THE USE OF REFLECTIVE PRACTICE ACTIVITIES BY SPEECH-LANGUAGE PATHOLOGY STUDENTS AND CLINICIANS

A thesis submitted in partial fulfilment of the requirements for the degree of

Doctor of Philosophy

by Katherine Jane Cook

School of Psychology Speech & Hearing, Te Kura Mahi ā-Hirikapo

University of Canterbury

2022
DECLARATION BY AUTHOR

I declare that this thesis is my own original work. It does not contain material written or published by a third party, nor material which has been submitted for any other degree or diploma at a university or other institution of higher learning.

LIST OF PRESENTATIONS BY THE AUTHOR RELEVANT TO THE THESIS

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Reflective practice (RP) is a teaching and learning approach utilised with students engaged in clinical education programs for speech language pathology (SLP). RP activities such as written reflective practice (WRP), RP groups, dialogic teaching of RP, questionnaires, and discussions with a supervising SLP, provide students with a number of learning opportunities as they complete clinical placements (e.g. demonstrating clinical reasoning, clinical skill development, client centred practice, examining and evaluating self, and considering alternate perspectives). Research has shown that SLP students can demonstrate positive change in WRP abilities in as little as six weeks (Cook et al., 2019) and that, in general, students perceive they learn something from engaging in RP activities (Tillard et al., 2019). To date, there has been limited research investigating the use of RP activities with SLP students across different timepoints of the clinical program, or examination of how SLP engage in RP in the workplace. Therefore, the thesis investigated the use of reflective practice activities with SLP students and clinicians. Specifically, the thesis aimed to understand student perceptions and learning as a result of engaging in RP activities, and to better understand SLP clinician’s engagement in RP in the workplace. Four studies were conducted with SLP students and practicing SLPS.

The first study, detailed in chapter two, aimed to investigate students’ demonstration of breadth of WRP across and within the clinical education program. Participants were seventy-seven SLP students in their first, second or final professional year of the clinical program. They wrote critical reflections following an interaction with a client/s as part of their clinical education experiences. In total, four written reflections per participant were coded for breadth of WRP utilising a modification of Plack et al.’s (2005) coding schema. Results revealed a statistically significant association between time (i.e., professional year of the program) and likelihood of demonstration of breadth of reflection for the lower-level reflective element of
“attend” and higher-level reflective element of “re-evaluate”. Final professional year students exhibited significant enhancements in the higher-level elements (e.g. “premise”) compared to first professional and second professional year students.

A follow up study, detailed in chapter three, aimed to determine overall RP skill in this same cohort and determine whether there was a relationship between RP skill and clinical competency. Therefore, chapter three (1) reanalysed the same WRP samples from chapter two to examine the impact of time on depth of WRP, and (2) examined a possible relationship between depth of WRP and clinical competency for SLP students. Depth of WRP for each participant was assessed utilizing a modification of Plack et al.’s (2005) coding schema. SLP student clinical competency was assessed using Competency Assessment in Speech Pathology (COMPASS®). There was a significant association between time and development of depth of WRP for final professional year students only. No association was identified for depth of WRP and clinical competency.

Both chapter two and three described instruments that could be utilised to either measure and develop WRP processes over time, or provide a judgment of WRP skill as judged by educators. The focus of chapter four, however, was SLP students and their perception of how RP supported their learning, or otherwise. Chapter four aimed to: (1) determine perceptions of RP capacity and outcomes of engaging in RP in three groups of SLP students (following their second, fourth or sixth clinical placement experience), utilising a validated and reliable instrument, and (2) examine patterns of perceptions of RP capacity and outcomes of engaging in RP across SLP students utilising hierarchical clustering (Manhattan distance). Seventy (70) SLP students completed the Reflective Practice Questionnaire (RPQ) (Priddis & Rogers, 2018; Rogers et al., 2019) following their second, fourth or sixth clinical placement experience. The majority of SLP students perceived they had high levels of reflective capacity and, in general, their perception of their RP abilities and subsets associated with RP
increased as their clinical experience increased. A significant positive effect for three subsets of the RPQ (communication confidence, confidence general and job satisfaction) was found as clinical experience increased. Three groupings were identified as a result of hierarchical clustering (reflective and confident group, non-reflective group and a low confidence group). Overall SLP students perceived that RP activities had a positive impact on their learning and, as such, these findings offer further support for the use of RP activities in SLP clinical programs.

