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Featured Article

NLN/Jeffries Simulation Framework for Simulated Participant Methodology

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simulated participant;
standardized patient;
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SP methodology

Abstract: The integration of human role players into simulation education is at an all-time high. In 2017, the Association of Standardized Patient Educators released the Standards of Best Practice with the intention of complementing the International Nurses Association for Clinical Simulation and Learning Standards of Best Practice[sm]: Simulation. As the popularity of human role players in simulation rises, it is imperative to wrap the andragogy with a theoretical framework to ensure simulation-based education (SBE) is maximized for safety, psychological fidelity, and educational outcomes.

This article suggests a modification of the NLN Jeffries Theory into SBE, where human role players and simulated participants are integrated. The identified components of Jeffries Theory, context, background, design, educational practices, simulation experience, and outcomes remain unchanged from the original. The suggested adaptations within each component are also discussed. This modification can be referenced to establish, evaluate, and/or modify simulated participant education programs.

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Inclusion of human role players (simulated participants) in simulation learning is growing rapidly (Szauter, 2014). This article proposes modifications to the NLN Jeffries Simulation Theory to support the design, implementation, and evaluation of simulation-based education (SBE) with SPs portraying various roles (Figure). The NLN Jeffries Theory serves to identify essential practices and foundational principles for SBE. However, without modification, the theory does not include best practices related to SP methodology. The intention of this article is to set a foundation for a theoretical framework, a Simulation Framework for SP Methodology, that includes SP methodology.

NLN Jeffries Theory

Much has changed in healthcare simulation education since the dissemination of the Jeffries Simulation Model in 2005. Jeffries' initial work, supported by the National League for Nurses and the Laerdal Corporation, was seminal work that provided structure and essential support for a fledgling educational modality. The Simulation Model was renamed the NLN Jeffries Simulation Framework and underwent three additional iterations between 2005 and 2012

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(Rizzolo, Durham, Ravert, & Jeffries, 2016). In 2016, the new NLN Jeffries Simulation Theory was published following a deep review of the literature (Jeffries, 2016). Although some simulationists are still struggling with many of the same issues first outlined in Jeffries' (2005) publication, much has happened to propel simulation education forward.

Key Points

- This article integrates essentials from the framework of NLN Jeffries Simulation Theory (2016) into simulation-based education that includes simulated participants.
- Simulation programs desiring to integrate a simulated participant program must ensure the psychological and physical safety of their participants, staff, and SPs when designing policies and procedures.
- This framework can be referenced to establish, evaluate, and/or modify simulated participant education programs.

What is new? There has been significant research that supports the efficacy of simulation-based education (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014; McGaghie, Issenberg, Cohen, Barsuk, & Wayne, 2011; Zendejas, Brydges, Wang, & Cook, 2013), global adoption of the International Nurses Association for Clinical Simulation and Learning Standards of Best Practice[sm]: Simulation (The INACSL Standards Committee, 2016), and the Society for Simulation in Healthcare's (SSH) individual accreditation for simulationists and the simulation centers in which they work. Leaders from International Associations, such as INACSL, SSH, and ASPE, have led by example to ensure consistent messaging of best practices and dissemination of knowledge to the broader community.

The six core elements in NLN Jeffries Simulation Theory—context, background, design, educational practices, simulation experience, and outcomes—are briefly introduced here for reference. Context is defined as the purpose, physical location, and evaluation criteria of the learning experience, providing the needed framework for each developed simulation. The background, embedded within the context, identifies learner expectations and overarching goals for the simulation, needed resources for the simulation, and how this SBE supports the curriculum. Simulation design includes specific learning objectives, desired fidelity, learner role assignments, simulation flow, and strategies for pre-briefing/debriefing. Commencing from an environment of trust on the parts of both the facilitator and learners, the simulation experience is defined as interactive, learner centric, experiential, and collaborative. Wrapped within the simulation experience is the dynamic interaction between facilitator and participants via pre-briefing, simulation progression, cues, and debriefing. Jeffries, Adamson, and Rodgers (2016) provide significant facilitator and participant attributes that contribute to positive learning outcomes during the simulation experience. The NLN Jeffries Theory separates the final core element outcomes into three areas: participant, patient, and system outcomes. Predominantly, the outcomes of the participant have been widely researched and reported. However, there is a small body of literature indicating that simulation learning translates to better patient outcomes, reduced cost, and improved processes within systems. The core elements outlined in the NLN Jeffries Theory described above remain intact; the proposed modifications originate from the Association of Standardized Patient Educators (ASPE) Standards of Best Practice (SOBP), findings from a body of literature related to SP methodology, and accreditation standards established by the Society for Simulation in Healthcare (SSH) (see Table). Similar to how Jeffries' work has evolved, it is anticipated that as the simulation community builds a more robust body of literature relating to SP methodology, requiring further improvements to this framework.

