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Timing is everything! With the explosion of the use and incorporation of simulations in nursing education today, this book, *Simulation Scenarios for Nurse Educators: Making It REAL!* could not have come at a better time. The 26-chapter book provides step-by-step guidelines for nursing faculty to design, develop, and implement clinical simulation scenarios in diverse settings, with diverse patients, and for different levels of students from the novice in a fundamentals course to the senior level critical care or capstone course.

The passion, caring, and inspiration of the authors is felt and delivered in each and every chapter. The book is based on the authors’ personal experiences regionally and nationally with nursing faculty who have also experienced the frustrations, growing pains, and lack of knowledge about where to start when planning to incorporate simulations into a nursing course or curriculum. Compiling all of the authors’ lessons learned, teaching-learning strategies, and in-depth research and exploration of their topics, this book is an excellent guide for nursing faculty just getting started with simulations or is validation for faculty who are already using this pedagogy.

Once you begin to read the book, you will not be able to put it down. As a first step in writing this foreword, I thought I would briefly scan through the chapters to have a view of the overall book and its components. However, I found the brief scan turned in to reading every page word for word. Many times, I nodded my head in agreement and smiled as I read material to which I could strongly relate.

Some of the highlights of the book are the beginning chapters by the co-editors on simulation pedagogy, integrating a simulation-focused pedagogy into the nursing curriculum, faculty learning communities, and how to integrate simulations into diverse settings. Various authors then provide chapters focusing on knowledge, strategies, and recommendations on how to implement simulations in different types of course or clinical settings. For example, if you are in doubt about how simulations can be incorporated in a physical assessment course, one chapter provides ideas, scenario objectives, and examples of how the simulation pedagogy can be used in this type of setting. The entire spectrum of courses from fundamentals, health assessment, and medical-surgical nursing courses, to more complex levels such as trauma resuscitation are discussed, with authors providing specific examples, simulation scenarios that include patient information, simulation objectives, preparation lists, and other information on all necessary components to develop and implement the simulation successfully. Various chapters address the diverse patient population including geriatric, pediatric, trauma, obstetric, and diabetic patients in terms of simulations that can be designed and implemented in those contexts. Finally, the last chapter of the
Foreword

book presents a cutting edge vision of the future of simulations which is appropriate since this teaching-learning pedagogy is changing almost on a daily basis affecting our nursing education and ultimately student learning and outcomes.

Timing is everything. As nursing leaders call for education reform to manage the shortage of clinical learning experiences, the lack of clinical sites, shortage of nurse educators, and the need to better prepare students for clinical decision making in a complex health care environment, this book provides practical solutions to begin the transformation of clinical education. The creativity and innovation demonstrated by the authors in this book on simulations provide a wonderful start to meeting these challenges. Making it real today is an important first step in contributing to tomorrow’s future.

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Preface

Nursing education is situated in a unique moment in time. In what has been called the perfect storm (Hinshaw, 2008), a faculty shortage has collided with a nursing shortage, and the two have resulted in challenges for nursing educators. Additionally, new generations of techno-savvy nursing students are before us in our classrooms. In the face of this challenge, nursing educators have the opportunity to create a new paradigm for teaching that reflects student need for interactive technology. Nurses have always responded to crises throughout time with creativity and innovation, and the same is true today. By complementing our traditional teaching with simulation, we, as educators, are addressing our need to do more with less. In making simulation real, we can deliver our teaching in an engaging yet effective manner, thereby transforming nursing education through a simulation-based pedagogy.

This book is divided into three parts. Part I provides an overview of the integration of simulation into nursing curricula, options for building a learning resource center, the description of innovative methods for faculty development related to integrating technology into the curriculum, and the role of health communication. Part II presents a collection of 17 exemplars containing actual scenarios in multiple clinical areas and testimonies of practicing faculty in a variety of settings at different levels of nursing education. It is meant to encourage nursing faculty that simulation development and incorporation into the curriculum is feasible and fun. The book provides concrete information about the use of simulation in a variety of programs, courses, and schools with flexible simulator uses, including live actors, static, and low-, medium-, and high-fidelity manikins. The practical applications are for those who are interested in taking first steps toward incorporating simulation or for those who have begun but want to expand beyond a typical medical-surgical, intensive care, and trauma focus. This book will encourage the development of critical thinking, clinical reasoning, and clinical judgment as well as caring, competent, safe practitioners. Finally, hints for suspending reality and “making it real” for students and faculty are incorporated throughout the book.

