intensive memoing together with constant comparison and bracketing, the core category conceptualized as

professionalization. Accountability, patient centeredness, and excellence further illuminated professionalization.

Professionalization emerged from the data through theoretical sensitivity that had evolved over the course of the study. Through the participants' voices, the researcher began to see faculty, in implementing EHRs, striving to ensure and being cognizant that students discover and owe to beliefs and values such as being a good nurse, elevating the profession, patient specific documentation, integrity and honesty of being a nurse, and patient outcomes. It also was clear that the other three main categories all related to the social process of professionalization. Although, not being grasped by the researcher as the core until the seventh interview and further conceptualized after the 11th interview, professionalization was evident from the very first interview. A comparison and discussion of the categories with the current literature is presented in the following section.

Valuing

All of the individual and focus group participants engaged in valuing the implementation of EHRs in nursing academia. Valuing in this study is defined as "the evaluation of a phenomenon as having worth, utility, and importance" (O'Connor, 2006, p. 50). A common notion was that having the opportunity to experience documentation using EHRs while in school resulted in the students being better prepared to enter the nursing practice upon graduation, as Cooking Italian said: "I think that it will make their transition from student to novice nurse a lot easier because most facilities use electronic health records now." The faculty also considered that implementing EHRs in academia was of relevance because of what is occurring currently in practice, as reflected by Snow

White's comments: "you go to the hospitals, the chart, there is nothing in it anymore, the hand written one. It's all electronic." The faculty participants also felt that the experience of practicing documentation using an EHR while in school, afforded the students the skills and knowledge needed in their future practice as Todd explained: "it's getting that experience. So at least when they get there to the practice as a nurse, then at least they have done it little bit, so it's not brand new and they have some *experience,*"

These findings were supported by a qualitative collective case study by Bani-issa and Rempusheski (2014), who investigated teaching beliefs and subsequent teaching practices of nurse faculty ($N = 7$) teaching with EHRs in a classroom setting. The study resulted in emergence of two case studies of teaching beliefs: a constructivist educator and an objectivist educator. While few faculty had objectivist teaching beliefs with negative attitudes about the EHR and did not see EHRs fitting into their teaching practices, most of the faculty were constructivist educators and believed that using EHR in teaching was important and current and would prepare students for practice (Bani-issa & Rempusheski, 2014). Perhaps the participants in this study can be seen from the light of the constructivist educator, as they shared same beliefs about valuing using EHRs in nursing education than did the constructivist educators in the study by Bani-issa and Rempusheski (2014). Donald Duck stated: "it reinforces what's going on in practice." Laney agreed: "I think they are benefitting from it, it's preparing them better for clinical practice." Todd felt: "one of the goals should be using the electronic medical record because when they get done they are going to have to use it." Cooking Italian explained:

> I think at the end it's positive because all the facilities are going to computerized documentation. I think it adds more stress to the students when they go from the

> student perspective doing all hand written paperwork to electronic documentation. That adds to their stress if they haven't had that training and some foundation with it. So I think it's positive ultimately and while it's difficult sometimes to incorporate it.

Another study also found similar results in valuing EHRs in nursing academia. Kowitlawakul et al. (2014) conducted a qualitative study to investigate nursing faculty's (N = 7) experiences and perceptions of implementing an electronic health record in the nursing skills lab and to explore what factors may have influenced faculty in its implementation. The three categories that emerged were innovation, transition, and integration. The faculty expressed that the EHR in their skills lab was an innovative and valuable teaching tool. They valued the EHR, perceiving it as useful and beneficial for students' learning because hospitals were using them and therefore students would be more comfortable in documenting electronically. They felt that the EHR gave students an opportunity to learn it prior to their clinical practice.

Mrs. Blue statement in this study concurs:

> It gets them used to having to go through, going to each section and getting used to actually using computer with something like documentation. I also think that because they are starting, especially if they start right away in their first semester that ... I think that because they are starting with the electronic health record it gives them a great benefit over students who are starting with paper documentation because they never get used to the paper documentation, they immediately get used to the electronic health records.

Interestingly, few studies from nursing students' perspective confirm this finding. Jansen (2014) conducted a study using a single group descriptive design to explore nursing students' (N = 16) perceptions of utilizing an EHR during simulation experiences. The Nursing Education Simulation Framework was used to guide both implementing the EHR into the simulation experience and the evaluation of the corresponding students' experience. Data were collected via researcher-developed and pilot-tested survey instrument that included 10 Likert-type closed-ended questions and 10 open-ended questions. Content analysis with "empiric-analytic inductive technique" (Jansen, 2014, p. 167) was utilized for the open-ended survey questions. The mean for the 1-6 range Likert-scale items ranged from 3.8 to 4.9 with the highest mean being for the item stating that "it is important for the nursing program to use some type of EHR system" (Jansen, 2014, p. 166). The content analysis of the open-ended survey questions resulted in the emergence of eight categories. One of the categories indicated that the students recognized the value of being able to practice with the EHR instead of only using paper documentation.

Mountain, Redd, O'Leary-Kelly, and Giles (2015) conducted a descriptive correlational study to investigate student nurses' use of an academic electronic health record during simulation experience. The study assessed the perceptions of students and their preceptors who the students were working with during their preceptorship experience in the hospital. During the preceptorship experience, the students used EHRs in the hospital and also took part of two simulation experiences. One group of students used EHRs during the two simulation experiences, while another group used only paper and pen during the simulation experience. The data was collected via researcher-

developed Likert type online questionnaire that was administered to preceptors whose students also used EHRs in simulation (n = 15) and to the preceptors whose students did not (n = 23). The survey was also administered to all of the students (n = 30). The quantitative data was analyzed with SPSS, and no explanation was provided of the analysis of the data from the open-ended questions. The study found that there was an increase in the accuracy of students' documentation of the group who used the EHR also during simulation, as reported by the preceptors. However, due to the small sample size, this result was not statistically significant (Mountain et al., 2015). The students' open-ended responses revealed that students felt that using the EHR during simulation increased their confidence, comfort, and assisted them in electronic documentation. Furthermore, the students desired using the EHRs throughout their nursing education, including simulation.

Jones and Richards (2013) studied nursing students' (n = 20) and their home health clients' (n = 17) perceptions of the students using an EHR to document their home health visits. The design was descriptive, and data were collected via researcher-developed Likert type survey that also included an open-ended question. The results revealed that 100% of the students felt that it was "important that students learn the EHR" and 82% of clients agreed. The researchers concluded that it is important that students have the opportunity to practice EHRs in their educational environment (Jones & Richard, 2013).

Snow White in this study discussed her encounter of student feedback:

> I think it gives the students, I think a better experience because when they go to practice they really have to document using the drop boxes and I've had students

> come back that even though they hated it in school, someone recently that was hired, said she now sees the benefit of it.... she said she use to curse it when she was in school but sees the benefit of it now that she has to do all the charting electronically.... I think definitely doing the assessment, the charting of that, and the care plans are all electronic. She did say that it did help the transition, her transition was just a little bit easier. She told other students did too.

Valuing was also found in a study by De Vliegher, Paquay, Vernieuwe, and Van Gansbeke (2010) who conducted a qualitative explorative study of home health nurses' (N = 24) experience of implementation of an electronic health record in their practice. The data analysis using Nvivo 7.0 revealed three themes: "implementation process," "impact on daily home nursing practice," and "advantages and disadvantages of the system" (De Vliegher et al., 2010, p. 508). The implementation process theme talked about the support and education that the nurses received, the theme of the impact on daily home nursing practice discussed the EHRs impact on the nurses' workload as well as communication, and finally the last theme revealed the advantages and disadvantages as experienced by the nurses. Most importantly, the study revealed that although there were challenges, such as increased workload and time consuming processes, the nurses wanted to venture the EHR implementation because they believed in its value. The authors concluded that the nurses were "trying to find a balance" (De Vliegher et al., 2010, p. 512) between valuing the EHR and the challenges in learning to use it.

Interacting

Interacting in this study is defined as the multifaceted process of forming interpersonal relationships, communicating, and facilitating connections between the

faculty, students, staff nurses, clinical and academic agencies (O'Connor, 2006). "Many aspects of interpersonal interactions that are seemingly peripheral to the actual act of teaching are, in fact, critical to success" (O'Connor, 2006, p. 248). Social theories of learning suggest that "knowledge is socially constructed in interaction with others" (O'Connor, 2006, p. 41). The faculty in this study experienced changes to how they perceived interacting with others in teaching nursing documentation and discussed challenges faced, as well as strategies used in interacting when using EHRs in nursing academia. One of the concerns was the challenge with one-on-one instruction when utilizing the EHR. Boomerang shared:

> ... I think the only thing I didn't and still don't like is that distance now with the students. Because you are giving them feedback online and sometimes it's very hard to do, rather than in person saying: Gee, what were you thinking? And, so I try to incorporate that kind of language in my critique: what were you thinking, or why did you do this and, you know, how did you go from here to there to make them critically thinking through it, even though there is not that one-on-one contact. I mean it's working, it's just working differently.

Todd stated:

> It wasn't until one of the faculty said that you're simulated EHR wasn't graded. And I'm like what are you talking about, I'm grading it. And I'm sitting down with the student, which was a very good learning experience with the student because I was literally going over it with them *in person*, one-to-one. And then they said, no on the iPad™ it doesn't go through, so then I had to revert *back* and go back to grading it at home on my computer and of course I wasn't going to

> grade it at home on my computer and *then* sit down with them in clinical and then do it *twice*. So, then I find that it's not as good learning experience cause when it was on paper, I would grade it with them in person and then it was one-to-one experience.