The final study, detailed in chapter five, sought to further inform the use of RP in clinical programs through an examination of RP in the workplace. Thirty SLPs working in health, education, and private practice sectors, shared their experiences and perspectives of RP in the workplace through individual semi-structured interviews. Thematic analysis was used to analyse the interviews. Three themes were developed from these data, describing what SLPs use RP for, what SLPs perceive as important in order to engage in RP in the workplace as well as the barriers they have identified, and how SLPs have observed a change in engaging in RP as they have progressed in their careers. The three themes highlighted that RP is valued in the workplace for supporting client focused care, problem-solving, and lifelong learning. Moreover, SLPs wanted time to be protected for RP at all stages of their career (both early career and experienced) and valued the relationships with others as contributing positively to RP.

Overall, the results of the four studies described in this thesis support the teaching and use of RP activities in clinical education programs for SLP students. RP activities offer SLP students’ opportunities for purposeful examination of self, clinical skill development, and client centred practice. The three RP assessment tools utilised in this thesis—breadth of WRP, depth of WPR, and the RPQ—have provided evidence supporting both the assessment and use of RP activities across different stages of SLP clinical education programs.
Assessment utilising breadth of WRP allows opportunities for educators to assess and subsequently foster development of specific WRP skills. Assessment of WRP utilising the categorical rating of depth of RP may be better suited to making judgements of RP abilities, however, cannot be utilised to predict clinical competency. Examination of SLP student perspectives indicated that students value RP as contributing to their learning and clinical practice as their clinical experience increases. The RPQ allowed objective comparisons across SLP students and other student groups, and is another tool to assist in identifying students who require additional support (Priddis & Rogers, 2018; Rogers et al., 2019). Finally, woven throughout the four projects is the recommendation that SLP educators should discuss how they use RP to support their own learning and development in clinical practice, in addition to engaging students in RP activities. Overt discussion of RP with students may further support SLP students to engage purposefully in RP, and prepare them to transfer their RP skills to workplace settings.
CO-AUTHORSHIP FORM

This form is to accompany the submission of any thesis that contains research reported in co-authored work that has been published, accepted for publication, or submitted for publication. A copy of this form should be included for each co-authored work that is included in the thesis. Completed forms should be included at the front (after the thesis abstract) of each copy of the thesis submitted for examination and library deposit.

Please indicate the chapter/section/pages of this thesis that are extracted from co-authored work and provide details of the publication or submission from the extract comes:

Chapter 2 consists of the manuscript “Written reflective practice abilities of Speech-language pathology students across the degree program”. This manuscript was accepted in the International Journal of Language and Communication Disorders and is inserted as published, with the exception of minor terminology changes (e.g. SLP instead of SLT). These have been made to maintain consistency throughout the thesis.

Please detail the nature and extent (%) of contribution by the candidate:

- Conception and study design (80%)
- Data collection (100%)
- Data analysis (80%)
- Drafting the manuscript (100%)
- Revision of the manuscript (80%)

Certification by Co-authors:

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The undersigned certifies that:

- The above statement correctly reflects the nature and extent of the Doctoral candidate’s contribution to this co-authored work
- In cases where the candidate was the lead author of the co-authored work he or she wrote the text

