"Same But Different": The Role and Perceptions of the Simulation Clinical Educator

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Abstract

Simulated learning programs are an important component of allied health education. Although the role of simulation clinical educators has been highlighted as critical for student learning within simulation, their perceptions of their role have not yet been investigated. This study aimed to explore the experiences of simulation clinical educators. Participants were ten simulation clinical educators who had supported speech-language pathology students' learning during a 5-day simulation program focussed on speech-language pathology practice with adult clients in acute hospital and rehabilitation settings. Educators participated in individual semi-structured interviews exploring their role and their perceptions of the simulation-based learning program. Data were analysed using inductive thematic analysis. Three inter-related themes emerged from participants' views. The major theme of Unique teaching and learning environment incorporated five subthemes: focus on teaching; safe learning environment; authenticity and engagement; structure and intensity of learning, and; feedback opportunities. Two additional themes were identified: Clinical educator role same but different, and Simulation bridges the gap between theory and practice. This study offers new insights into simulation clinical educators' perceptions of their role when supporting students within simulation and highlight the importance of harnessing the unique benefits of simulation as a teaching pedagogy to maximize its impacts on student learning and justify its costs.

Keywords

simulation, clinical educator, teaching and learning

Cover Page Footnote

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Introduction

Simulation-based learning programs have developed exponentially within universities and health sectors globally and are an increasingly common component of allied health education (Ryall et al., 2016; Stead et al., 2022). It is widely reported that simulation-based learning is perceived positively by speech-language pathology students, increasing their confidence, knowledge, and skill development across a range of clinical practice areas (Dudding & Nottingham, 2018) such as communication and interpersonal interaction (Hill et al., 2013; Quail et al., 2016), paediatric and adult swallowing disorders (Benadom & Potter, 2011; Estis et al., 2015; Miles et al., 2016; Potter & Allen, 2013; Ward et al., 2015), stuttering (Penman et al., 2021), augmentative and alternative communication (Howells et al., 2019), and adult neurological communication disorders (Rose et al., 2017). While most published research investigating simulation in speech-language pathology has focused on student perceptions of its value, a recent research study determined that simulation can replace a proportion of speech-language pathology traditional clinical placement time with no negative implications for competency development (Hill et al., 2021).

Although student outcomes within simulation are well researched, the role of the simulation facilitator has been a less common focus in the simulation literature. This is despite acknowledgement that the simulation facilitator is integral in the management of the complexities of the simulation (International Nursing Association for Clinical Simulation and Learning Standards Committee [INACSL], 2021a) and development of quality simulation facilitators is necessary to support and sustain the growth witnessed in simulated learning (Peterson et al., 2017).

The role of the simulation facilitator may be inferred, in part, from the role held by a clinical educator in a workplace setting where practicing speech-language pathologists facilitate students' competency development during placement experiences. Broadly, the role of a clinical educator is to work with the student to support their learning which often involves teaching of skills, provision of feedback, and fostering collaborative learning (Gibson et al., 2019). In this way, the role of a simulation facilitator, also referred to as a simulation clinical educator (Hewat et al., 2020), may be considered similar as simulation clinical educators play a crucial role in facilitating learning during the simulation-based learning experience. Both educator roles carry responsibility for enabling an environment that is sensitive to the needs of the learner and dedicated to supporting the student to achieve identified outcomes (Gibson et al., 2019; INACSL, 2021a). In contrast to the workplace clinical educator, simulation clinical educators are uniquely positioned because their sole focus during the simulation is on the learner(s) rather than a patient or client as would be the case in a workplace setting (Issenberg & Scalese, 2007).