Finally, Part III explores future directions for simulations in nursing education. Given the work of the co-editors with the chapter authors and faculty in their own institutions, a framework of simulation learning was created and is provided in the final chapter of the book.

A template for creating scenarios is provided throughout the book, including the following:

- Student preparation materials, such as suggested readings, skills necessary for scenario enactment, and Web sites with more information
Forms to enhance the realness of the scenario, such as patient data forms, patient medication forms, and assessment tools (or Web sites where they can be acquired)

Checklists, such as health communication checklists to use in the creation of scenarios, evaluation criteria checklists for assessing student performance in scenarios, and debriefing guidelines.

The intent is to provide faculty with a strong basis to run multiple scenarios in a variety of clinical specialties geared at different learning levels and with different learning objectives. The supplemental materials provide easy access to materials for faculty and student use.

This long-awaited book provides real life stories of faculty in the trenches providing the light at the end of the tunnel to the sometimes challenging, but worthwhile, journey of simulation integration!

Reference

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To all those who contributed time and effort in creating their scenarios for this book, we thank you from the bottom of our hearts for sharing your knowledge and expertise in describing your challenges and victories using simulation. There are numerous individuals who provided support. In grateful recognition, to name a few at Fairfield University: the administration, especially Dean Jeanne Novotny whose vision for the school has been an inspiration; Lab Director Diana Mager whose expertise in organizing, running, and overseeing the lab make this all possible, and colleague and co-director Phil Greiner; whose insight in so many areas has led to this greater vision; the School of Nursing Advisory Board, without whom this project would not have come to fruition, especially the chair Nancy Lynch, whose guidance and tireless perseverance has led to marvelous outcomes, and major donor Robin Kanarek, whose passion for nursing provides endless encouragement; Media Department Manager Kirk Anderson, who is always just a phone call away; the Center for Academic Excellence, especially Larry Miners, whose support for faculty development has been key to our progress, and the Computing and Network Services departments, as well as the students who have patiently worked with us throughout the years.

At Western Connecticut State University, grateful thanks are extended to Lorraine Capobianco and Kevin Koshel, whose work within University Computing have set the foundation for simulation; President James Schmotter, Provost Linda Rinker, and Dean Lynne Clark whose leadership and support have lead the way; Barbara Piscopo, who encouraged and supported the pursuit of simulation; Karen Crouse, who creatively and enthusiastically has embraced simulation in nursing education; Undergraduate Coordinator Deb Lajoie, as well as Kathy Barber and the Learning Resources Committee, who truly do all the work supporting simulation, and to the WCSU class of 2008 who inspired and created the student generated senior scenarios.

We cannot possibly name them all.
Setting the Foundation for Simulation
Introduction

The Challenge of Teaching in the 21st Century

This book has been written related to our personal experiences regionally and nationally with audiences of nursing faculty who have expressed frustration, consternation, anxiety, and bewilderment about “where to start” with simulation, especially with human patient simulators. We have been privileged to be here at the start of simulation, with the inherent frustration of explaining to administration and fellow faculty the potential and vision that this innovative learning experience can provide for nursing students.

It is the hope of the editors that the simulations included in this text will provide nurse educators with a place to start—a template for the creation of their own broad and relevant experiences in the classroom and clinical settings. It is paramount that we share our passion for the process and our strong belief that all faculty can contribute, at whatever level of simulation, to this process. Yes, there are gaps in the literature and challenges expressed in the literature; yes, faculty struggles to meet the new demands of this technology within the realm of faculty shortages and workload. Yet the potential benefits to faculty and students
are clear, especially by enhancing critical thinking beyond protocol and critical pathways. Oftentimes, it is an astute, expert nurse who, in noting subtle changes in his or her patient, enacts the kind of care that saves the patient’s life. Nurses are the frontline providers of care.

