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"I felt more prepared and ready for clinic": Connections in student and clinical educator views about simulation-based learning

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Abstract

Clinical placements supported by a clinical educator in real clinical environments are beneficial for student learning. Student preparedness for placements has been examined across health professions. Simulation-based learning (SBL) is recognised as a valuable means of preparing students for practice. Whilst students' perceptions of SBL activities has been investigated, insights from clinical educators are less researched. This study aimed to explore speech pathology students' perceptions of clinical learning immediately following a SBL experience and perceptions of both the student and clinical educators following a subsequent clinical placement. Thirteen third year undergraduate speech pathology students and five clinical educators participated in this research. Students completed an SBL program prior to a six-week clinical placement. A student focus group discussion was held following the SBL experience and semi-structured interviews were conducted with individual students and clinical educators at the completion of placement. Thematic analysis of the data was conducted and themes were summarised using a thematic network tool. Overall interpretation of data from the students' and clinical educators' perspectives revealed an overarching global theme suggesting that *simulation offers unique learning benefits to prepare students for typical clinical placement.* As students and clinical educators demonstrated shared perceptions that SBL offers unique learning benefits for speech pathology students, this finding further supports the inclusion of SBL within university program curricula.

I INTRODUCTION

Speech pathology is a practice-oriented discipline in which speech pathologists assess, diagnose, and treat communication and swallowing disorders across the lifespan (Speech Pathology Australia, 2010). Whilst it is important for future speech pathologists to obtain theoretical knowledge in their pre-professional training, experiential learning in clinical practice is imperative, and indeed it is mandatory that students have opportunities to develop clinical skills required for practice. Tertiary programs are thus required to provide students with quality clinical placements to facilitate their application of theory to practice (Speech Pathology Australia, 2010).

To ensure that health students have an opportunity to develop the necessary clinical skills and competencies, clinical placements are embedded across tertiary health programs and account for a significant proportion of the total program hours (Gribble et al., 2017). Typically, these clinical placements are scaffolded to enable gradual development of competencies over time. For example, in the earlier stages of a speech pathology program students take the role of an 'observer' whereby they observe professionals in practice. Then, in the later stages, following engagement in further academic learning, students participate in clinical placements that allow them to be active in their own learning. During such placements, students are required to demonstrate competency in their clinical skills so that they can assess and treat clients across the range of speech pathology practice areas (speech, language, swallowing, voice, fluency, and multimodal communication) as defined by the profession's Competency-Based Occupational Standards for Speech Pathologists – Entry Level (CBOS: Speech Pathology Australia, 2011).

Typical speech pathology clinical placements involve a student, or group of students, working directly with patients/clients under the supervision of an experienced clinical educator, a qualified speech pathologist, whose role is to support student learning whilst on clinical placement (Speech Pathology Australia, 2018). Although the terms 'preceptor', 'clinical supervisor', and 'clinical teacher' are also used in the health sciences, the term 'clinical educator' is used in this paper to reflect the common terminology used in Australian speech pathology programs (McAllister & Lincoln, 2004; Rose & Best, 2005; Speech Pathology Australia, 2018). Clinical placements are undertaken in a range of workplace settings, including schools, hospitals, residential aged care facilities, community-based centres, private practice, and not-for-profit organisations. Clients seen within these placements vary from babies to older adults with a myriad of difficulties in communication and swallowing.

Research has explored the benefits of clinical placements for student learning (Billett, 2011). Speech pathology students have reported increased understanding of their role whist on placement and other benefits such as developing their expectations and practice skills (Speech Pathology Australia, 2018). Whilst some students have successful placement experiences, others can experience fluctuations in their emotional intelligence which includes the ability to recognise, understand and manage emotions (Gribble et al., 2017). Additionally, students may have difficulty in translating theory to practice, struggle and/or fail clinical placements (Davenport et al., 2017), and in some circumstances, develop anxiety related disorders (Sun et al., 2016). Students have reported responses caused by anxiety such as insomnia, lack of confidence and headaches whilst on placement (Sun et al., 2016). The notion of student anxiety in association with clinical placements has been explored in various health programs with acknowledgement that students were subject to stress and anxiety in this context (Gibson et al., 2015).

In a review of the literature examining students who are failing on placement, Davenport and colleagues (2017) reported that in addition to student anxiety, there are generally a number of interrelated personal (e.g., poor communication skills) and environmental (e.g., health or financial stress) factors that contribute to difficulties on placement. Factors that lead to greater success on placement have also been investigated, including student preparedness. Research has shown that clinical educators believe that characteristics such as student willingness to be involved in learning and the placement, professionalism, and personal attributes such as positivity and eagerness to learn are key factors influencing student preparedness for clinical placements (Banneheke et al., 2017; Chipchase et al., 2012). Given the potential impact of anxiety and

student preparedness on clinical placement outcomes, alternative learning approaches such as simulation-based learning (SBL) have been introduced.

Simulation is recognised as both a potential replacement for traditional clinical placement time and a valuable means of preparing students for practice within the health professions, assisting with generalised success on placement (Larue et al., 2015). Outcomes of randomised controlled trials conducted within physiotherapy (Blackstock et al., 2013; Watson et al., 2012), nursing (Hayden, 2014), occupational therapy (Imms et al., 2018) and speech pathology (Hill et al., 2020) have determined that a proportion of clinical time can be replaced by simulation with no loss of competency. While this research is promising for future integration of simulation into health sciences curricula it has not explicated the means by which SBL has assisted students in achieving this equivalent competency outcome. Research which has investigated the contribution of simulation in preparing students for placement highlights some potential mechanisms for how this works.