Similar challenges were shared by the nurses in the study by Laramee et al. (2012), which was also discussed earlier in the comparison of literature in the category of evolving. Nurses in the study by Laramee et al. (2012) felt that the implementation of the EHR altered the interactions they were having especially with physicians and patients. The nurses felt that they stared at EHRs rather than patients and sharing information via the EHR resulted at a reduced time they spent communicating face-to-face with physicians. Also previously, when comparing literature in the category of evolving, a study by Spencer et al. (2012) was discussed. In addition to the findings that related to the category of evolving, another theme emerged from the faculty's comments, which was commensurate to the findings of this study as it relates to interacting. In the study by Spencer et al. (2012), the medical faculty shared that implementing EHRs in their teaching deteriorated their interactions with students, patients, and each other, particularly as it related to communication.

This study of nurse faculty also found that implementing EHRs in teaching influenced the faculty interacting with others. Although, similar concerns regarding communicating were expressed, especially as it related to providing feedback to students, the participants in this study did not inevitably agree that the interactions deteriorated, as did the medical faculty in the study by Spencer at al. (2012). They felt that EHRs presented a specific challenge that they contemplated about and to which various

strategies had been developed, such as discussing the electronic charting during clinical post-conference or bringing a laptop to clinical if possible. Ms. Pink shared her experience with the challenge of giving feedback in person:

> It always stick out and it hasn't really improved unless I sit in a room and call them back one by one and look over their thing, which takes a lot of time away from their care of the patients. Or I have to think about, what I wrote and then try to talk to them. That's just the biggest problem. It just always comes to mind right away.

Snow White stated:

> The students, they have to take the responsibility of reading the feedback and implement the changes cause I'm not verbally doing it. I try, like I said, make a note of it (to talk in clinical), but it could get a little bit lost when you are not giving them back their papers.

Cooking Italian also saw that EHR affected her interactions with students, but had developed various ways to assure that she was truly interacting with her students despite the challenges of the EHR:

> One thing that like to do is in the very beginning, their first clinical I actually like to bring my laptop with me and we actually open up the simulated EHR and make up a patient and we actually sit together as a group and go over each section of the chart and then show them where they can put the information and how if they make an error, how that can be corrected... if they had additional information that they needed to expand on or if they needed to write a nurses note, a focus note on an unusual event or incident is what I usually would tell them, anything out of the

> norm, showing them where they could put that information. Showing them how they can open up other areas of the chart to make it more individualized to the patient. So, I like to do it by demonstration and then also what I'll tell the students that if they are in progress in the chart and like they'll have a question and they contact me, then I try to go in and look at it to see where the problem is just so that I can go see to where I can help them. Also a lot of feedback, both verbal and written. Written in the actual chart, but then each week in clinical at some point once during the two days, I would give them some kind of feedback as a group, generalized, just letting them know what I'm seeing continuing to be a problem. Um also trying to get them graded in a timely manner, so that they have feedback before they make the same mistakes again. So those are just some of things that I like to do.

No current research was found from the faculty perspective, confirming faculty's challenges in providing feedback on the EHR. However, a study from students' perspective concurs that expert feedback of students' documentation is important. Elliott, Judd, and McColl (2011) studied medical students' (N = 10) experience of using an EHR for a month during their final year clinical experience. The authors did not disclose the study design; however, data collection was conducted via a survey and two semi-structured audio taped interviews that were "manually analyzed for emerging themes" (Elliott et al., 2011, p. 61). One of the findings from the survey data that used a 5-point Likert scale, was that students strongly agreed that it was a good idea that the teaching staff (μ = 4.29) and the clinical staff (μ = 4.07) were able to comment on the students' EHR documentation. The semi-structured interviews revealed that the medical students

appreciated the “community” (Elliott et al., 2011, p. 62) that was created by the clinical and teaching staff being able to provide feedback on their documentation in the EHR and that “getting expert feedback on records” (p. 62) encouraged the students to use the EHR.

While majority of the faculty members in this study felt that interacting in terms of feedback was hindered or at least a challenge, a few did not share that notion. Laura shared about being cognizant of how she was going about the feedback:

> I ask them to look at the comments and then ask me if they have questions. And I tell them also what will happen next week. So, I always start by telling them what they did good and then what they need to do for the following week. So, as a teacher we have to do that. I may point out that when they put sometimes information about a medication or something: thank you for the information, but you didn’t put down the dose for your client, so please include that next week. Because I can be critical, but I can also encourage them and I think and hope that it comes across (in the EHR).... I feel like they are young and eager and can read my feedback online and say that OK professor said that, I better do it next week. So, not at all. I don’t object to that at all and I don’t think that the students either. I think that you have to give them good feedback. There must be something good that they are doing. So tell them they are improving.

Rose had similar thoughts:

> I mean the fingers, your fingers are doing the talking, the communicating with your students.... I think it’s more convenient for students... I think... for example in the electronic chart, if the student wants to ask you a question about something, you can go into the chart and see where they are at and see, you know they need

> help and you can be there and communicating with the student right there and then and you have a *picture* or you have their chart in front of right there and dialoging with the student at the same time. Because you can see what the student has done or what the student wants to do. I don't have that visual if it was in paper.

Chester looked at the feedback largely from a student perspective:

> The students are waiting, they are waiting for that graded care plan, so they know what to do next with the next one.... And you know they like instant gratification. They like to see it now. They can't wait for you to grade a paper and hand it to them. They want to see it now. So, it's a good thing. They're getting it right away because as soon as you have graded it says, a box comes up that says the e-mail has been sent and some of them, the e-mail is linked to their phone, so as soon as they get it, they are able to look at my comments. It's not like they have to wait for the day of the clinical for me to bring the paper in, so they are able to see the comments right away and then *talk* about them. They have a chance to come to the clinical with their questions like what do you mean by this or I don't understand this or if I said not enough information, how can I make it better. So, you able to speak to them about it, so the next mistake they are not making in the next care plan, if they didn't understand exactly what the comment was. Because when you are online, it's even better, because I try to highlight it because you have like a red pen that you can go in and highlight right on their documentation what I am talking about, so it gives them a better perspective. In each section, I'll say, OK, it's still not clear and then we talk about it in clinical. So it does make it

better cause they have a chance to read it and review it before they come to clinical.

Students in a study by Rouf, Chumley, and Dobbie (2008) did not see a hindrance to feedback or communication either with EHRs. Rouf et al. (2008) conducted a descriptive survey study of medical students' (N = 33) perceptions of using EHRs during their outpatient clinical experience. The data was collected via researcher developed Likert type questionnaire, assessing the impact of EHRs on the students' learning. The results showed that majority of the students (69%) felt that their documentation was improved using EHRs and valued learning to use them. Most interestingly, very few (9%) of the students felt that the EHRs "adversely impacted communication with their teachers" (Rouf, 2008, p. e5), and 39% even reported that they obtained more feedback from their teachers on their electronic documentation than the paper documentation.

In interacting, collaboration was evident how faculty experienced the process of implementing EHRs in nursing academia and hence emerged as a subcategory of interacting. The faculty discussed shared learning by collaborating not only with each other, but also with students, staff nurses, and even through having or desiring of having access to the agency's electronic record. This notion is confirmed in a study by Bani-issa and Rempusheski (2014), whose qualitative case study, investigated teaching beliefs and subsequent teaching practices of nurse faculty (n = 7) teaching with EHRs in a classroom setting. Although previously discussed when comparing literature in the category of valuing, interestingly, their study also concluded that the constructivist educator, in teaching with the EHRs in the classroom setting, believed that it was an "interactive and shared experience" (Bani-issa & Rempusheski, 2014, p. 909), which relates to the

findings of this study associated to the category of interacting. The faculty in Bani-issa and Rempusheski's (2014) study noted that they were the facilitator in learning and that teaching EHRs was a shared learning experience. The participants in this study shared remarkably similar thoughts. Browser stated: "I look at myself as a facilitator" and Snow White stated: "I'm OK, let's figure something else out together." Maryanne further explained about shared learning:

> Even students, although they had never done a psyche chart, the students had done simulated EHR in their other semesters, so the students were actually able to tell me, you know we saw this document here on the floor when we were in the clinical and it actually is here if you go under this tab and you go here we can find it in simchart, and do you want us to do that. So, even the student kind of helped because I think they want to get as close to the real thing as possible too.

Chester also talked about shared learning:

> They would bring their laptop, and then we would go over it together because somebody usually in the group would know it better and then we would take the time in the laptop and go through it and OK this is where you find it. And they were able to. So, they would help each other too, someone would bring their laptop.

Cooking Italian felt EHRs were a learning curve for both faculty and students:

> What was difficult with the transition was both for me having to learn the platform that we were using and going ahead and communicating it appropriately to the students so that they can do effective documentation for the clients that they were caring for. So, it was a learning curve for both.

Baillie et al. (2013) surveyed adult nursing students (*n* = 51), mental health nursing students (*n* = 28), and midwifery students (*n* = 26) to explore their experiences in learning to use electronic health records during their clinical practice experiences. In addition to the questionnaire, Baillie et al. (2013) conducted three focus groups with open-ended questions. The survey data were analyzed with descriptive statistics, and Pearson's chi-square was used to determine associations among variables. The data from the focus groups were thematically analyzed with Patton's framework (Baillie et al., 2013). After the focus group, themes were reviewed in relation to the survey results, two overall themes emerged: "preparation for using EHRs and skills development" and "access to EHRs and involvement" (Baillie et al., 2013, p. 439).