Within simulation, facilitation of learning is recommended to follow a structure of pre-brief, simulation activity, and debrief (INACSL, 2021b). As in the workplace, feedback is also an essential component of the experience; central to the simulation clinical educator role is debriefing with the learner(s) during and/or after the simulated clinical scenario (Cantrell, 2008; Fanning & Gaba, 2007). Designated debriefing time for students following a simulation experience enables students to receive and consider feedback from the clinical educator, to discuss their learning with peers, and to engage in self-reflection and exploration of the learning experience (Dudding et al., 2019; INACSL, 2021c; Lioce et al., 2020), supporting their continued improvement through reflective practice (Doherty-Restrepo et al., 2018; Hunter, 2016; INACSL, 2021b). Previous research has determined that students value the opportunity

during the debriefing phase to reflect and receive feedback to support their clinical learning, and educators observe students to apply this feedback readily in future learning situations (Morley et al., 2019; Penman et al., 2020a).

There are many other well-documented benefits to simulation including opportunities for repeated practice, integration of experiences with university curriculum, experiences targeted to learner levels, and a controlled environment that deliberately facilitates time for feedback, reflection, and learning to occur (Issenberg & Scalese, 2007). Therefore, the range of skills required of a simulation clinical educator likely transcend that of a workplace clinical educator, and highlight the need for appropriate simulation clinical educator training to ensure a quality simulation experience for the learner. The importance of access to training for simulation clinical educators and its critical components are highlighted in research and best practice standards (INACSL, 2021a; Peterson et al., 2017). Such training with opportunities for observation, practice, discussion, feedback, mentoring (Peterson et al., 2017) and debriefing (Cheng et al., 2017) contributes to educator confidence and ability which in turn can maximise student learning outcomes.

While the importance of the simulation clinical educator is regularly described in the literature, simulation clinical educators' perceptions of their role have not been the focus of previous research. Therefore, the current study sought to explore the experiences of simulation clinical educators in a simulation environment. The findings of this study may contribute to the growing body of evidence within teaching and learning literature about practices that support high quality student learning outcomes in simulation-based learning environments. Furthermore, such evidence may potentially inform practices to support student clinical learning more broadly. The specific research questions in this study were the following:
1. How do simulation clinical educators perceive their role in a simulation setting compared to their role in a traditional clinical placement setting?
2. What are the perceptions of the simulation clinical educators of the simulation-based learning program?

Methods

This interview-based qualitative research formed a study within a larger Australian research program which investigated the inclusion of simulation in university speech-language pathology degree programs (Hill et al., 2021). Ethical approval was obtained from the relevant ethics committees at all six universities participating in the research.

Context of the Research. A five-day simulation-based learning program was developed with a focus on speech-language pathology clinical practice with adult clients with acquired neurological communication and swallowing disorders (Hewat et al., 2020; Hill et al., 2021). The reader is directed to a full description of the program in Hewat et al. (2020). The immersive program was based in a simulated learning environment that replicated a hospital ward and outpatient setting including access to all clinical equipment and client files. Students engaged with simulated patients, who were actors trained to authentically portray patients with a range of swallowing and communication difficulties. Thirteen immersive scenarios provided students with experience in assessment and intervention as part of their required practice curriculum content immediately prior to participation in their traditional placement in the field.

This program was developed in consideration of learning theory and best practice standards for simulation design (Jeffries & Rogers, 2012; Lioce et al., 2015). A total of 175 speech-language

pathology students in the middle third of their program of study attended the simulation-based learning program prior to a workplace traditional clinical placement with adult clients. Students' hours of experience within the simulation clinic were "counted" and contributed hours towards their overall clinical placement experiences across their degree program. The simulation placement at each university site was part of a course and therefore contributed to course credit. A simulation clinical educator worked with a group of 4 to 9 (mean = 6) students. Ten simulation clinical educators were recruited by the six universities across three states in Australia who participated in the research program. Prior to commencement of the simulation-based learning program, simulation clinical educators attended purpose-designed training delivered for approximately 11 hours over two days. Content of training focused on three components: a) background to simulation and its use in speech-language pathology; b) teaching and learning processes used within simulation in a clinical context; and c) detailed review and discussion of each of the 13 simulations included within the 5-day program.