Simulated Participants (SPs) and Other Terminology

Currently, terms, such as standardized and simulated participants, are often used interchangeably with inconsistent

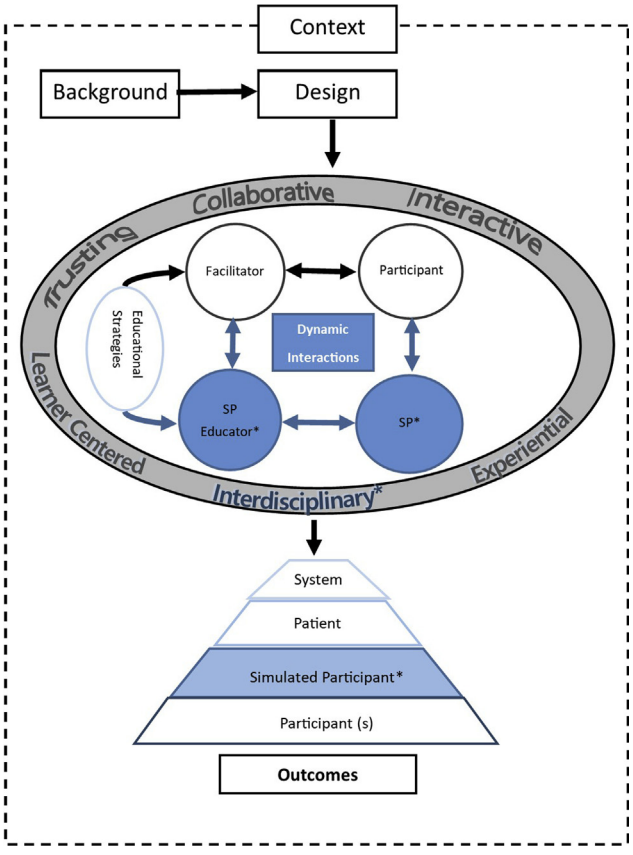

Figure NLN/Jeffries Simulation Framework for simulated participant methodology.

definitions within the global simulation community (Sanko, Schneidereith, Cowperthwait, & Onello, 2019). For that reason, ASPEs SOBP identifies a universal term, *simulated participant,* to describe all human role players within simulation-based education (SBE) who have been correctly trained for the consistent portrayal of a role (Lewis et al., 2017). This article will align with the ASPE recommendation to utilize the term *simulated participant* to describe both standardized patients and simulated patients, as well as many other roles that could fit within the context of formative, summative, and high-stakes simulation. Additional examples can include family members, visitors, and other members of the healthcare team.

Additionally, the term *participant* for this article is defined as anyone involved in the simulation experience as a healthcare provider seeking the opportunity to gain knowledge in their professional role, and/or the role of other healthcare professionals comprising an interdisciplinary team. According to the ASPE SOBPs, the accepted professional title for any individual whose primary role is to educate SPs, ensure SPs are prepared for SBE, and/or function as the subject matter expert (SME) for SP methodology is *SP Educator* (Lewis et al., 2017).

Context

As the context for the simulation is being developed, the inclusion of an SP should also be considered. Simulated participants provide significant value if the purpose of the SBE includes the development of nontechnical skills, such as empathy, patient/family education, assessment of clinical skills, shared decision making, communication during a procedure, and/or patient-centered care principles (Errichetti, 2015b). There is significant documentation in the literature about the need to ensure psychological safety for the participants (INACSL Standards Committee, 2016). When an SBE includes SPs, their physical and psychological safety must also be considered throughout development (Lewis et al., 2017). Some examples related to physical safety are needle safety, live defibrillators, and air quality. Regarding psychological safety, it is important that each SP is given a detailed description of the simulation and role they will portray in order for them to identify potential emotional conflicts and allow them to ''opt-out'' if necessary (Lewis et al., 2017). There are some simulations that warrant an SP but, if there is any concern that their safety could be compromised, an alternative simulation modality, such as hybrid or manikin simulation, should be utilized.