Within speech pathology, a number of studies have investigated the development of student preparedness for placement using SBL activities in a range of contexts. For example, students reported a significant increase in perceived preparedness for working in a hospital environment after completing simulation workshops targeting dysphagia skills (Miles et al. 2016), and Ward et al. (2015) found that incorporating human patient simulation assisted in preparation for paediatric dysphagia management. More recently, Penman et al. (2020) explored the use of SBL activities across a range of practice areas and with a variety of patient presentations. The study concluded that students valued SBL activities, perceived an increase in confidence levels and reported enhanced preparedness for clinical placements (Penman et al., 2020). Speech pathology students' perceived levels of anxiety when undertaking SBL has also been explored (Hill et al., 2013; Penman et al., 2020; Rose et al., 2017; Ward et al., 2015). These studies reported that whilst students perceive high levels of anxiety prior to engaging in clinical activities within a SBL environment, they reported reduced levels of anxiety following this learning activity. SBL is therefore perceived by students to reduce anxiety levels and assist with preparedness for clinical placement. In addition, students have reported improvements in their skills, knowledge, and confidence levels following engagement in SBL activities (Hill et al., 2013; Rose et al., 2017; Ward et al., 2015).

Although research has explored student perceptions of SBL, to the authors' knowledge, there has been a lack of research exploring the perspectives of clinical educators involved in SBL activities. Therefore, this study aimed to explore speech pathology students' perceptions of clinical learning immediately following a SBL experience and perceptions of both students and clinical educators following a subsequent clinical placement. This study also investigated the role of simulation in preparing students for clinical placement from the perspective of both the students and clinical educators.

II METHOD

Ethical clearance for this study was obtained from The University of Queensland Human Research Ethics Committee (approval number 2014001462).

A Participants

Two participants groups were involved in this study: (1) undergraduate speech pathology students and (2) speech pathology clinical educators. All participants were invited to participate in the study via verbal and/or email correspondence from the project team.

Speech pathology students. All third year undergraduate students (n=99) enrolled at a single university were invited to participate. This particular cohort of students were recruited as at this point of their study program they had limited experience in adult clinical practice. Twenty-six students initially expressed interest in participating however, 13 students withdrew due to personal circumstances and/or clinical placement timing conflicts. A total of 13 speech pathology

students participated in the study, with students ranging in age from 19-36 years (*M* = 24.3 years). Twelve of the 13 student participants were female, reflective of the proportion of females in the speech pathology workforce (Health Workforce Australia, 2014).

Speech pathology clinical educators. Following written invitation, five out of 13 clinical educators of the speech pathology students who had participated in the SBL program agreed to participate in this study. There were one male and four female educators with varying levels of clinical and clinical education experience (*M* = 5 years, range = 3 years 10 months to 7 years 10 months). Clinical educators worked in a variety of clinical settings across both paediatric (not-for profit organisation, children's development team and disability services) and adult caseloads (acute hospital with/without an outpatient rehabilitation service). Placements were located in metropolitan, regional and rural areas across Australia. The clinical educators had not been informed by the researchers that the students had attended the SBL program prior to attending the clinical placement. This information was withheld in order to limit bias or influence the clinical educators' perceptions of the students' performance on commencement of and/or during the clinical placement.

B Study Design

An inductive study design with a qualitative descriptive approach (Bradbury-Jones et al., 2017) was used to investigate the perspectives of both participant groups on the role of SBL on clinical skill development and preparedness for placement. Qualitative descriptive studies summarise events of a particular experience whilst remaining close to the data (Sandelowski, 2000), and therefore, enable a thorough and synergistic evaluation of the data.

C Procedure

Simulation-based learning program. Students in this study volunteered during their mid-semester vacation to complete the five-day SBL program prior to attending a six-week clinical placement in varied workplace contexts. The SBL activities included in this study were developed and trialled prior to using within a broader national simulation randomised controlled trial (Hill et al., 2020). All learning activities were designed to develop students' clinical skills related to communication, interviewing, gathering case history information, assessment, intervention, and clinical reasoning when working with adults presenting with a communication and/or swallowing disorder.