Participants. All ten simulation clinical educators who worked with groups of students for the simulation-based learning program participated in this study. All were experienced clinicians who had previous experience as clinical educators in acute hospital and/or rehabilitation settings. Demographic details of participants are presented in Table 1.

Table 1

Participant demographics of simulation clinical educators

Participant ID	Years working as a speech pathologist	Years working in an adult setting/with an adult population	Work setting (acute, rehabilitation setting or mixture of both)	Years working as a clinical educator in clinical setting	Number of simulation clinics conducted as part of project*
CE01	17	15	Both	16	2
CE02	17	17	Acute	15	4
CE03	26	16	Both	15	1
CE04	7	7	Acute	4	4
CE05	17	5	Both	15	1
CE06	15	15	Both	10	7
CE07	21	21	Both	18	3
CE08	15	15	Both	13	7
CE09	21	21	Acute	11	2
CE10	19	19	Both	18	2
Mean	17.5	15.1		13.5	3.3
Standard deviation	4.97	5.34		4.25	2.21
Range	7-26	5-21		4-18	1-7

Note. *Some participants conducted simulation clinics within university programs with larger student numbers: therefore more simulation-based learning programs were conducted to enable all students to participate in this experience.

Data Collection. All participants consented to take part in a semi-structured interview with a single researcher, who was experienced in qualitative interviewing and not part of the simulation-based learning program or the research team. Interviews were conducted face to

face, either in person or over internet video conferencing, two to four months after the simulation clinical educator's final simulation clinic. The interviews followed a topic guide and ranged in length from 58-97 minutes (mean = 79 minutes). Interview questions were drawn from current literature and the researchers' understanding of simulation as a learning approach and the simulation-based learning program used in this study specifically. Questions explored simulation clinical educators' experiences as educators, their perceptions of the simulation-based learning program, including its format and authenticity, and students' engagement with learning. All interviews were audio-recorded and transcribed verbatim by an independent transcription service.

Data Analysis. Transcripts were thematically analysed using Braun and Clarke's six phase inductive approach (Braun & Clarke, 2006). First, transcripts were read in their entirety by one researcher, noting initial impressions and points of interest within the text. Secondly, individual transcripts were analysed systematically, and initial codes generated. Codes represented a basic summary of the content of segments of text. Text was coded multiple times if multiple meanings were identified within a single sentence or paragraph. Open coding of all participant data was completed by one researcher with review and discussion of emerging codes undertaken with two additional researchers. Next, patterns or themes were searched for across the initial codes for all ten transcripts. Conceptually related codes were grouped under sub-themes and themes in hierarchical relationships. A clear audit trail of the coding was available to all three researchers. Inductive analysis of the interview transcripts and determination of sub-themes and themes resulted from this review of the coding and agreement about clustering of codes by the three members of the research team. Themes were discussed to ensure reasonableness of interpretations, coherence of data within a theme, and discreteness of data across themes. Original transcripts were reread to ensure the themes and subthemes identified remained consistent with the original data. Themes were further refined, and names were clarified during the process of writing a narrative. Finally, an analytic report was written that included quotes from participants to illustrate authenticity for each theme and subtheme and to demonstrate analysis across and within individual participants.

Rigour was maximised throughout the data collection and analysis through the processes of adherence to the topic guide, both the interviewer and the researcher undertaking the primary analysis of transcripts being separate from the team who implemented the simulated-based learning program, and the detailed inductive analysis of interview data (Patton, 2002). Reflexivity of the analysis process was maximised through open discussion and reflective commentary as an analysis team, supporting individuals to attend to any unconscious biases which may have impacted on interpretation of the data and respect for the participant voice (Varpio et al., 2017).

Results

Simulation clinical educators spoke positively of their experiences in the simulation-based learning program and the impact on student learning. The interview transcripts revealed overlapping responses to the participants' experiences in terms of their role and their perceptions of this simulation-based learning program. Three inter-related themes were identified as follows:
- Clinical educator role same but different;
- Unique teaching and learning environment;
- Simulation facilitates transition to workplace practice.