The setting of the SBE should also be considered when planning the integration of SPs. Best practice standards indicate that learners should not see or interact with the SP outside of the simulated setting. The purpose of this standard is to improve cognitive fidelity, that is, the ability to ensure that all elements of the simulation are presented realistically to the participants (Lopreiato, 2016). As an example, if the participants were to watch a patient with a spinal cord injury walk into the simulation room without difficulty and get into the hospital bed, this would serve as a breech in cognitive fidelity. Programs should evaluate options for modifying the flow of the simulation spaces to avoid unplanned interaction between participants and SPs as they transition into the simulation room. Many simulation programs that were built to integrate SP learning were done so with concealed entrances and hallways established in the floor plan, so learners and SPs do not ''meet'' outside the simulated setting (Lababidi & AlQahtani, 2016). However, for simulation programs looking to add an SP program after construction has been completed, minor adjustments can be made to reduce the intermingling of SPs and learners outside the simulated setting (Seropian & Lavey, 2010). As an example, SPs can be sequestered in the control room during pre-briefings that occur in simulation spaces. Once the pre-brief is concluded, participants can step out of sight of the simulation room so SPs can enter the room and get situated before the participants enter for the simulation.

As SBE is being developed, simulation spaces, locations, and SP presentation should closely mimic actual patient care (Muckler, 2017; Pascucci, Weinstock, O'connor, Fancy, & Meyer, 2014; Sideras et al., 2013). For example, if the intended simulated learning environment is a homecare simulation but is conducted with an SP wearing a hospital gown in a space that mimics acute care, SPs will have difficulty remaining in character, and participants will struggle to suspend disbelief throughout the simulation because the ''scene'' is not cohesive with the identified setting for the interaction (Pascucci, Weinstock, O'connor, Fancy, & Meyer, 2014; Sanko, Shekhter, Kyle, Di Benedetto, & Birnbach, 2013; Wilson & Price, 2015). Environmental fidelity provides the correct auditory and visual cues to improve engagement from both the participants and SPs, fostering an opportunity for assessment of communication skills and high-level decision making (Jones et al., 2011).

Background

The background of NLN Jeffries Simulation Theory includes identifying goals, considering expected benchmarks, targeting the SBE within the curriculum map, and identifying the availability of resources such as time and equipment. Following INACSL Standards of Best Practice Simulation (2016), ''Simulation-based experiences are purposefully designed to meet identified objectives and optimize achievement of expected outcomes.'' The simulation should not be implemented as an educational experience of last resort without significant planning. This best practice holds true more so for a simulation involving SPs. Success requires pre-planning, SP preparation, and clear guidelines for participants, facilitators, SP educators, and SPs. Simulation-based education with SP methodology requires that each of the key stakeholders (see Simulation Experience) understands the role and is invested in the success of each SBE.

For many simulation centers, the barrier to including SPs into SBE is the needed financial resources to pay SPs for their work. However, several simulation programs are identifying unique ways to initiate and maintain a thriving SP program with no or little budgetary allowances. Some examples of unique ways to integrate SP methodology on a small budget include development of a three-credit elective course, partnering with local senior centers or assisted living facilities to identify volunteers, and including SP ''workers'' as an opportunity for service learning or work-study credit within the institution (Anderson, Holmes, LeFlore, Nelson, & Jenkins, 2010; Cowperthwait, Saylor, & Schell, 2014; Mavis, Turner, Lovell, & Wagner, 2006).

The Triple Constraint—quality, time, and money (Pinto, 2004)—comprises the three leading factors to be considered when initiating a new program. Organizations desiring to start an SP program on a small budget need to ensure they are allocating the necessary time and energy to create a successful, well-developed SP program. One suggestion for success is to start small with one pilot simulation to evaluate the SBE and then to buy it from both participants and administration. Allowing the SP program to start with small, targeted SBE reduces the strain on time and scales costs slowly to meet the demand for SP simulation. Regardless of an institution's financial resources, best practice standards require that time is allocated for SP education, standardization, and feedback training (Lewis et al., 2017). The education for simulated participants needs to include professionalism, essentials of standardization, improvisation, feedback, and preparation for role portrayal (Cowperthwait et al., 2014; Tierney, Gill, & Harvey, 2015).