Table 1
Structure of the five-day simulation-based learning program

Day	Simulation	Case details	Setting	Clinical activity
1	1	65 year old male (left hemisphere stroke)	Inpatient rehabilitation Speech pathology office	Clinical educator led session: Formal assessment results, aphasia education, goal-setting, expressive language treatment
	2			Student led session: Formal assessment results, aphasia education, goal-setting, expressive language treatment
2	3	66 year old female (left hemisphere stroke)	Acute hospital ward	Initial clinical swallowing examination (CSE) Provision of assessment findings to nursing staff
	4			Initial communication assessment of speech and language skills. Provision of assessment findings to nursing staff
3	5	35 year old female (multiple sclerosis)	Acute hospital ward	Communication (speech) screen and CSE
	6	45 year old female (brain tumour)	Acute hospital ward	Pre-operative cognitive-communication assessment Discussion of post-operative care
	7	89 year old male (dementia)	Acute hospital ward	Interprofessional interaction with dietitian
	8	70 year old male (delirium post infection)	Acute hospital ward	Initial CSE, diet modification recommendations, instrumental assessment
	9	66 year old female (left hemisphere stroke)	Acute hospital ward	Treatment for swallowing, speech and language
4	10	65 year old male (left hemisphere stroke)	Inpatient rehabilitation Speech pathology office	Treatment targeting expressive language
	11	36 year old male (traumatic brain injury)	Outpatient community care	Formal speech assessment. Report writing
5	12	70 year old male (delirium post infection) 60 year old female (patient's wife)	Speech pathology office	Patient education regarding swallow safety requirements at home on a modified diet
	13	Case handover	Meeting room	Case handover to clinical educator with information regarding future intervention

All students were randomly assigned to one of two groups for completion of the SBL program. Each group included one simulation clinical educator who was an experienced speech pathologist and clinical educator. In this study, one group had seven students and the other, six students. Throughout the SBL program, students engaged in 13 different SBL activities across the five days involving a range of teaching and learning modalities (refer to Table 1 for a summary of the SBL). A number of standard university teaching rooms were reconfigured to simulate: 1) acute hospital rooms with standard hospital beds and typical materials and equipment, and 2) speech pathology outpatient clinic rooms (or offices). An additional teaching room was used for the pre-brief and debrief of SBL activities. Eight simulated patients were trained to portray a total of six patient cases and two interprofessional team members (nurse and dietitian) over the five days. Different modes of simulation were used such as role-play, immersive learning and the pause-discuss method. According to Nestel and Bearman (2014), use of the pause-discuss method provides opportunity for direct instruction from the clinical educator and allows for synchronous questioning and deeper discussion by pausing the simulation. Students were involved in all SBL activities in the role of student clinician, patient or observer. Students received feedback from the simulation clinical educator, their peers within each of the groups and on three separate occasions they received feedback from simulated patients. Students' clinical competency was not formally assessed at the conclusion of this program.

Data collection. Data was collected on two occasions. On occasion 1, immediately following the last simulation session in the SBL program on the final day, two student focus groups were conducted. On occasion 2, at the completion of the clinical placement six weeks after the SBL program, individual semi-structured interviews were conducted with 10 students and five clinical educators via telephone. Not all students involved in the focus groups participated in the individual interviews due to limited availability. All student focus groups and interviews were conducted by the final author (NS): a researcher not directly involved in the SBL program. A research assistant independent of the research team conducted interviews with the clinical educators.

D Data collection tools

Focus groups. Within the focus group, students were asked to discuss reasons why they volunteered to participate in the SBL program, previous simulation experience and their experience within this SBL program specifically with respect to confidence levels. Each of the focus groups also explored information regarding their learning within the SBL and what skills could be taken into their next clinical placement, any potential barriers to this learning environment, the overall structure of the program, and how they would describe the SBL program in one word. Both focus groups were video and audio recorded and transcribed verbatim by the first author for analysis. The focus groups were 63 minutes and 49 minutes in duration, respectively.

Student interviews. All individual interviews were audio recorded and transcribed verbatim by the first author. Questions related to how the students felt commencing their clinical placement, reflections on the SBL program and its impact on their learning whilst on placement, any skills developed during the SBL program that assisted them in their clinic, and any other comments regarding the SBL program and their learning. The length of interviews ranged from 17 – 29 minutes (average = 23.3 minutes).

Clinical educator interviews. Clinical educators were asked to provide context regarding the clinical placement (e.g., caseload details, activities the student was involved in, opportunities for the student to collaborate with other professionals), and their perceptions regarding each of the students' preparedness for the placement and how the student approached their learning. Interviews ranged from 20 – 32 minutes duration (average = 27 minutes).

E Data analysis

Qualitative data from the student focus groups, student interviews, and clinical educator interviews were analysed separately using thematic analysis, following the six phases described by Braun and Clarke (2006). Phase 1 of the analysis ensured meaningful interpretation of the responses. In phase 2, data interpretation led to the extraction of condensed meaning units which were then labelled into codes. Grouping of the codes in phase 3 directed the identification of sub-categories and themes (Braun & Clarke, 2006). Coding of all data was conducted initially by the lead author in this study (AP). To ensure rigour across each set of data, in phase 4, all codes, categories and themes were reviewed by another member of the research team with revision leading to further shaping of themes (Braun et al., 2015). Further refinement of the coded data occurred in phase 5 whereby themes were defined and named. Consensus was then achieved by all authors completing the final phase in this process (Braun & Clarke, 2006). Table 2 depicts the thematic analysis process for one of the themes from the post-simulation student focus groups.