The theme preparation for using EHRs and skills development (Baillie et al., 2013, p. 439) revealed that 64% of the participants felt that they were well prepared for documenting with a paper-record, but only 16% felt the same regarding EHRs. The theme "access to the EHR" revealed that there was a difference between the first-, second-, and third-year students, with 27% of first-year students having had access to the EHR as compared to 63% of the third-year students (Baillie et al., 2013). The students in the focus groups indicated that the lack of access to the EHRs was frustrating and affected their learning. They discussed that while they were allowed to access paper records without restrictions, the EHR access was limited due to their mentor's uncertainty or unfamiliarity with students' authority to access the EHRs. Due to the results of the study that revealed the students' concerns of not having access to the EHRs, a collaboration between the university staff and the hospital staff was established in order

to develop a process that would assure that students would have an opportunity to practice documenting with the hospital's EHR system.

In this study, only three faculty participants indicated that their students had access to the clinical agency's EHR. All 21 participants indicated that their principal method of implementing EHRs in their academic institution was via a simulated EHR. In addition, 13 of the 21 participants indicated that the students had exposure to the clinical agency's EHR via faculty being allowed access by the agency. The faculty participants discussed the shared learning aspect and appreciated the collaboration when it existed with the agencies and some faculty also desired access for ideal learning. Laney stated: "I think it would be ideal if we could get them to do our EHR in the clinical setting, so I think that would probably be the best scenario." Judy had access to the agency's EHR, but her students did not:

> I think what would be ideal is to be able to like some hospitals let the students sign on to their system. That to me is ideal .... Ideally that would be good to sign on what they are actually using in facilities. For example with eMAR, I sign on with them and let them actually handle it, where to go find things, where to look.... I don't think they get that on the simulated charting. It's not as concise as to what you do at a facility.

Chester also had access to the agency's record:

> ... I feel it's good because it's the real world now. So, based on, like even doing, for example doing medications, which I do with the students in the clinical and they see how to do it. Because it's all timed, cause you have to give medications

> at a certain time and if you pass that time they see the red flag and they also see how the nurses can get themselves into trouble too.

Mutton also had access to the agency's EHR:

> I like connecting the dots for them because there is no better place than now with this electronic record to be able to see where someone comes in and they are say their hemoglobin is say 9 and then it's 8 and then 7, and we don't know why and then they'll have questions, well did anyone call a GI doctor or whatever, so I'll have them look at all of this because it's all right there, anywhere that I click I'll say well did you need to look? Or they'll say where is a GI doctor, and I'll say click here and all the doctors that have been consulted come up in this window so that they can see. So, I'll show them how to navigate in the system, so they'll know that everything is right there and they don't have to go anywhere else.

Laura explained:

> In clinical we have their system, the eMAR and EHR and we have all the information. And we give meds and it's on the eMAR and they can see everything. So, they see that it's electronic. They see the yellow when its time to give meds, it's green when you are done and it's red when you are late. And it's being monitored too because it has to do with the quality assessment. Like if you are giving meds late, what's going on. So, it's kind of nice that they see that perspective too when they see it in clinical. We give meds. Every one of them will give meds at least once. So, then they do their recording in the eMAR with me and so they can see how wonderful it's with the system and how *safe* it is. Because I usually tell them, look once you have given the med it turns green. No

> other nurse can now access to make a mistake to give the med again because when we did it, it recorded it. And all that information is there for another nurse, so she knows that. So, they can see continuity. It's another aspect. And the same with all the client data. We pull it up and look at the information. So, they can see many things. Anytime they want to check their clients, I take them one by one and we look up all the information, the diagnosis, and even nursing care plans there to see what they did. We look at notes too and the eMAR so they can prepare for their day when they are giving meds. So, they are ready. I think it's wonderful that I have access to the computer system there. They gave me access and I think that's such a good benefit. It's wonderful. So, they can see actually what information is available there for doctors, nurses, and all the health care workers.

Cooking Italian whose students had access along with her explained:

> The actual electronic record in the hospital they (students) use for viewing purposes only and then to administer medications with me only, but they cannot put anything at all in themselves, it all has to be connected to my code as an instructor. So, they are able to observe what's in the actual health record in the hospital and also sometimes what I like to do is show them some of the documentation from the nurses, so they can understand how information gets put into the computer and also look at things like what could be done differently to, you know, if you were documenting on this patient, how would you type a note, would you write this, how would you classify the wound, so I kind of use

example to show them what you could have done differently or what's OK with this particular document or what's missing from this document.

Evolving

Evolving in this study is defined as a dynamic process of growing and developing in the experience of change (Mathew-Maich et al., 2007). In transitioning from teaching paper documentation to using the EHR, faculty perceived the implementation process as a progression and were noted to be in various stages of evolving. Many participants shared that they were comfortable with paper documenting and that there was a learning curve needed when transitioning to using EHRs in academia, as it was a change and something new. Snow White shared:

> It's just hard when you are an older nurse and you have done things that way and don't have the time to make the change. But I think that once you learn it, its good. Just to get to that comfort level. Especially with technology with me. That's the area that I always fight it a little, but.... I had to get myself familiarized with it first. So, in the beginning it was a little hard, you know like anything new, until you get comfortable with it and know it.

Rose shared:

> Well it takes time to learn and... and you cannot help your student until you know about the software. If you are going to teach something, you have to know it very well. OK. To make a difference and send the correct message... change, change always, change... you get a little bit anxious, about changes and we have *been* accustomed to paper. So, changes brings on or change brings on a little bit of

anxiety. But the change is for the better. You have to see; you have to look ahead. As I said, the future is now.

Starla explained:

So the transition is just the nature of the transition, the nature of the beast. It's always a little difficult. Change is hard. Change is always a struggle. But it was probably more difficult than some other things I'd say. But I think it is a worthwhile change and it's inevitable. Electronic documentation is here to stay. So it's a good thing. But I was OK with it. I had no big problem with it. I had my students doing all the same assessment and they were handing it in in a 15-page document and they did it. And it was hard for me to give that up, I say, personally. And I would say for the first 2 years I had them do that and I had them do the electronic one. It was only really this year that I had them only use that as their sort of crib sheet. And then they used that as they transcribed that just into the electronic one. Because it was hard for me to make sure that the electronic one was comprehensive enough to cover all the minutia that I wanted.... So, I was a little reticent to do some of that stuff. But I did.... So, I guess anyone is tied to what they are comfortable with. Their little teddy bears.

These findings were supported by Laramee et al. (2012), who conducted a quantitative study with a pre- and post-survey design to understand nurses' attitudes towards electronic health records prior to (n = 312) and both 6 months (n = 410) and 18 months (n = 262) post implementation of an electronic health record in a 500-bed hospital. In addition to the Likert-type questions, the survey also included an open-ended question asking nurses to share any additional thoughts about the experience. The

answers were analyzed using the Collaizzi method and revealed that the nurses perceived the implementation as a major change that was challenging and difficult. The authors further discussed that the EHR implementation "does not allow the nurses to return to what may be perceived as a safer/known paper documentation system" (p. 529) and that EHRs necessitates nurses to constantly change.

Similar results were also found by Mahon, Nickitas, and Nokes (2010), who conducted a qualitative exploratory study, of how faculty members (N = 25) perceived teaching documentation skills to students either with paper or with clinical agencies' electronic system. Four themes emerged from the study: teaching strategies, learning from experts, road from novice to expert, and legal-ethical institutional issues (Mahon et al., 2010). The study found that faculty perceived themselves as competent and confident in teaching paper-based documentation skills, suggesting a "plateau of comfort in this area," and that "the learning curve is steeper and the energy required to problem solve and skillfully use the system is greater than that required for success using the familiar paper system" (Mahon et al., 2010, p. 620).

In addition Mahon et al. (2010) also found that the faculty reported time constraints in orienting, training, and acquiring access to the clinical agency's system, which consumed too much of their time (Mahon et al., 2010). Spencer, Choi, English, and Girard (2012) who conducted a quantitative survey research on how implementation of an EHR in medical education affected clinical faculty's (n = 427) teaching enthusiasm and what factors contributed to their responses, also found time being a factor. In addition to the survey items, the faculty participants were able to provide free text responses and the researchers found that the most common theme in the responses by

faculty was “regarding the additional time needed to manage the EHR” (Spencer et al., 2012, p. 109). Similarly, Kowitlawakul et al. (2014), in their study of faculty perceptions of implementing EHRs in the nursing skills lab, which was discussed earlier in the valuing category, found that the faculty felt that implementing EHRs was time consuming and added to their workload.

In this study, time emerged as a subcategory of evolving and was also experienced as a barrier, as expressed by the faculty participants, especially as it related to the grading process. Laura said:

> They take a lot of time. Very time consuming.... If I had more than eight students, I don’t know how I would divide this work. You know we asked one of the younger nurses, how long does it take. She said not much really. She is fast maybe. I don’t know what people comment. I like to do a little bit more. I comment about culture, for example, so I may put a sentence there about the particular culture, so give them a little extra. So I think that maybe takes a little more time than clicking and sending it away. So, maybe someone else leaves it at commenting at what needs to be. I tend to be the kind who wants to give a little bit more. Look at this and think about this. Maybe I shouldn’t, but I do it. And when I think about it, I just like to tell that little extra like about someone’s culture or listening to bronchitis sounds or something. Just a little bit extra. Yes, and maybe it wouldn’t be so time consuming if I just kept to the business. Well done and that’s it. But I put a note when I see something because sooner or later it comes time that they will need to know it, so might as well put that information there. Make them think a little bit. So I aim to do that. But I could

> sit there all night if I do that. But I try to feel good when I send it away. I try to feel good.