Design

It is imperative that simulation programs that include SP methodology as an educational modality have established policies and procedures for the design, planning, and evaluation of simulation education concordant with both ASPE's and INACSL SOBP (Lewis, 2017). SP Educators should be included as a part of the team when developing SBEs that include SPs. SP Educators collaborate on character development, the capability of the SP pool, and serve as advocates for SPs to ensure that their physical and psychological safety is being considered during the SBE design.

Jeffries includes the following elements for simulation design: specific learning objectives, desired fidelity, learner role assignments, simulation flow, and strategies for prebriefing/debriefing. All of Jeffries' elements are still significant with regard to simulation design, including SPs. However, within the constructs of SP methodology, immersion and standardization are additional considerations for SBE with SPs.

Immersion

With the integration of SPs in SBE, the simulation authenticity and the ability of the SP to portray the assigned role affects the emotional buy-in from participants (Errichetti, 2015b; Wilson & Price, 2015). If participants perceive a breach in the fidelity or a nonverbal cue from the SP that signals that the SP is ''just acting,'' the ability of participants to remain fully immersed in the learning process is compromised (Pascucci et al., 2014). Additionally, if the SPs' physical characteristics (age, gender, physical attributes) do not match closely with the character they are representing in the simulation, suspension of disbelief is challenged, negatively impacting learning objectives (Muckler, 2017). All types of simulation learning, regardless of the chosen modality, requires resources. Investing in activities that engage participants and promote full immersion maximizes learning outcomes.

Standardization

There are two types of standardization to consider when incorporating humans into the learning experience: individual and team (Cowperthwait et al., 2014; Smith, Gephardt, & Nestel, 2015a). *Individual standardization* is the ability of the SP to remain true to the character and present a consistent performance for each simulation experience. *Team standardization* is similar to inter-rater reliability; it is the ability of all SPs playing a role to create a consistent level of difficulty and fidelity to the character (Lewis et al., 2017). With the integration of SPs in simulation learning, team controlling and individual standardization is essential for formative, summative, and high-stakes simulation learning.

INACSL Standards of Best Practice Simulation and the NLN Jeffries Theory highlight the importance of well-developed simulation objectives. SPs need to implicitly know the level of learners participating in the SBE and the simulation objectives as they are preparing for the role (Lewis et al., 2017). Additionally, character descriptions for each role need to be robust in order to elicit consistency in terms of team standardization (Cowperthwait et al., 2014; Lewis, 2017; Wilson & Price, 2015). There are times, from a facilitator's perspective when the patient's background does not affect the SBE learning outcomes. However, if a robust character is not developed, each SP will interpret the undefined character, and they may backfill the story from their own mental model, eroding standardization (Pascucci, Weinstock, O'connor, Fancy, & Meyer, 2014).

Additionally, ASPE SOBPs stipulate that each SP needs to participate in a dress rehearsal for each role (Lewis et al., 2017). A dress rehearsal, a final run-through of the simulation in which everything is prepared and performed just as it will be for the simulation experiences to follow, aims to weed out inconsistencies and create appropriate emotional portrayals and should be run a few days prior to the simulation. For

maximum team standardization, all SPs should be scheduled for the same dress rehearsal so they can all hear the same feedback from the subject matter expert (SME). While there is always room for improvement, the time invested in this education results in a consistent level of SP performance, maximizing standardization and improving outcomes (Pascucci et al., 2014; Smith et al., 2015a).

Educational Principles

If standards of best practice are being followed, each simulation experience will be collaborative, experiential, and learner centered. The interaction throughout the SBE will also be wrapped in an environment of trust among the SP, participants, and facilitator. With the inclusion of SPs in the SBE, interprofessional education (ISBE) can also be included as a core element of the simulation experience.