Table 2
Exemplar thematic analysis process for one of the themes from the post-simulation student focus group

Theme	Category	Code	Participant quote
Simulation enables students to prepare for and transfer skills to next placement (n=20)	Simulation offers a starting point for learning (n=6)	Simulation is a warm up for the real world	*"It is an intensive warm-up. It is just the best start to the real world. Because while they are a real patient they are an actor so it is a good stepping stone rather than no adult experience here is the hospital and it is a real one."* (S5FG)
	Simulation assists with preparation for clinical placement (n=10)	Simulation has prepared students for following placement by increasing knowledge	*"And it was always how do you, how would that help you in the hospital? Next week what are you taking from this in the real world?"* (S1FG) How has this week contributed to your preparation for next week? *"Tenfold knowledge."* (S1FG)
		Simulation enabled student to be prepared so they could get most out of the placement	*"… before I went into a placement so I look vaguely intelligent but also to get the most out of the placement instead of spending three weeks lost."* (S6FG)
	Able to transfer learning from simulation (n=4)	Transferrable skills are gained from simulation	*"… a lot of the skills are those transferrable skills like the ones that are developed… It is just the general communication, that general being present, being a clinician."* (S11FG)

Following identification of themes for each data source, commonality of themes was identified. Once all authors established consensus of collective themes from both the students and clinical educators, analysis of the combined data set was conducted using a thematic network tool (Attride-Stirling, 2001). A thematic network assists the thematic analysis process through organising qualitative data and facilitating "structuring and depicting of these themes" (Attride-Stirling, 2001, p. 387). The common themes that emerged in the thematic analysis from each data source were initially grouped, ordered hierarchically according to the basic theme level and then grouped under organising theme levels (Attride-Stirling, 2001). A global theme was then deduced at a macro level to summarise all main themes of the data (Attride-Stirling, 2001). Generating the thematic network following a thorough thematic analysis enabled all data to be evaluated, integrated and ultimately corroborated. Importantly, using a thematic network revealed holistic interpretation of the data.

III RESULTS

Thematic analysis revealed a total of 14 themes across all participant groups and data sets. Table 3 depicts the condensed meaning units, codes, categories and final themes conceptualising the perceptions of the students and clinical educators via focus groups and/or individual interviews.

Table 3
Outline of condensed meaning units, codes, categories and themes for all data sets

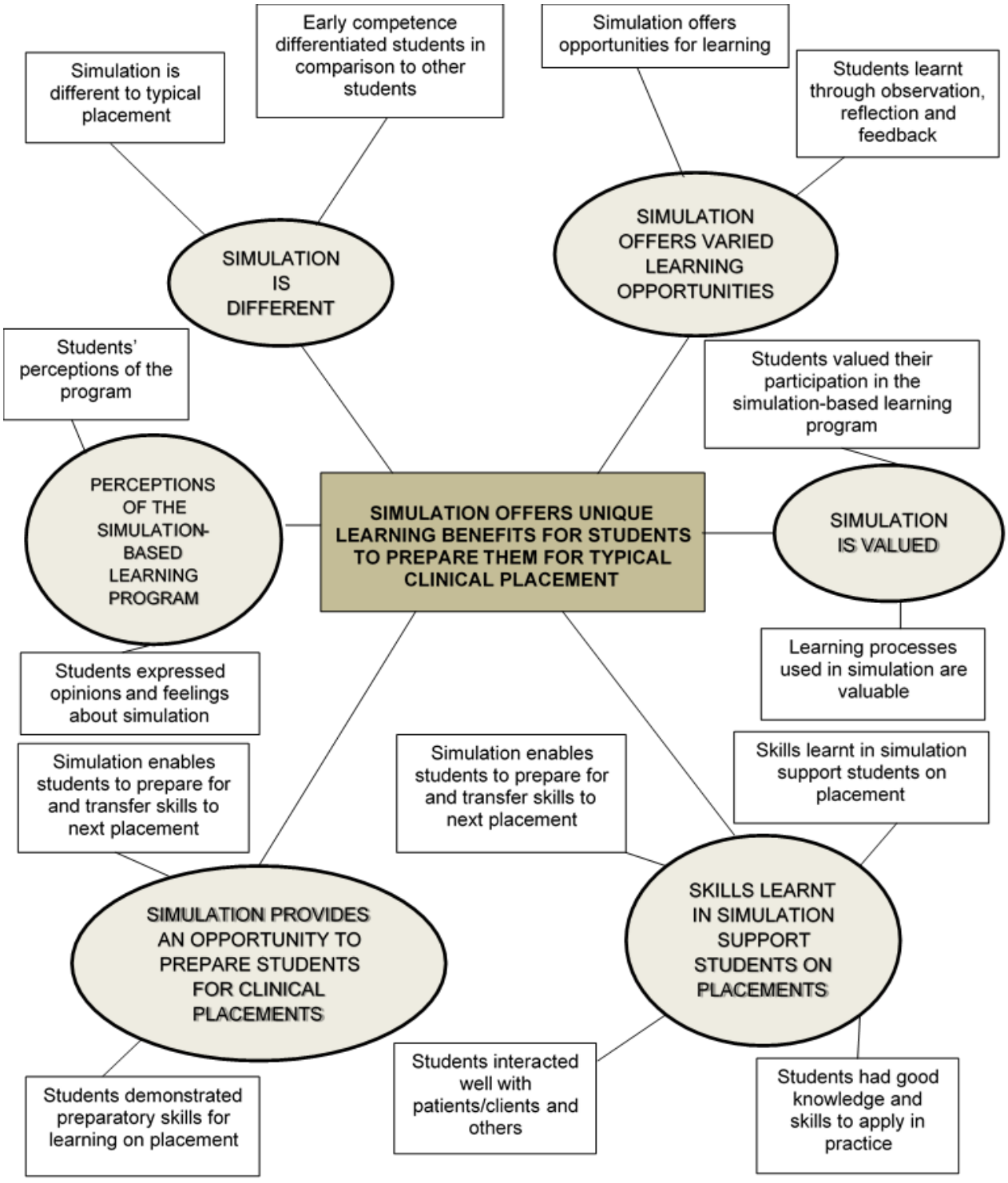
Participant group	Condensed meaning units (n)	Codes (n)	Categories (n)	Themes
1. Student focus groups	448	188	22	1. Simulation offers opportunities for learning
				2. Students' perceptions of the simulation program
				3. Students valued their participation in the simulation program
				4. Simulation is different from typical placement
				5. Assessment in simulation changes how students approach learning
				6. Simulation enables students to prepare for and transfer skills to next placement
2. Student interviews	706	571	29	7. Learning processes used in simulation are valuable
				8. Skills learnt in simulation support students on placement
				9. Students expressed opinions and feelings about simulation
3. Clinical Educator interviews	271	216	14	10. Early competence differentiated students in comparison to other students
				11. Students demonstrated preparatory skills for learning on placement
				12. Students learnt through observation, reflection and feedback
				13. Students interacted well with patients/clients and others
				14. Students had good knowledge and skills to apply in practice