Simulation enters here by allowing for reflection on all aspects of care. The built-in debriefing period, which encourages reflection on thoughts, actions, and outcomes, also leads to better transfer of content to practice and more versatile thinking processes for future application. In addition, the faculty role of mentor and facilitator in this process combines faculty expertise with student innovation. It is a learning process for all, which overall improves methods of teaching and learning.

Role of Simulation in Nursing Education

Nurse educators and researchers now recognize simulation as a valuable general tool for gaining knowledge (Alinier, Hunt, & Gordon, 2003; Childs & Sepples, 2006; Henneman & Cunningham, 2005; Jeffries, 2007; Roberts & McGowan, 2004). The availability of high-fidelity technology at reasonable cost, and the availability of funds to purchase this equipment, has resulted in widespread acquisition across the country. Some faculty, though, have reported to us that on delivery, these human patient simulators may remain in a box, unused. Other faculty, who have had the benefit of preassembly and attending 1- to 2-day workshops, need encouragement and inspiration to fully implement simulation within their individual courses. When attending simulation conferences, it appears that everyone is incorporating and using simulation (or has bought the equipment). But when you talk to faculty, they are confused, overwhelmed, and frustrated with trying to write and implement scenarios into their individual courses.

One only needs to watch a group of students in a simulation to fully appreciate the teaching and learning potentialities at hand. After all, simulation prompts positive results. However, the research for assessment and evaluation for nursing education falls behind the medical literature, and has not been fully tested and incorporated. For example, in a study of the use of clinical laboratories in Victoria, Australia (with site visits, interviews, and curricula review), researchers found that use of the laboratories was based on past experience, tradition, and resources rather than evidence (Wellard, Woolf, & Gleeson, 2007). Otherwise, while research on simulation in nursing is ongoing, it is still in its initial stages, just beyond description, and is still in need of synthesis. Of course, the benefits of simulation have been well documented by the National League for Nursing (NLN)/Laerdal simulation study (Jeffries & Rizzolo, 2005), and large projects have examined the benefits and best practice for implementation. But there is much more to learn.

On a broader level, administration finding the money for providing the necessary resources (faculty development, equipment purchase, building renovations, faculty time, etc.) does not transfer immediately into less faculty workload. In contrast, it often requires more investment of time and resources up front to get to the “work smarter, not harder” phase. One strategy has been to assign already overburdened lab directors with the “task” of incorporating simulation for faculty. Whether in static modules as testing prior to entering clinical, skill-based
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task training or end-point competency testing, the actual development and running of the scenarios is parceled out to lab staff, information technology personnel, and others. As this process may not directly involve faculty, their valuable educational and clinical expertise is more often overlooked. Another strategy allows for individual faculty to initiate simulation within their own teaching load in single courses. Faculty find this process time-consuming and complex when starting without help or guidance of those more experienced in simulation (Nehring & Lashley, 2004). Currently, experts in simulation are few and far between.

We feel that simulation offers an innovative approach that complements and easily integrates into existing nursing curricula, addressing the needs of a new generation of nurses and a society with increasingly complex health care needs. In order to fully appreciate the incorporation of simulation and the driving forces behind this movement, one needs to recognize that challenges include understanding issues facing nursing education, the influence of technology on theoretical and conceptual aspects of nursing education, learning in the digital culture, and the challenge of suspending belief to make simulations real. In order for a transfer of knowledge to occur, the student’s role in the simulation needs to be as authentic as possible.

Some of the issues facing nursing education include the increased acuity level of patients, the nursing faculty and staff shortages, limited clinical sites, and the shifting role of the nurse. Quality and safety of patient care has become a major societal focus driving the increased accountability of nursing faculty and students to provide safe, effective, knowledgeable nurses who can function in a highly complex health care environment. Nurses are expected to demonstrate leadership skills in the coordination of patient care and safety and in this role oversee multidisciplinary teams who provide multifaceted care. Increasingly, nurses are expected to use their knowledge to transform health care delivery. Simulation provides an environment for the teaching and learning of multidisciplinary collaboration through scenarios embedded with communication, safety, delegation, critical thinking, and other important nursing program outcomes where novice nursing students can practice in a safe environment (Haskvitz & Koop, 2004; Jeffries, 2007; Radhakrishnan, Roche, & Cunningham, 2007). Finally, the challenge of assessment and evaluation of student performance can go beyond skill-based assessment and include processes such as student growth over time, development of critical thinking, and competencies of nursing education.