Judy stated:

> So the learning curve for us as faculty as well as students is that if you don't explain to them right up from front what you expect, then you are not going to get it and then they are going to have to redo it and then you have to re-grade it. And that's a lot of time for both of us... I love it and I hate it. As much as I love it, I hate that it takes so much time.

Chester explained:

> Well, just the time. That's the biggest thing. Because you can't just go with it anywhere. That's the only thing that I would love to change. This is the thing I would like to change. Because you can't go, you have to dedicate 4 or 5 hours just sitting there, so I would like to grab my paper, go and read it. So that's the only thing. Because you have to make sure you have 5 hours that you can sit there 5 hours, with no interruptions, if you can.

In addition to the time barrier, the study by Spencer et al. (2012) found a common theme of faculty feeling that the EHRs restricted their ability to evaluate students' critical thinking and that the various templates within the EHR affected the quality of the students' documentation. Similar result concerning critical thinking was seen in this study. In evolving, the most prominent and collective challenge for faculty was the concern over the development and evaluation of critical thinking using the electronic health record and "checking boxes", as compared to how they felt about paper in teaching documentation. Hence, critical thinking emerged as one of the subcategories in evolving.

Donald Duck explained: “it’s really hard to evaluate student’s critical thinking and the ability to understand their patient and document pertinent information on the simulated EHR because sometimes when you’re reading it, it looks as if they just click, click, click.” Browser stated: “it (EHR) doesn’t lend itself, it doesn’t allow them to think critically. Well it’s like this ‘Ok this applies’ where before (with paper) you really had to think about what you want to write, but it’s given to you”.

Cooking Italian shared:

> I think the clicking the boxes can definitely be a challenge, but although it sort of serves as a guide to them, it is almost as they take the easy way out and just click on. You know it gives them a nice selection of choices and they don’t really have to think about it. They just say, oh I can pick this and I can pick this and they don’t really think does it apply to my patient.

In evolving, interestingly, unfamiliarity or familiarity with a computer per se did not emerge as factors nor did age. While few faculty discussed age, or being computer savvy or being afraid of technology, none were common occurrences in the data as factors influencing faculty attitudes or behaviors in implementing EHRs in academia. Instead, in evolving, navigating was a common strategy faculty used and collegiality was commonly cited as facilitating the process of implementing EHRs in their teaching. Navigating and collegiality emerged as the subcategories of evolving. Snow White talked about navigating:

> Just practicing, doing that every week. Trying to get better at it, with grading and getting on to try to see the different sections. But more I did it, the better I felt about it. You know all the sections, where everything is, all the specialty charts

> and stuff like that. Just knowing where they are, so I can point them out to the students, so they know where to put the information. The comfort level was just doing it more and more because it is a little bit of a process, knowing where things are.
>
> Mrs. Pink stated:
>
> Just personally playing around with the program helped, you know. Cause unless you're actually playing around with it and physically doing it, somebody could tell you over and over again how to do it, but unless you are actually doing it *yourself*, it doesn't really click. So, I think that was probably the *biggest* thing, just going into the program and *actually* using it.
>
> Sunibaby shared:
>
> Some of the strategies I used, I became very knowledgeable first of all in the electronic health record. I spent time with it at home and I went through it as I do with anything new. I went through it three or four times, I did my own documentation and I went from there. And there was faculty here during the implementation that was helping the faculty along.

Similar result was found by Jones and Donelle (2011), who conducted a usability study of electronic health records with nursing students (N = 13). The participants were given a short introduction to an EHR and then asked to complete several tasks in the EHR based on a presented patient scenario. The students were asked to think aloud while performing the tasks. The data collection included video recorded observation of the participants' actions and their audiotaped verbalizations. A thematic analysis was used for the videotaped participant actions, audio-recorded participant comments, and the

responses to the open-ended questions. The thematic analysis resulted in three themes: being novice, confidentiality and security, and repetition and practice (Jones & Donelle, 2011, p. 10). Similar to the faculty in this study, the students indicated that repetition and practice increased their comfort and capability to use the system (Jones & Donelle, 2011).

Although not investigating implementing EHRs in academia, a comparable finding was found in a study of nurse faculty teaching online. Robinia and Anderson (2010) conducted an exploratory descriptive study of nurse educators' (N = 140) online teaching. Their aim was to examine various factors, such as age, gender, general teaching experience, online teaching experience, general preparatory experience, and instructional and/or colleague preparatory experience and their correlation to the level of nurse educator's online self-efficacy. The study found that in general nurse educators had a relatively high level of self-efficacy in online teaching (Robinia & Anderson, 2010). There was no significant correlation between age, gender, years of experience, or general teaching preparatory experiences and the level of self-efficacy. However, there was a positive correlation between the number of courses taught online and the online self-efficacy, with the highest correlation after three or more completed online courses. There was also a positive correlation between preparatory experiences in instructional designer support/colleague support and the online self-efficacy scores (Robinia & Anderson, 2010). The authors concluded that the correlation between the third online course taught and self-efficacy, as well as between the preparatory experiences and self-efficacy suggest that if administrators want to increase the online self-efficacy of their faculty,

they strongly need to consider offering instructional or colleague support to them at least through their third time teaching an online course.

Chester shared about collegiality: “speaking with faculty who had worked with the program before was a big help.” Sunibaby explained: “you really want to have a point person who knows what’s going on in the clinical practice that helped faculty in the transition to using EHRs in nursing academia.” Maryanne stated:

> ... definitely going to faculty who had previously worked within the simulated EHR helped. Particularly faculty who were also in psyche. So, kind of could feel my pain that its not completely catered to, was a big help and to what the expectations were and just letting me know that in her experience the students are so focused on these other things because they have already being doing precise medical charting for several semesters.... So... sitting with her and finding out what is not getting done and what needs to be done with the students.

These findings were also supported by Whittaker et al. (2009) who conducted a descriptive qualitative study examining nurses' (n = 11) perceptions of barriers and facilitators in implementing electronic documentation in a hospital setting. One of the facilitating factors for nurses in the process of implementing EHRs was identified in the study as having “assistance and support from other nursing staff” (Whittaker et al., 2009, p. 298). Similarily, Vezyridis et al. (2012), who carried out a qualitative study to explore nurses’ (N = 22) reactions to an implementation of a computerized information system in an emergency department, found that one of the preferred strategies, as indicated by the nurse participants, was receiving help from their peers.

The three categories valuing, interacting, and evolving that emerged in this study were supported by current literature. Although scholarly literature investigating nurse faculty's perceptions of implementing EHRs in academia is scarce, the literature from the viewpoint of medical faculty, nursing and medical students, and practicing nurses experiencing the phenomenon concurred with the findings of this study. Still, currently no theoretical framework exists that is able to explain the critical factors that influence faculty attitudes and behaviors about implementation of electronic health records in nursing academia. The basic social process of professionalization provided this explanation.

Professionalization

Through the voices of the faculty participants and listening to their experiences, professionalization befell as the central premise of this study, to which everything else related. The faculty participants' reflections communicated that in transitioning to teaching documentation using electronic health records, they were exceptionally cognizant of the continuation of professionalization, as they were implementing EHRs in their teaching. It was evident through their voices that implementing EHRs in nursing academia was not only about teaching the skill or students gaining the knowledge but assuring that students assume the values and behaviors of professional nursing practice that inform nursing documentation.

Professionalization connected the three categories of valuing, interacting, and evolving, along with their subcategories and supported the way they interrelated. All faculty participants engaged in the social process of professionalization in various degrees, as they were re-conceptualizing teaching nursing documentation using electronic

health records in nursing education. Accountability, patient-centeredness, and excellence illuminated the process of professionalization.

Professionalization in this study is defined as "acquisition of the requisite knowledge, skills, values, and attitudes, which are characteristic of the profession" (Faison, 2003, p. 83). Professionalization, the socialization into a profession, is socially constructed and is the process through which students not only become aware of the distinctive knowledge and skills of a profession but also "gradually internalize the values and beliefs of members of that profession" (Clouder, 2003, p. 220). Professionalization can be viewed, as a process of interactions between students, faculty, staff nurses, and even health-care and as such, is forever changing and dynamic (Dinmohammadi et al., 2013). Professional identity involves assuming the values that are essential to the nursing profession and working towards enhancing patient outcomes and the standards of nursing practice (National League for Nurses, [NLN], 2010). According to NLN (2010) excellence and patient-centeredness are core values of nursing practice, and the American Nurses Association's (ANA, 2015) code of ethics notes accountability as one of the ethical values of nursing practice.

In the process of professionalization, the faculty in this study believed in solid professional expectations regarding students' electronic documentation, such as accountability, patient-centeredness, and excellence. Laney stated: "I think that the electronic chart itself is not patient centered per se, but you try to get them to do it, so it reflects the patient at the center of care." Scootie shared: "many of the goals I have for the electronic health record are the same goals I had for the paper. That they can make it patient specific."