From the initial 14 themes, all themes were extracted as basic themes in the process of analysis for a thematic network (Attride-Stirling, 2001). The grouped basic themes created six organising themes (see Table 4). In the final stage of thematic network analysis, the collective data sets revealed an overarching global theme of *simulation offers unique learning benefits to prepare students for typical clinical placement.* Figure 1 depicts the classification of themes into a network revealing the overall interpretation of the data from both the students' and clinical educators' perspectives.

Table 4
Collation of themes from participant groups

	Organising theme	Student post-simulation focus group	Student post-placement interviews	Clinical Educator post-placement interviews
1. Themes related to *difference*	Simulation is different	Simulation is different from typical placement (n=18)		Early competence differentiated (simulation) students in comparison to other students (n=16)
2. Themes related to *learning opportunities*	Simulation offers varied learning opportunities	Simulation offers opportunities for learning (n=73)		Students learnt through observation, reflection and feedback (n=34)
		Assessment in simulation changes how students approach learning (n=25)		
3. Themes related to *preparation*	Simulation provides an opportunity to prepare students for clinical placements	Simulation enables students to prepare for and transfer skills to next placement (n=20)		Students demonstrated preparatory skills for learning on placement (n=77)
4. Themes related to *value of simulation*	Simulation is valued	Students valued their participation in the simulation-based learning program (n=29)	Learning processes used in simulation are valuable (n=165)	
5. Themes related to *perceptions*	Perceptions of the simulation-based learning program	Students' perceptions of the simulation-based learning program (n=23)	Students expressed opinions and feelings about simulation (n=197)	
6. Themes related to *skills*	Skills learnt in simulation support students on placements	Simulation enables students to prepare for and transfer skills to next placement (n=20)	Skills learnt in simulation support students on placement (n=209)	Students interacted well with patients/clients and others (n=50)
				Students had good knowledge and skills to apply in practice (n=39)

Figure 1
Visual representation of thematic network analysis of global theme (dark grey), organising themes (light grey) and basic themes (Attride-Stirling, 2001)



The organising themes are described below with example quotes from participants, coded as follows: Student 1 Focus Group (S1FG), Student 10 interview (S10) and Clinical Educator 2 interview (CE2).

A Organising theme 1: Simulation is different

The theme of *difference* was strong across the three sets of data. Firstly, nearly all the clinical educators expressed that they were able to differentiate the students they supervised who had participated in the SBL program from other students on placement who had not, *"…we did have another student here at the same time and there was a clear difference in the way they interacted…"* (CE2). Secondly, some of the students themselves also sensed a difference between the teaching approaches used by clinical educators that they had encountered within the SBL environment and their other placement clinical educators, *"…in a clinical situation the focus is for the clinical educators obviously on the students and the patients whereas in this situation… clinical educators are really focused on our learning…"* (S9FG). In addition, both participant groups perceived differences related to SBL experiences. Students commented that learning was different in simulation, *"You can literally stop the clock and you can think and ask other people whereas in a real hospital you can't"* (S10FG). Reflective practice was also perceived to be different in simulation, *"You often don't get time for that [reflection] in clinical placements. It [reflection] is not as meaningful or impactful because it is just a 'make sure those are done'"* (S6FG).

B Organising theme 2: Simulation offers varied learning opportunities

Varied opportunities to learn within the SBL program was a theme expressed by the students. A safe, realistic learning environment in simulation was especially valued by students, *"It is a safe environment at the end of the day, you know you are not going to harm someone"* (S2FG). The safety of the environment was directly related to a change in confidence levels, *"…it [simulated learning program] was just such a safe learning environment [as it] gives you the confidence of being ok"* (S10). Additionally, students reflected on the benefit of the different learning approaches in simulation including the opportunity to pause and think about their learning and the repeated practice, *"By the end I think we were so confident in our own skills and having that practice… this isn't what I expected but I have confidence in myself"* (S13FG).