Theoretical and Conceptual Issues in Nursing Education

When viewed as a learning tool, simulation aligns well with the theoretical and conceptual foundations of nursing education. Models and frameworks have been proposed and utilized to help conceptualize the role of simulation in nursing education. One such model describes a simulation protocol that was formulated by the University of Maryland Baltimore School Of Nursing (Larew, Lessans, Spunt, Foster, & Covington, 2006). This protocol, based on the work of Benner (1984), utilizes a cue-based system with escalating prompts to move students through recognition to assessment to intervention to problem resolution.
Simulation Scenarios for Nurse Educators

Recommendations to highlight one problem at a time, allowing the scenarios to be student directed with time for processing in the pacing of the scenario, laid the foundation for further development of simulation frameworks. Jeffries and Rodgers (2007) propose a theoretical framework for simulation from “insights gained from theoretical and empirical literature” (p. 22) on simulation in nursing and related disciplines. This eclectic approach to formulating simulation frameworks provides the basis for a holistic, flexible, and multifaceted approach to integrating simulation into nursing education.

In addition to those seminal works cited above (Larew et al., 2006; Jeffries & Rodgers, 2007), we have considered the work of Tanner (2006) in our conceptualization of simulation. Tanner’s model of clinical judgment is relevant in simulation because so much of what simulation is involves clinical judgment and decision making. Tanner’s description of aspects of the process include noticing, interpreting, responding, and reflecting. This model emphasizes expectations of the situation that may be implicit or explicit. A particular emphasis on reflection finds support in the recent literature, which highlights reflection as an essential element in the improvement of clinical reasoning (Tanner). In simulation, an equivalent concept is debriefing, which should include Tanner’s reflection-on-action as a synthesis of experiential knowledge resulting in formulation of best practices. In a clinical situation, nursing students often observe and are unable to enact interventions independently. In simulation, reflection on interventions can result in a second try in a safe environment, where improved outcomes are immediately evident.

Fink (2003), another driving force in our simulation-focused pedagogy, discusses the creation of significant learning experiences. Based in education research, he has compiled six major dimensions to “formulate significant learning goals” (Fink, p. 75). In considering these learning goals, we have identified areas that demonstrate how simulation complements nursing education to meet program goals and outcomes. For example, the goals include foundational knowledge (nursing content), application (enactment of the scenario allows for use of knowledge and skills in a safe environment), integration (synthesizing the science of nursing with knowledge from all disciplines—in conjunction with critical thinking, this dimension incorporates decision making and priority setting), human dimension (interacting with themselves and others to form a view of who they are as nursing professionals, including opportunities for collaboration), caring (the art of nursing), and learning how to learn (empowering students for professional lifelong learning). The debriefing component of simulation pedagogy allows for an integration of all six major dimensions of Fink’s learning goals.

Of interest in simulation is social ecological theory (Stokols, 1996). This framework examines individual experiences and culture brought to social situations and how they impact behavioral outcomes. The social determinants of health (Wilkinson & Marmot, 2003), developed by the World Health Organization’s European division in the 1990s, incorporates social ecological theory and was used as a foundation for Healthy People 2010 (U.S. Department of Health and Human Services, 2000). These theoretical cores should be directly linked to simulations as they are being developed.

For example, a common challenge for nurses working in inpatient environments is the decontextualization of the patient. By this, we mean that care is
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being provided without an understanding of the social and physical environment or the behavioral motivators related to health of the individual patient. The result can be that patient teaching and other nursing activities done in the institution do not match the reality of the patient’s home environment. In home health care, nurses often need to reteach the patient and/or caregiver to fit the care plan to the resources available.