The dialogue by Boomerang illuminates professionalization and accountability:

> Being a nurse requires a real high moral standard basically within your own system of morals and values and it requires an ethical bases that you could not allow your self to cheat on. So when you go out there and be a nurse, you have to be the person who takes full care and full responsibility and so what ever has to be done, you're going to do get it done and you are going to do it correctly and you are constantly going to be checking yourself so you don't make mistakes. Because you have hundred times a day to make a mistake. And, so when you chart, you're going to chart the same way and you will have hopefully done every part of you job and have charted that and not just... we all know nurses that what ever reason, well I didn't really turn them over, so now I'll just chart that his back was fine.... Charting is very important, you don't necessarily want them (students) to learn all of that on a job... because you don't want them to... leave themselves liable with errors and that's a key part of teaching nursing, it's not only the ethics about writing, you don't want to write anything you haven't done or seen and you also don't want to write the wrong information simply because you didn't understand what you were supposed to be writing down, so I think that is an important practice for them and that's something we have to be teaching them, so that's the importance of it. So, if they are charting something irrelevant, it's nice to get that feedback that you don't want to put that into anyone's chart... because you want to only chart what is there and the ethics of it also. And part of the simulated EHR is: don't make it up. Be honest. Do it on what you've done and seen, so... there is that element too.... So, that's the professional part of it and the

> ethical part of it. You, don't ever wanna have anyone question your ethics or your patient care. *ever*.... So, when I am looking at their electronic charting, I'm looking at, did this really happen, is this true... you know, why did they chart on this sort of thing.
>
> Cooking Italian talked about excellence and patient-centeredness:
>
> They (students) do understand the inner workings of the program, where they need to go to document particular things to make sure that it's effective and to have appropriate documentation for that patient.... They can get efficient in doing it (EHR), but not to where it's efficient as far as having it done, but to the fact that it's efficient documentation to their particular client if it was a real document. Cause sometimes they just like to click on boxes and sometimes they think that more content that they have, that's acceptable, but I tell them that it's not about the quantity, it's about the quality of what you're writing.... That the documentation would be appropriate to their patient... the information applies directly to their patient, that they... made sure that they documented effectively on problems, that they show clear documentation of educating their patient, what else.... That they don't leave anything out is what I mean, that would be of concern.

Additionally, in implementing EHRs, professionalization can be understood as not only a dynamic, but also a dimensional process. In one aspect, professionalization shapes electronic documentation and in another, EHRs also shape and renew professionalization. According to Mechanic (2008), innovations, such as the EHR, can contribute to meeting professional expectations through making professionals' actions

more transparent, hold them accountable, and "facilitate peer-influence" (Mechanic, 2008, p. 350). The purpose of documentation and technology in health care ought to be to benefit the patient (Shine, 2013). As discussed earlier, when teaching nursing documentation, the faculty believed in solid professional expectations regarding students' electronic documentation, but also considered that EHRs were teaching students and holding nurses to professional expectations. Rose exclaimed:

> Well in the electronic... the EHR, I could monitor the student, I could see where they are at, what they are doing. On paper, I can't do that. I have to wait until they... they hand in the paperwork to me. Not only that, but I know when they start their stuff and it is documented that they did not hand their documentation in on time. I mean it would be their word against mine if it is on paper. OK. Because... what I'm saying is that they could say that well I handed in my assignment on time and... you might of forgotten that I handed it to you and now they can't do that. So they have to be timely. And this is *good* for nursing. Because in nursing you have to be *timely*. And this sets the tone for them and I think that it's a good thing. I'm all for it.

Deliverance stated:

> Cause the practicing nurses, they are complaining because they have a specific time to complete their documentation they can go in and change the time but when they go in through the back door, they see that OK this was inputted at twelve a clock, but the time was eight, so they complain. And when it comes to the medications if it's not given within that time frame, they can adjust it, but yet it's still showing that big red flashing light, so they are complaining. If it were

> paper, they are giving it at 12 but signing it off as given at 9, and that's the end of it. But now when they come to gather the data, then the manager will come and say well you know so and so you have late charting and so and so. And it has been happening for years, but now the electronic charting is catching up with them. They can go back and look at the data.

Laney contemplated:

> It's hard to have that authentic presence with the patient when you are so tied to the electronic health record and responsible for all the documenting because you are held accountable and everything is timed and nothing can be erased or changed or edited. So, the initial of what you did is still there. So, I think it's almost a big distraction and it has taken away from the bedside presence of the nurse. Another view is that it's a good thing that everything is being documented now the way it is because maybe not so good nurses can't get away with it now. So six of one or half dozen of the other.

Chester stated:

> .... For example doing medications, which I do with the students in the clinical and they see how to do it. Because it's all timed, cause you have to give medications at a certain time and if you pass that time they see the red flag and they also see how the nurses can get themselves into trouble too.

Laura discussed what she saw as outcomes of implementing EHRs in nursing academia:

> Better patient care. Because EHR will do that. Everything is there and its in electronic form and cannot be erased. Better patient care for everyone. For us as educators, I don't know... satisfaction. Satisfaction of leading the way. This is

> the new era and that's what we have to do. And because this is how it is now. There are not too many places in the Western world where we won't have EHR because it's everywhere. And it's better for patients. Safer way for practicing nursing.... I tell them that my name is there when we give meds. My name is everywhere. We give meds now and your name will be everywhere. So if you create something there, your name will be there and you have to take responsibility of what you put there and it must be very good. So you create a name for yourself. Either you be a very good nurse or not so good nurse, not so reliable nurse and you have to take responsibility. So, there are many, many teaching opportunities there that you can take.

The social process of professionalization is considered an essential outcome of nursing education (Faison, 2003). Nursing as a profession has traditionally paid much attention to the important role of education in the professional socialization of its new members. Students learn professional identity through their interactions with nurse faculty who are seen as the main socializers (Wade, 1999). The findings of this study support the social process of professionalization that has been a fundamental outcome of nursing education and explicates faculty as the main socializers in the process. The core category of professionalization together with the three main categories of valuing, interacting, and evolving explained the factors that influence faculty attitudes and behaviors of implementing EHRs in nursing academia. In teaching documentation using the EHR, the faculty in this study did not lose sight of their fundamental responsibilities as nurse educators. According to Prideaux (2011):

Good quality record keeping can improve the quality of patient care and for this reason, nurses must seek to ensure that their documentation practices meet high standards. Record keeping is not something separate from clinical care but is the documented reflection of the care provided and together, they co-exist as integral to holistic practice. Nurses must ensure that identified obstacles to record keeping practice are addressed and overcome to honor the duty of care they have toward their patients.

Significance of the Study for Nursing Knowledge

Grounded theory has the capability of advancing nursing knowledge through explaining the social process of a phenomenon. The significance of this grounded theory study was that it provided a substantive theoretical framework that explained the social process of professionalization that nurse faculty were experiencing when implementing electronic health records in nursing academia. It also filled the gap in the literature concerning faculty perspective of implementing EHRs in nursing academia. An abundance of literature investigating implementation of EHR exists from the viewpoint of staff nurses, and some literature exists from the viewpoint of nursing students; however, scholarly literature from the viewpoint of nurse faculty was scarce. The concepts of valuing, interacting, and evolving led to the core category of professionalization. This grounded theory framework provided an explanation of the critical factors that influenced faculty attitudes and behaviors about implementation of EHRs in nursing academia. Various implications for nursing education, practice, research, and health and public policy exists.

Implications for Nursing Education

Nurse faculty are facing an enormous challenge to incorporate EHRs in nursing academia without a framework to guide the process. In order to meet those challenges, it is of utmost importance to understand the faculty perspectives of the challenges, as well, as the strategies that are critical to their successful transition to using EHRs in nursing academia. The theoretical framework presented in this study can be used when planning to integrate EHRs into the nursing curriculum or to revise the existing implementation approach, in order to assure a successful transition to EHRs for both students and faculty.

Lack of knowledgeable nursing faculty or their lack of interest in embracing the use of electronic health record has been suggested as a significant barrier to implementing EHRs in nursing academia (Curry, 2011; Meyer et al., 2011; Taylor et al., 2010; Thompson & Skiba, 2008). Interestingly, these notions were not entirely supported by the findings of this study. While it was true that faculty did not fully *embrace* the EHR (meaning fully accepting or being entirely satisfied with it), the faculty in this study collectively *valued* the implementation of EHRs in nursing academia, believing that it was beneficial and important to use EHRs in academia. They unanimously recognized that EHRs were commonplace in today's nursing practice and that paper charting was "gone for *good*" and therefore perceived that implementing EHRs in nursing academia was not only relevant, but also necessary in order for the students to be prepared for practice upon graduation. The faculty were also quite knowledgeable of the benefits and the shortcomings of the EHRs. Their knowledge was evident through the categories that emerged.

The perception of the faculty in this study was that transitioning from teaching paper documentation to teaching documentation using EHRs was an experience of evolving. To move from something they were comfortable teaching to something new was not always easy, but it was something that was necessary. Although some faculty acknowledged the orientation and development programs before the EHR implementation in their academic institution, the true influential strategies that emerged were navigating the system and collegiality. Faculty perceived continued peer support as an important strategy to help them in the transition and practicing the EHR system over and over, was one of the most cited strategies that faculty used in order to make the transition successfully. The implication of this to nursing education is that perhaps intricate orientations and faculty development programs are not necessary the "do all" in helping faculty in implementing EHRs, but instead giving them ample time to practice the EHR system and consult with their peers could better facilitate their success.