Name: Cheryl Messick Signature: Cheryl Messick Date: 03/11/22
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ASHA</td>
<td>American Speech-Language Hearing Association</td>
</tr>
<tr>
<td>CBOS</td>
<td>Competency Based Occupational Standards – Entry Level</td>
</tr>
<tr>
<td>CE</td>
<td>Clinical Educator</td>
</tr>
<tr>
<td>NZ</td>
<td>New Zealand</td>
</tr>
<tr>
<td>NZSTA</td>
<td>New Zealand Speech and Language Therapists’ Association</td>
</tr>
<tr>
<td>OSCE</td>
<td>Objective Structured Clinical Examination</td>
</tr>
<tr>
<td>RP</td>
<td>Reflective practice</td>
</tr>
<tr>
<td>SD</td>
<td>Standard deviation</td>
</tr>
<tr>
<td>SLP</td>
<td>Speech-language Pathology</td>
</tr>
<tr>
<td>SLPs</td>
<td>Speech-language Pathologist</td>
</tr>
<tr>
<td>SPA</td>
<td>Speech Pathology Australia</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>WR</td>
<td>Written reflection</td>
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<td>WRP</td>
<td>Written reflective practice</td>
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CHAPTER ONE: INTRODUCTION TO REFLECTIVE PRACTICE AND OVERVIEW OF METHODOLOGY
The University of Canterbury, like others internationally, aims to produce graduates who are ready for the workforce and the world (University of Canterbury, 2022). Educators at the University of Canterbury employ a number of learning tools, assessment techniques, dissemination of theory and work integrated learning experiences in an effort to produce graduates who are active and engaged in the community, innovative, knowledge seekers, and global citizens, who demonstrate bicultural practice and wellbeing in their approaches (University of Canterbury, 2022). Reflective practice (RP) is one learning tool thought to support students in their journey towards workplace readiness.

RP aims to support learning and development of clinical skills, connect theory to practice, and support students to question their own practice and develop flexibility in their planning and thinking (Chabeli, 2010; Dowling, 2001; Hill et al., 2012; Schön, 1983a, 1987). As a result, RP activities have been embedded in a wide range of tertiary programs. However, RP activities have gained most attention within tertiary programs that include clinical education or work integrated learning opportunities (e.g. teaching, allied health, medical, audiology, nursing) (Alsalamah et al., 2022; Aronson, 2011; Bulman et al., 2012; Dunne et al., 2019; Erdemir & Yeşilçınar, 2021; Ng, 2012; Plack et al., 2008). This chapter provides a general introduction to the thesis by discussing definitions and models for RP, theories underpinning RP, and an overview of how RP is utilised in clinical programs and workplace settings.

1.1.1 What is reflective practice?

A number of definitions exist for RP, many of which have been tailored to a specific profession such as SLP. Broadly RP is described as a strategy or tool available for use to respond to an experience (Boud et al., 1985). Building from this brief definition, RP is
described as “a generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations” (Boud et al., 1985, p. 19). Here, the focus of RP is explained as the examination of one’s experiences and the change in thinking in response to examination of self. Schön’s (1983, 1987) work extended this description by moving beyond simply examining or looking into one’s experiences, to highlighting that the outcome of engaging in RP was central to help make sense of one’s practice. Schön (1983; 1987) suggested that this occurred through engaging in thinking, analysis and self-awareness practices, and was a demonstration of professional knowledge. Professional knowledge is necessary when technical knowledge or current research cannot solve the situation at hand or is continually changing, such as work in the allied health, medical and nursing professions (Plack et al., 2005; Schön, 1983; 1987). In the healthcare setting definitions of RP have been described as drawing together of evaluation of self and external knowledge (Brechin et al., 2000). Finally, specific to SLP, RP has been described as a “… means by which learners can make sense of and integrate new learning into existing knowledge” (McAllister & Lincoln, 2004, p. 125). This definition highlighted a focus on both engaging in learning, and again the synthesising of content, thinking and an intended outcome of a change in response to new learning. Extending on from the definitions of RP are models for RP. The RP models underpin how RP is implemented and have been used to support evaluation of RP skill and teaching of RP in tertiary programs and the workplace.

1.1.2 Models for reflective practice

This section reviews existing models of RP to inform the instruments selected as measurement tools within this thesis. Schön’s (1983, 1987) Model of Reflective Practice is one of the most widely applied approaches in SLP clinical education and clinical practice (Caty et al., 2015). This model, in addition to those discussed below, have gone onto be
tested, further refined and combined in clinical education programs and regularly employed
to assess and understand RP abilities or perspectives.