The World Health Organization defines interprofessional education as participants from two or more professions learning from, with, and about each other (Framework for Action on Interprofessional Education and Collaborative Practice, 2010). One of the added benefits of integrating disciplines outside health professions in SBE is the opportunity for mutual professional appreciation and respect (Szauter, 2014). Principles, such as patient-centered care and shared decision making can be included in the ISBE. Additionally, the integration of SPs in ISBE promotes the development of empathy, improved communication, and self-awareness in participants (Bonvicini et al., 2009; Hanna & Fins, 2006; Ward, Cody, Schaal, & Hojat 2012). Conversely, SPs also describe the rich learning opportunities they experience while interacting within the healthcare continuum (see Outcomes) (Cowperthwait et al., 2015). The feedback and interaction of the SP with the participants fosters patient-centered interprofessional learning experiences that can extend into professional practice.

Simulation Experience

A truly successful simulation experience occurs when the objectives and design stretch participants to the edges of their ability and create an environment of full psychological and contextual fidelity. The simulation experience in NLN Jeffries Theory includes educational strategies, participants, and facilitators (Jeffries, Rodgers, & Adamson, 2016). With the inclusion of SPs as a part of the educational strategy, there are two additional key stakeholders to consider within the context of the simulation experience: simulated participant educator and simulated participant.

Participant

The NLN Jeffries Theory includes the following participant variables, as identified in the literature: age, gender, level of anxiety, readiness to learn, personal goals, preparedness, tolerance for ambiguity, self-confidence, learning style, and cognitive load (Adamson & Rodgers, 2016). When the structure of the simulation experience has been well planned in advance—the objectives correlating with the experience of the participant(s)—and all stakeholders are well prepared, there is a wide range of learning opportunities available (Decker et al., 2013; Gaba, 2013). Participants with less exposure to SBE with SPs and/or clinical experience should be informed that there will be an SP in the simulation experience prior to the pre-briefing to ensure psychological fidelity. Since the pre-briefing creates an intentional pause in the activity of the simulation center, participants should be reminded that the SBE includes an SP and be informed about the level of feedback the SP will contribute during the debriefing. Participants should then be invited to ask any additional questions of the facilitator before the SBE begins (Pascucci et al., 2014; Rudolph, Raemer, & Simon, 2014).

Facilitator

The NLN Jeffries Theory added many additional factors for the facilitator of the SBE. In addition to the demographics identified in the NLN Jeffries Framework, personality, competence, interpersonal relationships, technological skill, attitude, attributes, roles, responsibilities, values, self-awareness, and teaching ability were also identified from the extensive literature review completed by Adamson and Rodgers (2016). When including SPs in SBE, there are several additional facilitator factors that influence outcomes.

The structure and educational strategies for SBE differ from a didactic or clinical learning environment (INACSL Standards Committee, 2016); this truth is amplified when SP methodology is included. Facilitators who integrate SPs into SBEs should have a thorough understanding of SP methodology and ASPEs SOBP (Lewis, 2017). As key stakeholders, facilitators should actively participate and collaborate during all phases of simulation development, providing context for the SBE, feedback on the performance of the SP, and clearly identify expectations for SP feedback during the debriefing (McIntosh, Thomas, & Edwards, 2018). Simulation outcomes are enhanced if each facilitator is completely acquainted with the SBE and possesses the needed social and emotional intelligence to provide leadership and direction as they facilitate each SBE (INACSL Standards Committee, 2016).

Similar to disruptions in clinical practice, outside distractions/responsibilities of a facilitator during any phase of the SBE will affect outcomes (INACSL Standards Committee, 2016). This is especially true with SP SBE. Facilitators need to be aware of potential threats to SPs safety and intervene if necessary (Lewis et al., 2017). Similarly, the International Nurses Association for Clinical Simulation and Learning Standards of Best Practice[sm]: Simulation

highlights the need for facilitators to be familiar with the debriefing process and to adhere to an established debriefing model for consistency. This principle is heightened when SPs are integrated into the debriefing.

The challenges associated with including SP feedback in debriefing can be addressed by including the facilitator(s) and SPs in a cooperative workshop designed to practice this skill. This workshop would be especially helpful for new programs or programs that have not included the SP in the debriefing process previously. An additional recommendation in the literature is to have expert SP facilitators model the debriefing several times for a novice facilitator before the novice facilitates independently (Nestel, Bearman, & Fleishman, 2015). Facilitators typically invite SP feedback after the participants have had time to defuse/de-role. However, the facilitator should encourage the participants to engage the SP throughout the debriefing process to answer questions from the unique perspective of the SP. There is true benefit in including patient and/or family member-centered insights during the debriefing process. This is especially true if the SBE objectives include development of nontechnical skills, patient/family education, assessment of clinical skills, shared decision making, communication during a procedure, and/or patient-centered care principles (Errichetti, 2015b; Nestel et al., 2015; Pascucci et al., 2014).