In simulation, not only is the context of the patient important, but educators must consider the cultural predispositions that students bring into the learning environment, which may affect behavior and the outcome of the scenario. Much the same is true within the culture of a nursing floor or unit. Clinical judgments made may be influenced by these multiple factors and need to be considered in culturally sensitive care of real patients. Also, simulations can be manipulated such that the patients being cared for have a variety of cultural backgrounds, needs, experiences, and diverse social and environmental support systems. Including these factors enhances the simulation and learning experience for students and increases the “realness” of the scenario.

Related nursing concepts in simulation are vigilance and failure to rescue. As nursing educators, vigilance is one of the most important yet difficult concepts to teach to nursing students (Almerud, Alapack, Fridlund, & Ekebergh, 2007; Jacobs, Apatov, & Glei, 2007; Meyer & Lavin, 2005). Although introduced early in assessment courses, the evolution of vigilance as an essential function of a nurse is amenable to practice and refinement during simulation. Once taught in this setting, students become aware of the value of maintaining vigilance in actual health care settings. A consequence of failed vigilance is failure to rescue. Although unethical to practice in the clinical setting, a student who experiences failure to rescue in a simulation can follow through with reflective debriefing, reformulate a plan, carry out the new plan, and then successfully maintain vigilance. Students have reported “never forgetting” the opportunity to “redo.” Once again, this experience adds to the development of the student’s vision of the impact of maintaining excellence in nursing care.

From the student perspective, there have been reports that conceptualizing the scenario through the lens of the nursing process while in the midst of a simulation is extremely helpful in producing positive outcomes! It has been frequently observed in our teaching that students, in the excitement of enacting a scenario, jump past focused assessments and begin performing interventions without data to support their decisions. Gentle coaching and reminders by the instructors alleviates this tendency.

In theorizing about technology in simulation, one may want to consider that beyond technological fidelity, there are actually three levels of fidelity: environmental, equipment, and psychological (Fritz, Gray, & Flanagan, 2007).

- **Environmental fidelity**: “The realism of the environment in which the simulation takes place” (Fritz et al., p. 2)
- **Equipment fidelity**: “Hardware and/or software realism of the simulator” (Fritz et al., p. 2)
- **Psychological fidelity**: “Reflects the degree to which the trainee perceives the simulation to be a believable representation of the reality it is duplicating” (Fritz et al., p. 2).
In nursing, we have incorporated these fidelities by making simulation as real as possible—a suspension of belief—so that the student interacts and participates more fully. The way space is structured to look and feel like a clinical unit, with necessary equipment, sets the scene for the simulation. In addition, events need to flow smoothly (e.g., responses from “patients” and “families”) so that the student acknowledges his or her role in meeting patient needs.

There are three goals or levels of enacting a “reality-based” simulation:

1. **For students:** The simulation must be believable. They must take on the role of the “nurse” and feel the responsibility for the care, assessment, and delegation necessary to meet the needs of this “real” patient. If the patient takes a turn for the worse, can students believe that their actions (or inactions) may lead to an adverse outcome for the patient (maybe even death)? In reality, we would not want them to have a life-threatening experience with a real patient in clinical; however, simulation provides the safe environment to learn skills necessary for the prevention of adverse outcomes. It is necessary to “suspend reality” and allow the students to embrace their role and act confidently with the necessary critical reasoning to accomplish their objectives. The debriefing component of the simulation will be much richer if the students self-reflect from a perspective that their actions and decisions really made a difference in the outcome of care.

2. **For faculty:** Simulation must also be believable for faculty in the sense that they can accomplish this and meet their educational goals via simulation; it is feasible, possible, and fun. From learning theory and brain theory, we are trying to encourage the use of the right and left brain, which has been demonstrated to better embed the experience, and make the substance of what is learned more accessible or easily retrieved for use in future, varied, patient encounters (Seigel, 2007).

3. **Translation into practice:** Tapping into an emotional or psychological component for the students when learning has been demonstrated to improve memory and allow for better retrieving. Knowledge stored is better accessible and easily tapped for use in practice in a variety of situations. Students use a synthesis of past experiences to pool best practices into actual practice.