Conversely, students discussed the concept of how incorporating assessment within a SBL environment has the potential to change how a student would approach their learning. A student reported that, *"If simulation clinic [simulated learning program] was assessed I would have worked to the learning outcomes and ignored other experiences"* (S6FG) and, *"I think if we were being assessed [in the simulated learning program] I wouldn't be able to be open myself to the learning environment"* (S4FG). Learning through mistakes in the SBL environment was appreciated by the students, however this was different in comparison to their usual assessed clinical placements, *"In our placement when we are being assessed, if you want to learn you can't make mistakes …but in this simulation you can learn through mistakes*" (S4FG).

Shared appreciation for specific learning processes such as learning from and with others, reflection, and the opportunity for feedback were highlighted in student and clinical educator comments. The students valued the processes that were available during the SBL experiences that supported their learning, whilst the clinical educators reflected that they observed these students on placement to facilitate their learning through these means, *"…[the student] would really take that [feedback] on board and use that information from one session to another session"* (CE5).

C Organising theme 3: Simulation provides an opportunity to prepare students for clinical placements

Preparation for clinical practice was a theme that both participants discussed. Student participants recounted the notion of preparedness at the completion of the SBL program and following their typical clinical placement, *"I felt more prepared for clinic on day one than previous placements"* (S8). The experience in simulation prior to clinical placement was coined as, *"…an intensive warm-up. It is just the best start"* (S5FG). Whilst some students discussed the importance of repeated practice to build confidence levels, other students perceived that this unique learning opportunity contributed to their preparedness, *"I was a bit more prepared having done the simulation trial so things like the handovers that we practised in the simulation clinic"* (S2). By feeling prepared, students revealed that they were ready to 'jump in' on placement, *"I just felt prepared, I felt focussed and ready to jump into whatever was necessary or whatever they required me to do"* (S8), and *"I was happy to jump in and do something five minutes before the session because we had done that in simulation"* (S10). Preparedness was also considered by the students in relation to known expectations, *"I definitely feel like it did prepare me quite a bit... I had an idea of what to expect or how to carry out the session"* (S1).

From the perspective of clinical educators, most students who participated in the SBL program presented as confident and prepared for placement. Clinical educators also reported that they had observed students transferring clinical skills, *"…learning about phonetics and phonetic transcription they obviously really studied that and could apply that to a different population"* (CE3). Students also reflected on skills that they had directly transferred from their experience in the SBL program, *"…simulation program provides us those opportunities to practise or to shift that theoretical knowledge to practical skills"* (S4), and, *"…even though I had a paediatric placement I still could transfer a lot of the skills that I had learnt from sim into my new placement"* (S10). Comparatively, the clinical educators focussed on their observation of transferred skills or the application more broadly, *"…we can spend two weeks on giving feedback that you have to sit patients up and you have to communicate to them …and have a chat with them. That was kind of already there [for this student]"* (CE1).

Clinical educators discussed students' sound theoretical knowledge, however, whilst some students presented as prepared and confident, others were not, *"When the student first started they were quite nervous as you would be…"* (CE3). The skills of students were also varied, *"We didn't feel that they were quite at the level to be thrown into the deep end"* (CE4). In contrast, other clinical educators found that the students, *"…seemed to be on a different level to other third year students… even from fourth year students… [the student] knew what to expect and what was required of someone to be working in that area"* (CE1) and, *"In general [the student's] clinical skills… I think [the student] had a lot of good background knowledge"* (CE3).

D Organising theme 4: Simulation is valued

Students expressed positive comments about simulation, the multiple learning opportunities that were offered within this mode of learning, and about the SBL program specifically. The value was expressed by students in comments such as, *"It was a really valuable experience. I really thought that it added to my confidence and reduced my anxiety"* (S9), and *"I would just say it [SBL program] was one of the most helpful things that I have done at university"* (S8). Reflections regarding the benefits of the SBL experience appeared to be long-term, *"…I'm so happy to have… volunteered for this before this 6 week block because it just it set me up, it set my year up and I think it will set up the final year of the degree too"* (S8).

Across the majority of student interview data there was discussion regarding the reflection process within simulation and its direct benefit to their learning. The value of reflection, *"I see a lot of value in reflecting and the reflective process"* (S2), and its benefit was reported, *"I felt*

the process of actually verbally expressing these things and having the chance to talk through it as a group and add into each other's reflections was of huge benefit" (S8). Some students acknowledged that whilst reflection opportunities also exist in typical clinical placement, in comparison to what was experienced within the SBL program, there is not enough time for reflection, *"…it is not an in depth discussion or how are you feeling or what were you thinking. It was less time to do that in the real world, we still did that but it was very brief"* (S9).

Simulation clinical educators were perceived as a valuable support to student learning, *"In simulation it is so supported, you are doing reflections and they are just there for you all the time"* (S7). Repeatedly, the students perceived that there was a difference in level of support when reflecting on their clinical educator experience across the two learning environments, *"clinical educators are there to support you, the expectation is that they are there to help you whereas in clinic some educators are more you know if you need support that might not be such a good thing"* (S7). The focus of learning experience from the simulation clinical educators was also highlighted in student comments, *"The clinical educators took a perspective that every time that you didn't do well in the session, it's more like an experience, a learning experience rather than now I want you to achieve everything"* (S4).