Careful attention to the faculty's perceived challenges is also imperative for successful implementation of EHRs in nursing academia. The major challenges as experienced by the faculty in this study were time, difficulty with assuring and assessing students' critical thinking, and affording adequate feedback. Interestingly these three factors interrelated. In order to assure students' critical thinking, feedback was seen as key, but giving feedback and the entire grading process took considerable time. Academic administrators should consider these factors and assure that adjustments are made to support the faculty in the EHR implementation process. The strategies developed by the faculty in this study are worthwhile to consider, such as time for verbal feedback and ability to view the EHR together with the student.

The faculty may value the EHR implementation, but if the impact of the challenges is such that it becomes unmanageable to provide the feedback (online or in person) deemed essential to the students' learning, then nursing education has lost the opportunity for successful implementation of EHRs in nursing academia. The faculty in this study were balancing between valuing the implementation and the considerate determination it took to overcome challenges and develop strategies in order to provide what is best for the students. It was clear that faculty saw the value of implementing EHRs for the *student*, but more should be done to improve the process for the *faculty*.

Implications for Nursing Practice

The EHR will be the norm for students now entering nursing practice. Given the limitations of the clinical agency's means to educate students in using their EHRs, faculty are in a key position to assure that students will be adept to using EHRs in their practice and will have a more seamless transition from education to practice. The theoretical framework that emerged through this grounded theory study provided an explanation of how faculty are supported over the transitioning process, what resources and individual strategies, and what specific outcomes exist that improve the process of faculty implementing the electronic health record in nursing academia.

The goal of electronic health records is to make health care safer and improve patient outcomes. Nurses have a vital role in safe utilization of EHRs. A significant finding of this study was that faculty were keenly aware of this. In fact, professionalization, which encompassed accountability, patient-centeredness, and excellence, was the overarching theme that was revealed through the participants' narratives. Another significant finding was that faculty in this study viewed collaboration

both with the staff nurses and through having access to the agency's EHR as being considerably helpful in teaching electronic documentation to students. Although students having their own access was seen as the "ideal," simply granting access to the faculty to administer medications and have the ability to navigate the system together with the students was cited by many, as supportive of the students' learning in addition to using the simulated EHR.

Implications for Nursing Research

Currently, there is a lack of research in implementing electronic health records in nursing academia particularly from the faculty viewpoint. No framework currently exists, specific to the process of nursing faculty transitioning from teaching paper-based nursing documentation to utilizing the electronic health record to guide further research. The theory that emerged through this grounded theory study can be used as a framework to guide further research in implementing EHRs in nursing academia, particularly through the quantitative approach. Additionally, the theory that emerged may aid in development of an instrument for additional research. The findings of this study encourage additional comparative research.

Implications for Health and Public Policy

The IOM (2010b) calls for collaboration between schools of nursing and accrediting bodies, as well as health care agencies, in order to ensure that nursing curricula includes competencies necessary for graduates to be able to meet the needs of current and future patient populations. The faculty in this study viewed the collaboration with the practice partners as vital in order to facilitate teaching nursing students documentation using the electronic health record. The results point that efforts ought to

be made to assure all clinical faculty have access to the agencies EHRs and ideally the students as well. Financial support and resources are also needed in order to make the necessary adjustments that are required in order to appropriately support the faculty in the EHR implementation process.

Faculty in this study valued the implementation of EHRs in nursing academia and were committed to creating a nursing workforce that will practice nursing with integrity in the technology afflicted health care environment. However, this was not met without challenges and efforts to overcome them. The National League for Nursing (NLN, 2015) in their newest vision for "the changing faculty role in preparing students for the technological world of healthcare" (p. 1) recognizes the fundamental responsibility that nurse educators have in preparing today's nursing workforce and asks how can students' learning experiences, such as, interactions with EHRs be increased. Understanding gained from this study provided insight into the challenges met by faculty, the strategies they used, and the support they need in implementing EHRs in nursing academia. Understanding the factors that influence faculty's ability to successfully implement EHRs in academia provides a vision and guidance in creating guidelines and policies for collaboration of nurse educators, clinical agencies, professional organizations, such as the NLN, and other stakeholders, such as the Joint Commission and the Institute of Medicine.

Strengths and Limitations

There were both strengths and limitations to this qualitative grounded theory study. One of the strengths was that it provided a voice to the faculty participants and allowed them to freely discuss their attitudes and behaviors related to implementing EHRs in nursing academia. Qualitative research allows seeing the world through the

participants' eyes (Munhall, 2012). “Qualitative research is known for giving voice to people, to hearing people's own personal narrative, and using the language of our participants in research” (Munhall, 2012, p. 4). In reporting the findings, narratives were used to give life to the participants’ experiences and facilitate understanding their world. The findings of this study, which were grounded in the participants’ voices, provided a deep understanding of the social process of faculty transitioning to using EHRs in academia and the challenges that were met, as well as the strategies that were used in the process. A substantive theory emerged. It also filled a gap in literature. Other than entirely missing the male faculty voice, the demographic representation of this study was comparable to the nationally reported demographics (NLN, 2009).

An additional strength was the rigor of this study. The credibility of the study was enhanced through the appropriate methods of data collection via individual and focus group interviews and that the data collection continued until data saturation. Other ways that credibility was assured were use of probes to elicit data during interviews, member checking, thick descriptions of the phenomenon, frequent debriefing with the dissertation chair, and relating study findings to preceding research. Dependability was enhanced through overlapping methods of individual and focus group interviews, code-recode consistency, as well as through the detail report that was provided of the processes within the study. Confirmability was enhanced by bracketing through journaling, as well as through frequent peer review and detailed description of the methodologies. Collecting background data via demographic questionnaire and detailed description with participant quotations enhanced transferability of this study.

The limitation of this study included that all participants were from the same academic institution thus deducing the study's relevance to another setting or context. It would have been interesting to have faculty participants from a variety of academic institutions. The lack of male faculty participants also adds to the limitations. Another limitation to this study was that all participants' experience of implementing EHRs in nursing academia was with the same simulated EHR system. However, 13 participants also had access to an agency's EHR, and in addition, 14 participants had used EHRs in their clinical practice. The researcher being a novice and thus possibly lacking objectivity was also a limitation; however, the dissertation committee provided expert guidance. Lastly, the possibility that all faculty participants may not have been entirely honest in their responses may be considered as a potential limitation.

Recommendations for Future Study

Additional research, both qualitative and quantitative, is needed on this phenomenon. Replicating this study in other geographic areas and with participants from variety of academic institutions would add to the knowledge that was gained from this research. Expanding on the plurality of the sample and settings through conducting similar studies in other areas with participants from multiple institutions across United States would serve to expand the knowledge gained from this study, and both confirm the findings of this study and enhance its transferability.

Through an extensive literature search, it was concluded to the best of the researchers knowledge that no theory existed specific to the process of faculty implementing EHRs in nursing academia. The theory that emerged through this grounded theory study filled the gap in the literature. One of the first recommendations

when a new theory emerges is to test it empirically, which would enhance substantiating this grounded theory model. "A theory that is grounded in data should be recognizable to participants, and although it might not fit every aspect of their cases, the larger concepts should apply" (Strauss & Corbin, 1998, p. 161).

A recommendation would also be to develop an instrument, informed by the categories and subcategories that emerged from this study, to be used in future quantitative studies. No instrument exists to the best of this researchers knowledge specifically intended to measure faculty's experience of implementing EHRs in academia. A tool developed based on the constructs that were found in this study, could be first pilot tested, then further developed and ultimately used in future quantitative studies of faculty implementing EHRs in nursing academia. To increase the content and construct validity of the instrument, opinion from panel of experts should also be sought.

The study findings revealed that practicing using the EHR and peer-support were fundamental strategies in faculty implementing EHRs in nursing academia. Pilot programs could be developed that consider time for practicing the system and continuous peer-support. The effectiveness of such programs could then be evaluated. In addition, this study found that nurse faculty appreciated collaborative efforts with partnering agencies. Therefore, a trial partnership program could be developed and its effectiveness then be evaluated. An interesting experiment would also be utilizing mobile devices, such as an iPad™ during clinical rotations with both faculty and students, in order to further investigate the emerged interacting construct from this study. The impact of the intervention could then be measured. Results from these studies could subsequently be

used to further develop such programs and consequently enhance the EHR implementation in nursing academia and its integration to the nursing curriculum.

Summary and Conclusions

This chapter presented the meaning of the study findings, as well as, related the study findings to findings from preceding research. Significance of the study to nursing knowledge was established and the implications for nursing education, practice, research and health and public policy were presented. Strengths and limitations of the study were also discussed and recommendations were made for further research on the phenomenon. The purpose of this qualitative study was to develop a substantive theory of the process of faculty transitioning to teaching nursing documentation with the electronic health record and the factors that influence faculty in the transition. A grounded theory method, with the Strauss and Corbin (1998, 2008) approach, was used to explore the critical factors that influenced faculty's attitudes and behaviors about implementation of electronic health records in nursing academia.