Simulated Participant Educator

The role of SP educator is not included in the NLN Jeffries Framework or Theory. With the development of an SP program, it is essential that institutions identify a champion to ensure the interests of the SPs are represented for the design and integration of SBE (Lewis et al., 2017). The position of SP educator may develop organically from several different professional roles within a simulation center (Errichetti, 2015a). Commonly SP educators have experience with theatre, adult education, and/or extensive experience as an SP. Incorporating principles from theatre, such as interviews, auditions, and performance casting will assist the SP educator to communicate the expectations, assess the professionalism, test the range of emotion, screen for conflict of interest, discuss availability, and gauge flexibility of individuals desiring to play the role of SP (Cowperthwait et al., 2014; Errichetti, 2015b; Pascucci et al., 2014).

Simulated Participant Educators should be included on any team that is drafting or amending institutional policies and procedures related to SP methodology (Lewis et al., 2017).

Simulated participant programmatic policy and procedure should include principles, such as initial SP training and professional development workshops, SP self-evaluation through video playback, and a process for formalized feedback from the SP educator that will maximize the learning process (Errichetti, 2015b; Nestel et al., 2011; Lewis 2017; Sanko et al., 2013; Smith, O'Byrne, & Nestel, 2015b).

Some of the SP educator's primary responsibilities are to recruit, interview, audition, and educate SPs. Although challenging, SP educators are tasked to recruit individuals who are professional, flexible, and psychologically fit to portray a wide range of emotion and suffering (Lewis, 2017; Pascucci et al., 2014; Tierney et al., 2015). After the recruitment process, the SP Educator is responsible for planning and executing a formalized training for the SPs that includes an orientation to the program, standardization principles, improvisational work, role portrayal, and feedback training (Lewis et al., 2017). In addition to the initial SP education, SP educators should hold periodic (annual or biannual), required professional development workshops for their SPs that include improvisational work, feedback education/reeducation, policies and procedure review/update, and introduction of new simulations.

Simulated participant educators are a part of the team for any SBE development involving an SP. Simulated participant educators represent the interests of the SP's safety (both psychological and physical), provide comment and feedback on the ability of the SPs to provide the level of fidelity necessary to meet the established learning objectives, and create rich, descriptive character descriptions (backstories) for each role portrayal (Lewis et al., 2017; Pascucci et al., 2014). By establishing a rich character, SP educators provide the needed structure within the simulation and debriefing processes to ensure all participants are getting a standardized learning experience and beneficial patient-centered feedback (Errichetti, 2015b; Smith et al., 2015a).

Both INACSL and ASPE SOBP highlight the importance of "dry runs," or pilots, for every new or revised SBE. The dry run is conducted in advance of the planned SBE to identify gaps in the development process (INACSL Standard Committee, 2016; Lewis, et al., 2017; Smith et al., 2015a). During dry runs, the SP educator will typically play the role of the SP from their understanding of the role portrayal while facilitators, SMEs, or advanced "participants" take on the participant role. The purpose of the dry run for the SP educator is to identify gaps in the character description, get feedback from subject matter experts (SMEs) concerning appropriate emotional portrayal, and ensure a thorough understanding of the simulation objectives before the first dress rehearsal.

The SP educator can lead the dress rehearsal that includes all SPs cast for the role, facilitators, and SMEs, when appropriate. SPs seasoned to the role should still participate in dress rehearsals of the SBE; this ensures that all SPs playing the role have gotten the same information, that the details regarding the subsequent performances are consistent, and that the SP educator can update the entire SP pool for the role on any last-minute notes (Pascucci et al., 2014; Walker, Armstrong, & Jarriel, 2011). Furthermore, experienced SPs often have additional information that adds a richness and depth to the role of a novice SP during dress rehearsal.