E Organising theme 5: Perceptions of the simulated learning program

Following the experience in the SBL program, the students were asked to provide their perceptions of the SBL program, which resulted in a range of different views across the spectrum. Although students expressed benefit due to participating in the SBL experience at the mid-point of their speech pathology program, *"being in third year it is really good timing"* (S8FG), there were mixed feelings regarding the timing and structure of the SBL program. Some reported the request for more time to develop progress note writing skills and others reiterated the importance of considering all types of student learning, *"everyone learns very differently… some students might be more reserved"* (S1FG). Overall, students felt that the simulations were beneficial for developing clinical skills however, varied responses were received regarding the role-play experience, *"It just seemed a bit purposeless when we went downstairs and was* [sic] *doing the therapy"* (S6FG). Other students considered role-play as an alternate learning approach, *"I think it just gave you a good perspective of how you would feel like as the patient"* (S10FG), enhancing their patient-centred skills.

Additionally, working in pairs and in a group setting was generally valued, however, some students requested individual participation for some simulations, *"I don't know if time constraints would [allow this] but that way you are getting a taste of how it really is not having that extra person there to support you"* (S1). Authenticity in simulation was reported, *"I was really surprised at how closely they [simulated patients] were able to simulate things"* (S5), although limitations of simulation were also noted such as ensuring that the simulated patients portrayed the diagnosis accurately, *"I was very aware that it was a made up scenario… it was probably some of the actors just didn't react in the way that they were supposed to"* (S1).

F Organising theme 6: Skills learnt in simulation support students on placements

The practical nature of SBL enabled students to develop clinical skills. The students were able to identify skills learnt during the SBL experience, *"I think most of us who did the sim [SBL program] and went straight into adults were comfortable being around adults and doing the simple things like the oromotor the simple swallowing assessments and the basic communication assessments"* (S7). Students perceived these skills as a value add to their repertoire. Without knowledge of the tasks or the learning, the clinical educators too observed similar clinical skills in these students, *"[Student was] aware of positioning of patient. That can take four weeks for someone but [the student] was already thinking about should we sit them up first…"* (CE1).

Some students discussed more generic skills, *"I think the sim clinic is important for practising those general skills you know preparing you for what the environment might look like... So those things like knowing what the room might look like"* (S2). Similarly, the clinical educators also reported that students presented with generic skills ready for placement including foundation knowledge and professionalism, *"In general clinical skills I think the student had a lot of good background knowledge"* (CE3), and *"…it is like the student knew what was required of someone to be working in the area, you know that professionalism"* (CE1). Clinical reasoning skills, however, were reported by clinical educators as generally requiring prompting or commented that these specific skills were observed to develop whilst on placement.

Communication skills were also highlighted as being present at the beginning of the placement for some students by the clinical educators, *"communication skills I guess leant itself to being very effective in this setting as was you know their initiative and being forthcoming with information"* (CE2) and acknowledged by the students, *"not relying on you know a script in a sense and being allowing* [sic] *my own method of communication and communication style to come through"* (S8). One of the clinical educators commented that, *"[the student] was able to adapt [their] communication straight away"* (CE1) whilst another observed, *"great communication skills. Really really good for patients and other staff members…"* (CE4). Some students discussed these generic skills as being transferred skills, *"After the simulation program I had a better idea how to communicate with older people and I actually took that reflection and what I learnt from the simulation program I brought to the placement"* (S4).

IV DISCUSSION

This study aimed to explore perceptions of SBL from the perspective of both speech pathology students and clinical educators. Students and clinical educators perceived that SBL offered unique learning benefits for students to prepare themselves for clinical placements. These student perspectives in particular regarding the benefits of SBL corroborate findings of previous literature in speech pathology (Miles et al., 2016; Rose et al., 2017). What is less well researched is the value of SBL experiences from the perspective of clinical educators. The current study has aimed to address this gap by demonstrating that students and clinical educators have similar views about a specified SBL experience and its impact on clinical skills and preparedness for placement.

The theme of *'difference'* within this study was prominent in data from both students and clinical educators. The students discussed different learning experiences within this environment, the process of reflective practice and commented that they perceived a difference in the style of clinical education. The learning process in simulation is different to learning in most real clinical placement experiences as it incorporates three definite phases; pre-brief, simulation activity, and debrief (Kelly et al., 2016; Ker & Bradley, 2014; Page-Cutrara & Turk, 2017). The debrief phase, that is the time immediately following the learning experience in simulation, is used to promote reflection (Husebo et al., 2015), with the value and depth of reflection being dependent upon the questions that are asked of the learners during this phase (Husebo et al., 2013).

Students in the current study recognised that SBL offered opportunities to engage in reflection. The clinical educators of these students also reported that the students presented with high-level reflective skills that were noticeably different from those of other students on placement. Reflection and the concept of reflective practice are used to solidify knowledge within many modalities of learning (Husebo et al., 2015). Reflection is a thoughtful process whereby learning occurs by engaging in an experience and then evaluating the experience based on previous knowledge (Jasper & Rosser, 2013), often leading to a change in behaviour. Reflection opportunities therefore, offered within the SBL environment are of critical value to students' learning.