Individual interviews with purposive sample of 15 nurse faculty participants, as well as, a focus group interview with six faculty participants were used to collect data. The three categories that emerged from the data were valuing, interacting, and evolving. Professionalization emerged as the core category that everything else related to and that was able to explain the social process that the faculty were engaged in implementing EHRs in nursing academia. The conceptual model that emerged, illuminated the basic social process of professionalization, explained the categories and subcategories, as well as provided an explanation of the relationships among them. The constructs and the social process of professionalization were compared to findings from preceding research,

which supported the study findings. Professionalization was conceptualized as the social process that provided an understanding of the factors that influenced faculty attitudes and behaviors about implementation of electronic health records in nursing academia. The theoretical framework of professionalization that emerged through this grounded theory study can be used to improve the process of implementing electronic health records in nursing academia, assure valuable EHR experiences for students during their studies, graduate nurses who are competent in using EHRs, and ultimately make health care safer and improve patient outcomes through envisioned utilization of EHRs.

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APPENDIX A

BARRY IRB APPROVAL LETTER

Barry University
Division of Academic Affairs

[redacted]

Research with Human Subjects
Protocol Review

Date:	March 24, 2015
Protocol Number:	150310
Title:	Critical Factors That Influence Faculty Attitudes and Behaviors about Implementation of Electronic Health Records in Nursing Academia
Meeting Date:	March 18, 2015
Researcher Name:	Ms. Ilse Wallace
Address:	6664 Houlton Circle Lake Worth, FL 33467
Faculty Sponsor:	Dr. Jessie Colin

Dear Ms. Wallace:

On behalf of the Barry University Institutional Review Board (IRB), I have verified that the specific changes requested by the convened IRB on March 18, 2015 have been made.

It is the IRB's judgment that the rights and welfare of the individuals who may be asked to participate in this study will be respected; that the proposed research, including the process of obtaining informed consent, will be conducted in a manner consistent with requirements and that the potential benefits to participants and to others warrant the risks participants may choose to incur. You may, therefore, proceed with data collection.

As principal investigator of this protocol, it is your responsibility to make sure that this study is conducted as approved by the IRB. Any modifications to the protocol or consent form, initiated by you or by the sponsor, will require prior approval, which you may request by completing a protocol modification form.

It is a condition of this approval that you report promptly to the IRB any serious, unanticipated adverse events experienced by participants in the course of this research, whether or not they are directly related to the study protocol. These adverse events include, but may not be limited to, any experience that is fatal or immediately life-threatening, is permanently disabling, requires (or prolongs) inpatient hospitalization, or is a congenital anomaly cancer or overdose.

The approval granted expires on March 31, 2016. Should you wish to maintain this protocol in an active status beyond that date, you will need to provide the IRB with and IRB Application for Continuing Review (Progress Report) summarizing study results to date. The IRB will request a progress report from you approximately three months before the anniversary date of your current approval.

If you have questions about these procedures, or need any additional assistance from the IRB, please call the IRB point of contact, Mrs. Barbara Cook at [redacted] or send an e-mail to LBacheller@mail.barry.edu. Finally, please review your professional liability insurance to make sure your coverage includes the activities in this study.

Sincerely,

Linda Bacheller, Psy.D., J.D.
Chair, Institutional Review Board
Barry University
Box Psychology
11300 NE 2nd Avenue
Miami Shores, FL 33161

Cc: Dr. Jessie Colin

APPENDIX B

INFORMED CONSENT FORMS

Approved by Barry University IRB
Date: MAR 2 4 2015
Signature: Linda LaRocella, PhD, JD

Institutional Review Board
Protocol Form
February, 00 8

APPENDIX B
INFORMED CONSENT FORMS: INDIVIDUAL AND FOCUS GROUP
Barry University
Informed Consent: Individual Interview

Your participation in a research project is requested. The title of the study is: **Critical factors that influence faculty attitudes and behaviors about implementation of electronic health records in nursing academia**. The research is being conducted by Ilse M. Wallace, a doctoral student in the College of Nursing and Health Sciences, at Barry University, and is seeking information that will be useful in the field of nursing education. The purpose of this research is to explore the factors involved in implementing nursing documentation with the electronic health record from the faculty perspective. In accordance with the purpose, the following procedures will be used: An individual face-to-face semi-structured interview and completion of a demographic survey. It is anticipated that the number of participants will include a maximum of 25 faculty.

If you decide to participate in this research, you will be asked to do the following: Select a pseudonym and participate in one interview, which will be audio taped and will last one hour or less. You will also be asked to fill out a demographic questionnaire. A follow up interview will be conducted by phone, in person or via e-mail, approximately week after the first interview and will last 30 minutes or less in order to confirm the information obtained in the first interview. The total time commitment is approximately 90 minutes.

Your consent to be a research participant is strictly voluntary and should you decline to participate or should you choose to drop out at any time during the study, there will be no adverse effects on your employment.

There are no known risks to you. There are no direct benefits to you. A gift card in the amount of $25 will be given to you as a gesture of appreciation for participating in this study. You will receive the gift card in the first interview, whether you choose to complete it or not.

As a research participant, information you provide will be held in confidence to the extent permitted by law. Any published results of the research will refer to pseudonym that you have chosen and no names will be used in the study. Data will be kept in a locked file in the researcher's office. The audiotapes will not have identifiers and will be destroyed after the follow up interview. Your signed consent form will be kept separate from the data. All written data will be kept indefinitely.

If you have any questions or concerns regarding the study or your participation in the study, you may contact me, Ilse M. Wallace, at [redacted] my supervisor, Dr. Colin, at (305) 899-3830, or the Institutional Review Board point of contact, Barbara Cook, at (305) 899-3020. If you are satisfied with the information provided and are willing to participate in this research, please signify your consent by signing this consent form.

Voluntary Consent

I acknowledge that I have been informed of the nature and purposes of this experiment by Ilse M. Wallace and that I have read and understand the information presented above, and that I have received a copy of this form for my records. I give my voluntary consent to participate in this experiment.

_____ _____
Signature of Participant *Date*

_____ _____
Researcher *Date*

Approved by Barry University IRB

Date: MAR 2 4 2015

Signature: [signature]

Institutional Review Board
Protocol Form
February, 00 9

Barry University
Informed Consent: Group Interview

Your participation in a research project is requested. The title of the study is **Critical factors that influence faculty attitudes and behaviors about implementation of electronic health records in nursing academia**. The research is being conducted by Ilse M. Wallace, a doctoral student in the College of Nursing and Health Sciences at Barry University, and is seeking information that will be useful in the field of nursing education. The purpose of this research is to explore the factors involved in implementing nursing documentation with the electronic health record from the faculty perspective. In accordance with the purpose, the following procedures will be used: A focus group semi-structured interview and completion of a demographic survey. It is anticipated that the number of participants will be a maximum of seven faculty.

If you decide to participate in this research, you will be asked to do the following: Select a pseudonym and participate in a focus group interview, which be audio taped and will last one hour or less. You will also be asked to fill out a demographic questionnaire. The audiotapes will be transcribed by the researcher.

Your consent to be a research participant is strictly voluntary and should you decline to participate or should you choose to drop out at any time during the study, there will be no adverse effects on your employment.

There are no known risks to you. There are no direct benefits to you. A gift card in the amount of $25 will be given to you as a token of appreciation for participating in this study. You will receive the gift card in the interview, whether you choose to complete it or not.

As a research participant, information you provide will be held in confidence to the extent permitted by law. Although the researcher guarantees to keep all information obtained from the group confidential, due to the nature of groups confidentiality by group members cannot be guaranteed. All focus group members are asked to respect the privacy of other group members. Any published results of the research will refer to pseudonyms, which have been chosen by the participant and no names will be used in the study. Data will be kept in a locked file in the researcher's office. The audiotape will be destroyed after transcription. Your signed consent form will be kept separate from the data. All written data will be kept indefinitely.

If you have any questions or concerns regarding the study or your participation in the study, you may contact me, Ilse M. Wallace, at [redacted] my supervisor, Dr. Colin, at (305) 899-3830, or the Institutional Review Board point of contact, Barbara Cook, at (305) 899-3020. If you are satisfied with the information provided and are willing to participate in this research, please signify your consent by signing this consent form.

Voluntary Consent

I acknowledge that I have been informed of the nature and purposes of this experiment by Ilse M. Wallace and that I have read and understand the information presented above, and that I have received a copy of this form for my records. I give my voluntary consent to participate in this experiment.

_____ _____

Signature of Participant *Date*

_____ _____

Researcher *Date*

APPENDIX C

LETTER OF REQUEST FOR ACCESS

LETTER OF REQUEST FOR ACCESS

Ilse M. Wallace, MS, RNC-OB
[redacted]

Date
Name and address of Dean/Director of Nursing Program
Dear _____,

My name is Ilse M. Wallace and I am a doctoral student in the College of Nursing and Health Sciences at Barry University. I am currently conducting a study entitled "Critical Factors that Influence Faculty Attitudes and Behaviors about Implementation of Electronic Health Records in Nursing Academia". The study is for my dissertation in partial fulfillment of my PhD requirements. I am requesting your permission to distribute a flyer to the nurse faculty requesting their participation in the study. The purpose of this research is to explore the factors involved in implementing nursing documentation using the electronic health record from the faculty perspective.

I am writing to you to ask for your permission and assistance in gaining access to nurse faculty of your nursing program. Upon Barry University IRB approval, I will be sending you my recruitment flyer to be sent to all adjunct and full time nurse faculty members in your nursing program. The faculty may choose to contact me in accordance with the phone number and email provided on the flyer. Participation in this study is voluntary. All of the interviews will be face-to-face and will last no more than one hour. The times and locations will be at the discretion of the participants.