Table Suggested Modifications to the NLN Jeffries Simulation Theory

Concept	NLN Jeffries Theory Modifications
Context	Setting
	Purpose
	Evaluation criteria
	Safety for SP's
	Sequester SP's before SBE
	Environmental fidelity
Background	Identify SBE goals
	Consider expected benchmarks
	Target the SBE within the curriculum map
	Identify needed resources (i.e., time and equipment)
	SP preparation
	Consider resources/grow organically
Design	Objectives
	Physical & conceptual fidelity
	Problem solving complexity
	Predetermined facilitator responses to selected learner interventions
	Policies and procedures concordant with ASPE & INACSL SOBP
	Involve SP Educators in design
	Collaboration
	Chose SP appropriate for role
	Standardization essential
	SPs need to understand the level of learner & objectives of the in the SBE
	Robust character descriptions led to Standardization
	Dress rehearsal for all SPs
Educational practices	Environment of trust
	Learner centered
	Collaborative
	Interactive & experiential
	Interdisciplinary
Simulation experience participant	Age
	Gender
	Level of anxiety
	Readiness to learn
	Personal goals
	Preparedness
	Tolerance for ambiguity
	Self-confidence
	Learning style
	Cognitive load
	Inform participants of SP participation
	Set expectations of SP feedback during debriefing
Simulation experience facilitator	Demographics
	Personality
	Competence
	Interpersonal relationships
	Technological skill
	Attitude
	Attributes
	Roles
	Responsibilities
	Values
	Self-awareness
	Teaching ability
	Experience with SP methodology
	Knowledge of ASPE's SOBP
	Dry runs (pilots) for new or changes
	Utilizing an established debriefing model to include SP feedback
	Confidence with SP feedback during debriefing
	Additional responsibilities outside of the simulation
Simulation experience SP Educator	Establish standards for simulation fidelity/SPs
	Casting SPs using Audition/interview/ availability
	Develop Character descriptions
	SP education and development
Simulation experience SP	Quality of preparatory information
	Level of commitment to character
	Experience with SP role
	Personal experience/bias
Outcomes	Participant
	Patient
	Systems
	Simulated participant

(*continued on next column*)

Table (*continued*)

The gray shading in the table refers to the proposed modifications to the original theory, the new content to be added to the theory.

Once the simulations have begun, SP educators should observe the initial simulations, obtain notes from the facilitator(s) on performance, and provide coaching to the SP between simulations to ensure quality performance (Mavis et al., 2006; Nestel et al., 2015; Smith et al., 2015b). For SPs new to a role, SP educators can enhance an SP's confidence, standardization, and feedback quality by scheduling the novice to observe an experienced SP portraying the role (Cowperthwait et al., 2014). Ideally, observations would be done in the control room in real time so the SP can ask questions of the SP educator or a seasoned SP as the simulation is unfolding. However, an alternative is to have the novice watch archived videos from previous SP experiences.

Simulated Participant

The role of the Simulated Participant is not included in the NLN Jeffries Theory. There has been a large movement globally toward integrating humans into formative, summative, and high-stakes SBE in the last 10 years. Simulated participant roles can include patients, family members, distraught bystanders, or another healthcare provider. Integrating SPs into SBEs provides a level of realism and feedback not usually available with manikins, augmented reality, or virtual reality (Errichetti, 2015b). However, there are several factors to consider and plan for when integrating an SP program. An SP can only be as good and consistent as the preparatory work that is put into their education and the SBE (Errichetti, 2015a). With SP simulation, the challenge to ensure standardization and quality feedback can be addressed with a formalized educational curriculum taught before the SPs begin their roles in SBE (Wilson & Price, 2015). Once all the SPs in a simulation are properly prepared, SPs are able to provide such a credible portrayal that participants are convinced that they are interacting with a real patient/family member for a true clinical encounter (Churchouse & McCafferty, 2012; Errichetti, 2015b; Pascucci et al., 2014). Although usually consistent and reliable, highly qualified SPs may still struggle with an assigned role. This could be secondary to the unmentioned past personal experience or to overarching fears about future health conditions not mentioned in the interview. These should be dealt with on a case-by-case basis, but in the interest of the SP, they should be removed from the SBE for their own psychological safety (Lewis et al., 2017, Pascucci et al., 2014).