**Learning in the Digital Culture**

Technology in nursing education is here to stay. Today’s students learn and study in the digital culture into which they were born. Multitasking is not an issue and, in fact, seems to be the way student brains are wired. Teaching to this group, whose attention span may be less than 10 to 15 minutes, requires new and innovative approaches other than the didactic. Repetitions, visual, and auditory and kinesthetic stimulation in an environment where students can move and interact while learning provide the variety of stimuli needed.

Of course, simulation also is one method to supplement didactic teaching. As such, educator expertise is essential when incorporating simulation. It requires background knowledge of the curriculum and the ability to assess where students should be, what they are capable of, and how nursing graduates from the program will function in the workforce. To provide optimal student learning experiences, changes in educational practices need to be incorporated with
pedagogical principles, which in turn guide the development and implementation of simulation activities and the integration of technology (Jeffries, 2005). Simulation provides another avenue for achieving these outcome objectives. The importance of the integration of, exposure to, and mastery of technology has recently been confirmed and included in the revision of the Essentials of Baccalaureate Education for Professional Nursing Practice (American Association of Colleges of Nursing, 2007). For its part, the NLN (2003) challenges nursing to “reconceptualize reform in nursing education” by encouraging innovative teaching practices (p. 3).

Simulated patients allow for standardized learning experiences. Scenarios designed by nursing educators provide for focused learning with prescribed outcomes. Student performance can be measured and documented across groups and specific points of time in important focus areas of the curriculum. Results of these measurements can be used for assessment and evaluation progress toward curricular goals and program outcomes.

Murray, Grant, Howarth, and Leigh (2008) discuss the use of simulation for teaching and learning to support practice learning and state “simulation is a strategy to enhance clinical competence” (pp. 5–6). Used as a supplement to clinical preparation or for clinical remediation, simulation provides opportunities for students to practice clinical skills and interactions outside the actual patient setting. Kuiper, Heinrich, Matthias, Graham, and Kotwall (2008) concur, stating that the results of their study show that evidence “supports the use of simulation as a source of remediation for students with clinical challenges and for an enhancement of didactic content” (p. 12). Simulation has also been shown to increase the confidence of students in a low-anxiety setting prior to clinical experiences (Murray et al.).

Simulation contributes to the development of the reflective practitioner who demonstrates better decision-making skills and superior problem-solving skills by using more creative thinking (Murray et al., 2008; Rauen, 2004). Unique to simulation exercises is the debriefing period, which allows for reflection on the effectiveness of interventions and processing of alternate theories for improving outcomes. Debriefing allows for reintegration of theory, evaluation of best practice, and an opportunity to learn about error management.

We are situated in a unique time period where the ability to use simulation fits with the issues of growing nursing faculty shortages and limited resources for student admission to programs as well as those related to clinical or agency use. In addition, safety and quality-of-care issues increase the importance of student education in situations where they can feel safe in providing care and transform an observational experience into a hands-on simulated learning experience.

As aptly put by Starkweather and Kardong-Edgren (2008), “the best outcomes with simulation occur when it is integrated across a curriculum, creating a challenge for academic nursing administrators, curriculum committees and faculty members who are struggling with how to incorporate simulation into, rather than on top of, already crowded curricular agendas” (p. 2). However, one must start at the beginning and often—simulation begins with one faculty in one course. This book explores the integration of simulation within a curriculum, building a learning resource center, an innovative approach to faculty development, and the role of health communication within simulation. In order to meet the needs of nurse educators who are looking for help with designing and
implementing simulation, we have written and collected scenarios currently in use from several seasoned faculty. It is our hope that these exemplars will fuel and encourage those who are enthusiastic about integrating simulation within their nursing programs. Finally, Part III of this book explores future directions for simulations in nursing education and outlines a framework of simulation learning created by the co-editors of this book.

Conclusion

The “perfect storm” is near, and the survival of the profession of nursing and the outcome of health care is at risk. We strongly and biasly believe that simulation-focused pedagogy holds many rewards, but working through the challenges and the need for extra resources to incorporate it awaits us. Infusing our passion for the process and our love of teaching and learning is the goal of this book. If we can help even one faculty member enhance teaching to incorporate these ideas for interactive learning that engages and excites students, then our mission is complete.

References

Introduction: Simulation-Focused Pedagogy for Nursing Education