Themes and subthemes are presented in Table 2 together with example quotes from the interview transcripts. In presenting the results under each of the three major themes, the subthemes are italicised and illustrated through numbered quotations from Table 2.

Table 2

Summary of themes, subthemes and example quotes

Theme	Sub-theme	Example Quotes
Clinical educator role same but different	Similarities	"I don't think it changes our role … It only enhances the role by providing some structure and organisation" (CE 03).
	Points of difference	Quote 2a "It gives you as a CE (clinical educator) multiple opportunities to practise your skills in supporting the students and giving feedback" (CE 07)
	Necessity for training	Quote 2b "The two-day training, I thought it was great… It provided a revision of clinical education skills as well as some information about simulation which I hadn't really had before. I think that the training would be really important for anyone to do" (CE 03)
Unique teaching/ learning environment	Focus on teaching	Quote 1a "You know what they (students) are going to get the next day…. I think I was so focused on their learning……you knew they were going to get opportunities to practice, and you knew what the overall learning was going to be". (CE 02)
	Safe learning environment	Quote 1b "They (students) can actually learn quite comfortably without feeling like they're interrupting the (patient) session inappropriately". (CE 09)
	Authenticity and engagement	Quote 1c "It's absolutely what you would expect on a real hospital ward". (CE 01)
		Quote 1d "Most of the students comment on the fact that the actors they think are actual people who have had a stroke, had Parkinson's…". (CE 08)
	Structure and intensity of learning	Quote 1e "That richness of the learning, the cases are set up, it's all structured. You can see what the learning outcomes are, and it's all very clear …" (CE 10)
	Feedback opportunities	Quote 1f "….it allows the student more opportunity to ask for more feedback and to get more feedback online than you could ever give online with real patients" (CE 01)
		Quote 1g "They have the benefit of a pre-brief session, debrief… a whole lot of structure and a whole lot of support and multiple people providing them feedback, but you don't get that in the clinical world…that protected time… that structure, and I think that is such an incredible skill-building tool for students, for them to have that exposure to that depth and level of debriefing and feedback" (CE 07).
Simulation facilitates transition to workplace practice	A "launching pad"	Quote 3a "It was a really awesome bridge, I think, between that theory in the classroom, but then ridding them (students) of their anxiety…….getting them to practise before they were thrown in with and actually seeing patients on the ward" (CE 04)
	Cannot replace real life	Quote 3b "You must have the real world experience …. it's not the same degree of responsibility, and that is a big step…" (CE 07)

Theme 1: Clinical Educator Role Same but Different. The subtheme, *similarities*, recorded the simulation clinical educators' views that their role within the simulation-based learning program was similar to their role as a clinical educator in a traditional clinical placement, including their specific role in facilitating student learning and students' development of competency. "I don't think it changes our role … It only enhances the role by providing some structure and organisation" (CE 03). The participants affirmed the role of clinical education in simulation and in the workplace as being about "student learning and growing students into professionals" (CE 10). The main points of difference were related to working in the unique teaching and learning environment described in the second theme. These differences were collated in a sub-theme, *points of difference*, while the third sub-theme, *necessity of training* describes participants' perceptions of training needs to prepare them for their simulation clinical educator role.

Points of difference corresponded to key variances associated with the simulation-based learning program's focus on teaching, intensity and specific feedback opportunities. For some simulation clinical educators, the focus on teaching afforded them the opportunity to improve their own clinical education skills (Quote 2a). A number of participants described changing their practice as a clinical educator by being exposed to different feedback and debriefing models: "It's changed the way I am as a clinical educator, because (now) I use a lot of the structure around (giving) the feedback, which I just love" (CE 10). The use of feedback or debriefing tools within the simulation-based learning program was the most reported variation between simulation clinical education and traditional placements. Because of these differences, training and support for simulation clinical educators with emphasis on feedback and debriefing tools were described as a necessity. Participants were able to readily apply skills learned in the training during the program (Quote 2b).