Cognitive fidelity can be maximized if SPs are fully immersed in the character before the participants enter the room and maintain accurate character portrayal until the SBE concludes (Nestel et al., 2015; Wilson & Price, 2015). This ensures that the SBE flows naturally and promotes the full engagement of the participants. Simulations that are repeated year after year or semester after semester will gather a cadre of SPs that take ownership of the character and mentor novice SPs as they become familiar with the nuances of that specific SBE. This experience and ownership facilitate consistency in character, the richness of feedback, and a quality learning experience for participants.

Another SP factor that impacts outcomes of the SBE for participants is the quality of feedback an SP provides during the debriefing process (Errichetti, 2015b; Lewis et al., 2017; Szauter, 2014). For formative SBE, SPs offer feedback on nontechnical skills, such as the use of therapeutic touch, nonverbal communication, tone of voice, team communication, patient/caregiver perception, and establishing a therapeutic relationship (Nestel et al., 2015; Turner, Scerbo, Gilvia-McConvey, 2016). Feedback to the participant(s) is more compelling and better received if the SP draws on emotion and/or observation from a specific portion of the interaction or action to give objective, patient-centered feedback (Bokken, Linssen, Scherpbier, Van Der Vleuten, & Rethans, 2009; Pascucci et al., 2014). Additionally, the facilitator has the opportunity during debriefing to seek SP feedback through video replay or verbal recall to elicit SP reaction to the care being provided.

Outcomes

The NLN Jeffries Simulation Theory identified three outcome areas: participant, patient (care recipient), and systems. As mentioned previously, each SBE that includes an SP should have outcomes that are enhanced by SP interaction and/or feedback to maximize participant learning. Participants in SBE with SPs value patient-centered feedback (Cowperthwait et al., 2015; Wilson & Price, 2015), improve their ability to communicate (Rickles, Tieu, Myers, Galal, & Chung, 2009), increase awareness of legal and ethical principles in healthcare (Downar, Knickle, Granton, & Hawryluck, 2012), and gain confidence in challenging clinical encounters (Saylor, Cowperthwait, & Rodriguez, 2013). The integration of SPs into SBE promotes both physical and functional fidelity, improving the ability for participants to suspend disbelief. Once participants are fully immersed in a successfully facilitated and planned simulation, the participants can be stretched to the edges of their affective, psychomotor, and cognitive learning ability, thus improving translation to clinical practice (Mavis et al., 2006; Muckler, 2017).

Within the context of the SBE, including SPs, the personal and professional growth of the SP should also be included as an outcome. Their experiences as an SP improve their ability to empathize with young healthcare providers, effectively communicate with their own provider, and/or advocate for a loved one within the healthcare system (Cowperthwait, Saylor, & Schell, 2014; Dempsey, 2017; McIntosh, Thomas, & Edwards, 2018). There is a growing body of literature supporting the recruitment and training of current and future healthcare providers for the role of SP (Aitha, 2018; Bas-Sarmiento et al., 2017; Brunero, Lamont, & Coates, 2010; Cowperthwait et al., 2015). Bosse et al. (2012) found that medical students participating as the SP in the educational experience were rated higher on the ability to understand the patient's perspective than other participants that interacted with a traditional SP. While integration of student learners as SPs may not always be appropriate for the planned SBE, there is evidence that this unique educational practice—when best practice guidelines are followed, when there is time for learners to become fully immersed, and when they play a role several times—not only requires fewer resources, but it inherently provides more educational value and personal growth for the participants.

Summary

There is a multitude of considerations when integrating an SP program into SBE. Most importantly, SPs are human beings with emotions, perceptions, and individual senses of purpose. The suggested modifications to the NLN Jeffries Simulation Theory serve as a framework for simulation centers that currently integrate SP methodology, as well as new simulation programs desiring to include SPs in their simulation experiences. For programs new to SP methodology, it is vital to understand that while SP programs provide extensive benefits, workflow in such programs is different from what many simulationists may be used to. There needs to be time set aside in the simulation calendar for SP education and simulation training. Once the SPs have been properly prepared for the simulation experience, the facilitator is free to focus on the evaluation tool, participant performance, and highlights for the debriefing. The intended simulation outcomes outlined in this framework are affected by the program's commitment to best practice. The Simulation Framework for Simulated Participant Methodology can be referenced to establish, evaluate, and/or modify simulated participant education programs.

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