There was a perceived difference in the nature of the clinical education experience by the students. The students indicated that the clinical educators in the SBL activities were more focussed on students than the patient. This perception is supported by work conducted by Hill et al. (2019), who also found that clinical educators in SBL programs perceive that their role within simulated learning environments is different compared to typical clinical placements. Clinical educators in SBL programs felt that they were able to focus more on student learning and provide quality teaching within this environment (Hill et al., 2019). Whilst students have perceived a difference in clinical education within a simulation environment, the clinical educators also identified a difference in the students. In the current study, some of the clinical educators highlighted the concept of preparation, whereby they noticed that following the SBL experience, students were well prepared for placement.

Previous literature has established that SBL can prepare students for clinical practice (Larue et al., 2015). In a systematic review by Larue et al. (2015) the use of SBL activities was reported to prepare nursing students for their clinical practice. The concept of increased confidence as a result of the exposure to learning within simulation was also discussed and perceived to benefit student learning in nursing practice (Larue et al., 2015). Research within physiotherapy education (Pritchard et al., 2016) and interprofessional education (Decker et al., 2015) has also reported the importance of SBL in preparing students for their clinical role. Similar themes have been found within the speech pathology literature regarding simulation offering preparation for clinical practice and students' perceived post-simulation change in confidence levels (Finch et al., 2013; Hill et al., 2013; Rose et al., 2017). In the current study, clinical educators perceived the students to present as confident and prepared for clinical placement and the students themselves perceived an improved confidence.

In existing speech pathology literature, the safe learning environment that simulation offers has also been a recurrent theme threaded through students' perceptions of the benefits of SBL experiences (Hill et al., 2013; Penman et al., 2020; Rose et al., 2017; Ward et al., 2015). Similar findings were found within the nursing field whereby the safe environment of simulation was highlighted as an advantage for students (Larue et al., 2015). In this study, the students reported that repeated practice within a safe simulated learning environment improved their confidence levels and therefore, directly benefitted their learning. The SBL environment created for the current study adhered to historically accepted components of safe simulation (Ker & Bradley, 2014) which may have facilitated students' feelings of security. Clinical educators also commented that they had observed students to transfer skills from the SBL program to their placement. Application of skills from one context to another is an area that has been researched within medical education, but not within speech pathology SBL (Ker & Bradley, 2014). The novel finding of transfer of skills highlights an additional advantage of SBL activities specifically within speech pathology clinical practice.

Application of theoretical knowledge to clinical practice is an important transition as is transferring clinical skills between clinical placements. In the current study, the students identified their communication skills and specific clinical skills used in adult speech pathology practice as transferred skills from the SBL program to their clinical practice. Interestingly some of the students perceived this transfer of skills, for example, their communication skills, within a team environment irrespective of the setting or population. The clinical educators commented on transferability of clinical skills more broadly and reflective practice skills whilst on placement. The transferability process is perceived as dynamic and complex (Speech Pathology Australia, 2014; van den Eertwegh et al., 2013), however, little is known about how transfer occurs (Speech Pathology Australia, 2014). Student participants in this study discussed the specific skills that they took to their next clinical placement however, the data did not reveal why or how these skills were transferred. Research by van den Eertwegh et al. (2013) suggests that effective transfer of communication skills in particular is facilitated through a constructivist approach to learning (van den Eertwegh et al., 2013) and active involvement of students in their learning (Mayer, 2004). Clinical practice enables this active learning through the multifaceted nature of experiential learning, a model used within SBL (Ker

& Bradley, 2014). Further exploration of how skills are transferred is needed to determine if SBL facilitates the transformative process of skills through a combination of active involvement in learning and engagement in reflective practice.

V LIMITATIONS AND FUTURE DIRECTIONS

As the student participants were volunteers who completed the SBL program in addition to their clinical education program, results should be interpreted with caution. Students were not assessed on their performance within the SBL activities, which may have influenced their engagement and/or skewed their responses. Additionally, comments made by each of the clinical educators about their individual students may reflect each student's usual presentation and may not relate to skills they specifically gained in the SBL activities.

This study recruited a small number of students and their clinical educators. While clinical educators were drawn from a range of organisations and placement settings, their views may not represent those of a broader cohort of educators and settings. Further research could explore clinical educators' perceptions of the contribution of SBL to students' preparation for practice within more diverse clinical contexts. Similarly, students at different levels of their clinical program may offer varied perceptions of their learning in SBL, a notion that could be investigated in future research.

The SBL program included many of the range of practice areas within speech pathology CBOS (speech, language, swallowing, voice and multi-modal communication) (Speech Pathology Australia, 2011), however, fluency or stuttering clinical skills were not incorporated into the program. It would be beneficial to develop a SBL activity that focuses on students' ability to assess and treat stuttering within an adult population and determine their competency within this practice area.

VI CONCLUSION

This study identified that students and clinical educators have shared perceptions that simulation offers unique learning benefits for students to develop skills and prepare for clinical practice. Students valued the simulation experience highlighting that SBL activities focussing on adult areas of speech pathology practice have a role within program curricula. Concepts of transferability of skills, preparedness for practice, points of difference in learning across various placements and reflective practice were explored. Positive outcomes were found with scheduling the SBL program just prior to the typical clinical placement. Further research is needed to clearly identify the process of transferability from a SBL environment to other clinical contexts.

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