Theme 2: Unique Teaching and Learning Environment. This major theme represented participants' perceptions that the simulation-based learning environment provided them with opportunities to maximize student learning. Five subthemes were identified as follows:
- Focus on teaching;
- Safe learning environment;
- Authenticity and engagement;
- Structure and intensity of learning;
- Feedback opportunities.

Because the timetable of activities for each day and the presentation of cases and clinical details of the simulated patients (i.e., actors portraying the role of a patient) were known to the simulation clinical educators, they reported being well prepared and able to *focus on teaching* (Quote 1a). The *safe learning environment* was described as being consistent, yet varied, and a place where it was acceptable for students to make mistakes and ask questions. Participants described that the busyness and interruptions of a real-life hospital were removed, relieving pressure and demands on students (Quote 1b). Participants emphasised that the simulation-based learning program provided guaranteed and diverse learning opportunities – "I think it was nice that in the week of simulation, they (students) had the opportunity to do something acute, they could do something outpatient and something a bit more rehab – it's a nice, controlled environment that you can set up so they get that good foundational learning." (CE 04).

Another subtheme was *authenticity and engagement*. Despite the lack of 'real patients' and the busy demands of a real hospital ward, all participants agreed the environment felt authentic or

realistic (Quote 1c). Authenticity was seen as critical to students' engagement and was ensured through realistic supporting documentation (e.g. patient files), and the use of trained actors (Quote 1d) and realistic clinical props and equipment. Students were seen by the simulation clinical educators as engaged, with some initial scepticism from the students overcome through facilitation by the simulation clinical educators. Descriptions of *structure and intensity* of the simulation-based learning program formed a subtheme. A unique feature of the simulation environment identified by participants was the opportunity for students to receive highly structured or scaffolded learning opportunities (Quote 1e). Participants observed that running the program for five days provided an intensity and continuity of learning that allowed students to consolidate skills quickly. Participants spoke of being able to tailor sessions for individual students' needs.

A strong sub-theme was the *feedback opportunities* available in the simulation clinical environment. Simulation clinical educators described the benefits of being able to provide students with online (in the moment) feedback (Quote 1f) and the ability to stop and repeat tasks to allow for improved student performance. The amount of dedicated time and structure for self-reflection and debriefing available in the simulated learning program environment in contrast to real life clinical placements was also described as having a positive impact on student learning (Quote 1g).

Feedback from the perspective of the simulated patients (actors) was highlighted as a powerful learning opportunity for students – "But I think what was really powerful was when they (simulated patients) came out of character and provided feedback to the students. That was amazing……" (CE 10). The opportunity for peer observation and feedback was also seen as a point of uniqueness: "That opportunity of students giving peer feedback is massively beneficial because they (peers) notice stuff that we don't notice…They have a very different perspective of what is an achievement or a challenge" (CE 07).

Theme 3: Simulation Facilitates Transition to Workplace Practice. The simulation-based learning program was consistently described by participants as "a launching pad": a mechanism for allowing students to develop foundation level skills that facilitate transition into the workplace. Participants conceptualised this as bridging a gap between theoretical learning before commencing learning in the workplace via traditional clinical placements (Quote 3a). Participants described how the simulation experience had contributed to student preparedness for workplace clinics in terms of building student confidence: "In terms of confidence ..it's palpable" (CE 08); improved communication skills: "Some of those real generic skills around communication and around interacting with others" (CE 10); and preparation for clinical duties: "I can see the huge benefit in being able to feel comfortable with a patient…being aware of a hospital environment…they will be less shocked by that… and be able to focus on what their task is and who the patient is and what they need to do with them" (CE 09).

Despite the perceived benefits, all ten participants stated their belief that the simulation-based learning program *cannot replace real life*. Traditional clinical placements were described as placing additional demands on students, more time pressure, more unpredictability, and more confrontation with the potential emotional trauma of working with real life patients (Quote 3b). Participants reiterated the importance of students gaining access to such traditional clinical placements in order to experience this time-pressured, complex real-world environment.