If you have any questions or concerns, please contact me, Ilse M. Wallace at [redacted] my supervisor, Dr. Jessie Colin at [redacted] or the Barry University Institutional Review Board point of contact, Barbara Cook at [redacted] Please let me know at your earliest convenience if I may have your permission and assistance with this nursing study. You may send the letter of grant of access to my e-mail address [redacted] or to my US Postal address as listed above.

Thank you for your consideration of access and assistance to recruit volunteers for this study.

Sincerely,

Ilse M. Wallace, MS, RNC-OB
Principal Investigator

APPENDIX C

LETTER OF GRANT OF ACCESS

Barry University

College of Nursing and Health Sciences

[redacted]

Barry University

LETTER OF GRANT OF ACCESS

Date: 3/12/15

Ilse M. Wallace, MS, RNC-OB
6664 Houlton Circle
Lake Worth, FL 33467
561-827-1089

To Whom It May Concern,

Dear Ms. Wallace,

On behalf of the nursing program at Barry University, upon the Barry University IRB approval, permission will be granted to access the nursing faculty for the qualitative study entitled, Critical Factors that Influence Faculty Attitudes and Behaviors about Implementation of Electronic Health Records in Nursing Academia, conducted by Ilse M. Wallace, MS, RNC-OB, Principal Investigator.

Sincerely,

Mary Colvin

Mary K Colvin PhD, RN, CNE
Assistant Professor
Undergraduate Program Director

LETTER OF GRANT OF ACCESS

Date: 3/12/15

Ilse M. Wallace, MS, RNC-OB
[redacted]

To Whom it May Concern,

Dear Ms. Wallace,

On behalf of the nursing program at South University, upon the Barry University IRB approval, permission will be granted to access the nursing faculty for the qualitative study entitled, Critical Factors that Influence Faculty Attitudes and Behaviors about Implementation of Electronic Health Records in Nursing Academia, conducted by Ilse M. Wallace, MS, RNC-OB, Principal Investigator.

Sincerely,

Judith Drumm DNS, RN, CPN
Professor Nursing South University

LETTER OF GRANT OF ACCESS

Date: 3/26/15

Ilse M. Wallace, MS, RNC-OB

[redacted]

Dear Ms. Wallace,

On behalf of the nursing program at Palm Beach State College, upon the Barry University IRB approval, permission will be granted to access the nursing faculty for the qualitative study entitled, Critical Factors that Influence Faculty Attitudes and Behaviors about Implementation of Electronic Health Records in Nursing Academia, conducted by Ilse M. Wallace, MS, RNC-OB, Principal Investigator.

Sincerely,

Lawrence "Buddy" Herrington, MSN, RN
Nursing Director
Palm Beach State College
herrinbd@palmbeachstate.edu
561-868-3437

[redacted]

Palm Beach State College
Research/Study Approval

Name: Ilse Wallace Date: 3/24/15

Title: Associate Professor

Cluster/Department: Health Sciences/Registered Nursing

Title of research/study: Critical Factors That Influence Faculty Attitudes and Behaviors about Implementation of Electronic Health Records in Nursing Academia

Purpose of study: The purpose of the research is to explore the factors that involved in implementing nursing documentation with the electronic health record from the faculty perspective.

Level I Approval: (cluster/department administrator)

Name: JACQUELINE ROGERS Title: DEAN, HEALTH SCIENCES & PUBLIC SAFETY

Signature: Jacqueline Rogers Date: 3/25/15

Level II Approval: (provost)

Name: Maria Vallejo Title: Provost

Signature: Maria Vallejo Date: 3/25/15

Level III Approval: (Institutional Research & Effectiveness)

Name: Jennifer Campbell Title: 3/26/2015

Signature: Jennifer Campbell Date:

5

APPENDIX D

RECRUITMENT FLYER

Nurse faculty volunteers are invited
to participate in a study of

faculty's perceptions of implementing Electronic Health Records (EHR) in nursing academia

Two groups of volunteers are needed:

To qualify, you should meet the following criteria:

Group one will be nurse faculty who have taught nursing documentation with the EHR as part of a clinical course. You will be asked to participate in two interviews. The first will be face-to-face and will last up to one hour and the second up to 30 minutes via phone or e-mail. A maximum of 25 volunteers are needed.

- Full-time or adjunct faculty teaching in an associate or baccalaureate degree nursing school
- Have taught a clinical course and used EHR to teach documentation within the last year.
- Transitioned to teaching with the EHR within the last 5 years

Faculty who have **not** used EHR as part of a **clinical course** are not included in the study

Group two will be nurse faculty who have taught nursing documentation with the EHR as part of a clinical course at least for two years. You will take part in a focus group interview lasting up to one hour. A maximum of 7 volunteers is needed.

- Full-time or adjunct faculty teaching in an associate or baccalaureate degree nursing school
- Have taught a clinical course and used EHR to teach documentation within the last year.
- Transitioned to teaching with the EHR within the last 5 years
- Have been teaching with the EHR at least 2 years

Each volunteer who participates will receive a $25 gift card

If you would like to participate please contact:

Principle Investigator: Ilse M. Wallace, MS, RNC-OB*
[redacted]

Faculty Supervisor: Dr. Colin, Barry University
[redacted]

Barry University IRB Contact: Barbara Cook
[redacted]

*Ilse Wallace is a doctoral student
at Barry University, Florida

APPENDIX E

INDIVIDUAL INTERVIEW QUESTIONS

Grand Tour Question:

1. What are your experiences and feelings about you implementing electronic health records in nursing academia?

Follow-Up Questions/Prompts:

1. What are the critical factors that you believe helped or hindered your transition from teaching paper-based documentation to using the electronic health record?
2. What are some challenges or facilitators of you implementing electronic health records in teaching documentation?
3. How would you describe your transition to the electronic health records?
4. What are some strategies or interventions that you used before, during, and after implementing the electronic health record that helped you make the transition successfully?
5. Describe any outcomes of implementing the electronic health record in nursing academia.
6. Is there anything else that you would like to tell me about your experiences of implementing electronic health records as nurse faculty?

APPENDIX F

GROUP INTERVIEW QUESTIONS

Grand Tour Question:

1. What are your experiences and feelings about you implementing electronic health records in nursing academia?

2. Can you comment on the themes that emerged from the individual interviews?

APPENDIX G

DEMOGRAPHIC QUESTIONNAIRE

1. What is your gender?
    1. Male
    2. Female

2. What is your age?
    _____

3. What is your primary language?
    1. English
    2. Spanish
    3. Portuguese
    4. French
    5. Creole
    6. Other

4. Do you speak another language?
    1. English
    2. Spanish
    3. Portuguese
    4. French
    5. Creole
    6. Other

5. What is your race?
    1. American Indian or Native American
    2. Arab
    3. Asian or Pacific Islander
    4. Black or African American
    5. Caucasian or White
    6. Hispanic/Latino
    7. Multiracial
    8. Would rather not say
    9. Other _____

6. What is your ethnicity?
    1. American
    2. Canadian
    3. Caribbean
    4. Jamaican
    5. Haitian
    6. European
    7. Russian
    8. Middle-Eastern
    9. South-American
    10. Japanese
    11. Chinese
    12. Other_____

7. What is the highest level of your education?
    1. Bachelor's degree (go to question #9)

2. Master's degree
3. Doctorate degree

8. Which is your highest nursing degree?
   1. Master's in Nursing Education
   2. Master's in Nursing Administration
   3. Master's in Public Health
   4. Nurse Practitioner (ARNP)
   5. Certified Nurse Midwife
   6. Clinical Nurse Specialist
   7. EdD
   8. DNP
   9. DNSc
   10. PhD
   11. Other _____

9. How many years have you been a registered nurse?

   _____

10. How long have you worked in Nursing Education?

    _____

11. Are you currently working in a health care setting such as hospital, home health, public health, or private practice?
    1. Yes
    2. No
    3. Not currently, but have recently _____

12. How many years of experience do you have working with electronic health records in clinical practice?

    _____

13. How many years of experience do you have teaching documentation to students using electronic health records?

    _____

14. How is electronic health record documentation taught to students in your academic institution?

    1. Simulated electronic health record _____
    2. Exposure during clinical rotations
    3. Academia-Agency partnership in which students have their own access to the agency's EHR
    4. Other _____

VITA

Ilse M. Wallace, MS, RNC-OB

January, 19, 1971	Born - Helsinki, Finland
1998	BSN, Florida Atlantic University Boca Raton, FL
1998-2005	Staff Nurse, St. Mary's Medical Center West Palm Beach, Florida
2005-2008	Staff Nurse, Palms West Hospital Loxahatchee, FL
2006-2012	Adjunct Faculty in Nursing, Palm Beach State College Lake Worth, FL
2011	MS, Nursing Education Florida Atlantic University Boca Raton, FL
2012-Present	Associate Professor, Nursing Palm Beach State College Lake Worth, FL
2014-Present	Department Chair, Nursing Palm Beach State College Lake Worth, FL
Professional Organizations	Sigma Theta Tau Honor Society American Nurses Association Florida Nurses Association National League for Nursing Delta Epsilon Iota Honor Society

PUBLICATIONS

Wallace, I. (2014). Is patient confidentiality compromised with the electronic health record? A position paper. *Computers, Informatics, Nursing, 33*(2), 58-62. doi:10.1097/CIN.0000000000000126