Discussion

This study explored the perceptions of simulation clinical educators about the speech-language pathology simulation-based learning program and their role in its implementation. The simulation clinical educators in this study were uniquely positioned as they had been immersed in their educator role in the simulated clinical environment and were experienced clinical educators in the dynamic world of workplace practice. Thus, they were able to compare and contrast features and facilitation practices in each learning environment and provide informed commentary about the observed impact of simulation on student learning for professional practice. While impacts of simulation and components valued by students have been previously reported (for example, Hill et al., 2013; Howells et al., 2019; Stead et al., 2022), this study adds the important perspectives of simulation clinical educators who are "on the ground" observers of student learning and outcomes. Participant data in this study elicited three themes:

- The unique teaching and learning environment;
- Similarities and differences in the educator role;
- Opportunities provided by simulation to facilitate transition to workplace practice.

These themes are integrated in the discussion below.

The simulation clinical educators highlighted unique benefits which teaching and learning in a simulation environment offered to students in the middle third of their program of study. This finding corroborates the results of longstanding research focused on student perceptions of simulation. Such research has consistently confirmed that speech-language pathology students value simulation and perceive that it offers benefits for learning and development of knowledge and skills for professional practice (Estis et al., 2015; Hill et al., 2013; Howells et al., 2019; Miles et al., 2016; Quail et al., 2016; Shorland et al., 2018; Stead et al., 2022; Ward et al., 2015). Identified benefits of simulation include the opportunity to learn in a safe environment (Rudolph et al., 2014; Ryall et al., 2016) and the advantage of multiple sources of feedback, including from simulated patients (Cleland et al., 2009). Because simulation is costly to implement (Maloney & Haines, 2016), it is critical that these advantages are maximized to both justify costs and harness the unique teaching and learning opportunities that the environment offers.

Simulation clinical educators in the current study reported that they were able to prioritise and structure student learning because they were not required to attend to real patients' needs. In workplace clinics, clinical educators typically undertake dual roles, including managing their clinical caseload and ensuring patient care and safe service delivery, while also supporting student learning. Negotiating and balancing these two roles can present challenges for the clinical educator (Manninen et al., 2015). The simulation clinical educators appreciated the opportunity to spend more time with their students without having to balance clinical learning with service priorities. A focus on clinical teaching and learning was reported by participants to be facilitated by the theoretically-informed simulation-based learning program structure, which created predictability through known cases, a range of planned activities, and the provision of time for structured discussion and feedback over a five day period (Hewat et al., 2020; INACSL, 2021b). The student-centred focus of the simulation-based learning program afforded the simulation clinical educator opportunities to respond to individual students' learning needs when required. Consideration of individual learner preferences is highlighted as best practice in simulation facilitation (INACSL, 2021a).

A need to take advantage of the unique benefits of simulation as a teaching and learning tool also has implications for components included in the simulation-based learning program.

Enhanced feedback opportunities emerged as a strong discussion point for simulation clinical educators in this study who identified feedback as a key strength of the simulation-based learning program. A design component considered critical to successful learning in a simulation clinic is incorporation of multiple opportunities for debriefing and feedback (INACSL, 2021b), reported to be valued by students (Doherty-Restrepo et al., 2018; Solli et al., 2020). Participants described closing the feedback loop by implementing a cycle of pause, discuss, feedback, followed by student repetition of the task. This process is consistent with conceptualisation of feedback as a valuable process students engage in to improve the quality of subsequent work (Dawson et al., 2019) rather than a one-way, clinical educator led act.

There may be a variety of reasons why simulation clinical educators highlighted feedback opportunities in their discussion of simulation-based learning program design. They were given explicit training in feedback and debriefing techniques, focusing on the reflective nature of this process and its positive role for learning (Molloy et al., 2020) and how to do feedback "well." Indeed, research in medical education indicates that doing feedback "right" ensures learning is not pushed to the background (Boud & Molloy, 2013) and minimises the risk of poor feedback doing harm to students (Lefroy et al., 2015). Given that simulation clinical educators did not need to balance service delivery and student learning needs, they were in a better position to facilitate debriefing and self-reflection, and provide rich feedback. A recent review revealed that debriefing/coaching/feedback was the most common topic for simulation educator training (Paige et al., 2020), highlighting its critical role within simulation design (INACSL, 2021b, 2021c).

Participants in this study also valued facilitating feedback to the students from the simulated patients and student peers, reporting this as a unique benefit of simulation and one that offered a different perspective to feedback they provided to students. The value of peer feedback has been noted by students in previous speech-language pathology simulation research (Penman et al., 2020b). Therefore, training of simulation clinical educators needs to include a clear focus on feedback as a means to enable students' self-reflection and to also elicit evaluation from their peers (INACSL, 2021a). Maximising student learning through peer feedback using observation and discussion is to be encouraged (Mandrusiak et al., 2014). In addition, training of simulated patients in the provision of feedback is important to maximise its authenticity and to ensure students gain from the feedback offered (Cleland et al., 2009).

Authenticity of the simulation environment was perceived by educators in this study to be an important contributor to facilitating students' transition to learning and practice in the workplace. Participants valued the realism of clinical documentation, simulated patient performance and clinical "props" and believed that this enhanced student engagement. This aligns with the finding that students value simulation environments that physically resemble typical placement contexts (Hamstra et al., 2014) and report that authenticity assists them to suspend disbelief and immerse themselves in learning (Hamstra et al., 2014; Hill et al., 2013). The nature and role of fidelity or authenticity in simulations is complex, and the assumption that high fidelity simulation environments always lead to better learning and transfer to practice has been contested (Norman et al., 2012). The level of and type of fidelity required for the simulation activity will depend on factors such as learning objectives (INACSL, 2021b), cognitive load (van Merriënboer & Sweller, 2010), and the relative importance of fidelity types (Naismith et al., 2020). Findings from our study suggest that the clinical educators' perception that the simulation-based learning program supported students in transitioning between learning at university and in the workplace was not entirely founded on fidelity (i.e. the authenticity of cases and clinical setting). Other aspects that facilitated this transition of

learning included students' development of cognitive schemas or organised patterns of thinking that underpin competent professional practice (van Merriënboer & Kirschner, 2018). These aspects were represented across all three themes and are discussed below.

Transfer of learning from one context to another to enable competent professional practice, such as from a simulated to a real workplace environment, is facilitated by the development of high-quality cognitive schemas that support professional judgement and action (van Merriënboer & Kirschner, 2018). Findings from research by Ginsberg and colleagues (2016) provide insights into the building of schemas for diagnostic reasoning in speech language pathology and the importance of developing pedagogy that fosters the development of schemas. There are two types of schemas that facilitate competent practice. Firstly, pattern-based schema enable recognition of likely diagnoses or courses of action founded on a set of successfully solved clinical problems and drawn on when faced with novel clinical problems (Doeltgen et al., 2018; Norman, 2005). Secondly, process-based schema are heuristics that guide professional action or underpin competent practice, for example, how to gather the data needed to determine a correct diagnosis or how to communicate with a distressed patient (van Merriënboer & Kirschner, 2018). The richness and accuracy of these schemas are developed through interacting with progressively more complex cases and applying them with similar but different patients and contexts.

Simulation clinical educators noted components of the simulation design that supported transfer. These included increased and high-quality feedback from multiple sources and the relevance of case selection and learning activities that had explicit links to students' future workplace clinical placements. Thus, the structure and design of the simulation-based learning program (Barnett & Ceci, 2002; van Merriënboer & Kirschner, 2018) were important in managing students' cognitive load and scaffolding transfer of learning. Furthermore, simulation clinical educators noted that simulation-based learning enabled students to practice learning in a workplace type of environment while not having to manage those aspects that can make learning in real workplace clinics challenging (e.g., the need to prioritise patient care over student learning) (Le Maistre & Pare, 2004).

While it must be noted that the data obtained in this study did not directly address students' development of cognitive schemas, it was the perception of the simulation clinical educators that the simulation-based learning program enabled positive change in students' process schemas (how to communicate and interact with others). In addition, they emphasised that the program developed students' social-emotional skills (being comfortable and confident in their professional role and context), also recognized as critical for future professional practice. These social and interpersonal skills are commonly characterised as "soft skills" and are often viewed as difficult or, perhaps impossible, to teach in academic courses (Farmer, 2015). Findings from this study highlight that the student-focused, structured, and controlled learning environment of simulation afforded the simulation clinical educators unique opportunities to facilitate students' development of generic professional competencies, including these critical "soft skills." Simulation clinical educators emphasised, however, that while they highly valued the way in which the simulation enhanced students' competency development, the facilitated learning that occurs within the workplace (placements) is an indispensable step in developing students' readiness for future professional practice.

Of particular note was that development and transfer of competency through participation in the simulation also applied to the simulation clinical educators. Participants highlighted that they had applied feedback models and skills learnt and used in the simulation environment to

their subsequent support of student learning as clinical educators in the workplace. This would suggest that simulation clinical educators' schema regarding processes that support learning through participation, were enriched and transferred from a simulated to actual workplace. These findings are similar to those reported in a study by Holdsworth and colleagues (2016) where physiotherapy clinical educators who attended two 3-hour simulated learning environment workshops (which focused on experimenting with scaffolding and conversational relationship-building approaches to supervision) subsequently reported greater self-efficacy about their teaching practice (Holdsworth et al., 2016). In particular, they perceived positive change in their capacity to respond to students' learning needs within typical placement contexts.

Implications for Practice

The findings of this study have yielded important considerations for the development and implementation of simulation-based learning programs for speech-language pathology students and indeed for students in other health professions. In particular, this study has highlighted the importance of training for both simulation clinical educators and simulated patients, the need to ensure an authentic simulated learning environment, and the critical role well-designed debriefing and feedback play in maximizing student learning. In addition, participants emphasized the value of key design components of the simulation-based learning program to support transfer of learning, such as a focus on "soft skills" and scaffolded, graded learning activities.

Limitations and Future Directions

Whilst a strength of this study was its inclusion of the perspectives of all simulation clinical educators who delivered the simulation-based learning program, it is acknowledged that their views are of just one program in one health profession and may not be more broadly representative of all simulation-based learning activities. Exploration of the views of simulation clinical educators from a range of professions across a breadth of learning activities would add to this emerging evidence base. In addition, this study has highlighted the notion of transfer of clinical educator skills from simulation to other learning contexts (e.g. the workplace). Future research could explore those specific components of teaching and learning in a simulation-learning environment that may be effectively applied to support clinical education in workplace contexts more broadly. In addition, future research could evaluate the specific impact of training on participants' understanding of their role and their implementation of the simulation-based learning program.

Conclusion

This study has offered previously unexplored insights into speech-language pathology simulation clinical educators' perceptions of their role as facilitators of students' clinical learning and competency development when supporting students within simulation-based learning environments. Findings of this study have highlighted the importance of harnessing the unique benefits of simulation as a teaching pedagogy to maximize its impacts on student learning and justify its costs. Simulation clinical educators' reflections that teaching practices learnt within a simulated environment can be transferred to typical clinical placement contexts is a pleasing outcome. As such, this finding contributes to the growing evidence base related to effective teaching and learning practices for speech-language pathology students. Future research could further explore components of simulation and training needs that facilitate

behaviour change for clinical educators, in workplace contexts and clinical education and supervisory experiences more broadly, while maximising student learning outcomes.

Conflict of Interest/Financial Disclosure

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