Schön’s (1983) reflective practitioner model is credited for the coining of the term
“The reflective practitioner”. The reflective practitioner is described as a person who has the
appropriate knowledge or technical skills for their field and is aware of limits of their
knowledge (Schön, 1983). They are described as being able combine their knowledge with
information gained from interacting with their clients, try to understand their client’s
perspective or consider the situation from a number of different perspectives, and be
comfortable with sharing both their uncertainties and reasoning with clients (Schön, 1983).
Finally, the reflective practitioner is described as being able to form a real connection with
their clients (Schön, 1983). Here, RP can be seen to support patient-centred care. A defining
feature of Schön’s (1983; 1987) descriptions of RP are the inclusion of concepts of
“Reflection-on-action” and “Reflection-in-action”. “Reflection-on-action” is deemed to occur
when the practitioner considers the learning from an event that has already occurred (Schön,
1983, 1987) “Reflection-in-action” is a considered to be a more complex skill and is
illustrated when, during a clinical interaction for example, the practitioner is able to first
identify an issue, attempt to change the issue in some way in the moment and reflect on the
impact of this change (Schön 1983). A key feature of reflection-in-action is the active
experimentation when something does not occur as expected (Schön 1983).

Schön’s model was later extended to include the concept of “Reflection-for-action” to
describe when the outcome of reflection is a planned change for future events (Killion &
Todnem, 1991). Combined, the three terms “Reflection-on-action”, “Reflection-for-action”
and “Reflection-in-action” are core features used to describe stages or timings for when
reflective thought is and can occur (Killion & Todnem, 1991). Schön (1983, 1987), Killion
and Todnem’s (1991) work, however, has been criticised for a lack of consideration about
emotional aspects, instead placing focus on rational thinking (Thompson & Thompson, 2008).

Boud et al.,’s (1985) “Reflection of Learning Model” also asks the learner to reflect on experiences that have occurred. The authors further illustrated the link between RP and the learning experience by describing the importance on the reflection of past experiences to prepare the learning of upcoming new experiences (Boud et al., 1985). In comparison to Schön (1983, 1987), this model does not focus on “Reflection-in-action” and targeted examination of past events only. The three-stage model includes the headings; “Returning to the experience”; “Attending to feelings”; and “Re-evaluating the experience” as the catalysts for taking meaning from events that have occurred. The terms are not independent of each other, do not need to be completed in sequence, and could be used in a cyclic nature to allow learners to gain the most from use of reflection. According to Boud et al., (1985) these stages of reflection highlight the focus on describing an experience (“returning to the experience”), and the feelings associated with that experience (“attending to feelings”) as well as making comparisons across past experiences in order to plan for future events (“re-evaluating the experience). In comparison to Schön’s work, this model did include a focus on emotions as well as description of the event.

Mezirow’s (1991) model for RP built on the work of Boud et al., (1985) and Dewy (1933). Mezirow’s model, “The Process of Reflective Action”, introduced the terms “Process” (describing the strategies used or available), “Content” (exploring the experience from different experiences, beyond describing events) and “Premise” (recognising and exploring own assumptions, bias, values and beliefs) when differentiating the parts of reflective practice or areas to focus on in order to help to change beliefs and transform one’s practice. Mezirow also proposed that reflection could be carried out at differing levels termed “Non-reflective action” and “Reflective action”. “Non-reflective action” was comprised of
two main components, habitual action and thoughtful action. Habitual action was described
the process of solving of routine problems with diverted attention and thoughtful action
described the process of reviewing prior learning to solve a problem. “Reflective action”, the
higher of the two levels, and was described as decision making or problem solving that was
implemented following reflection (Mezirow, 1991).

The three models discussed above were combined and refined by Plack et al., (2005)
to construct an instrument for rating for reflective journals¹. This instrument is presented in
Table 1-1 and displays two levels for RP. Level 1 describes breadth of reflection, breadth is
the reflective processes and stages that people commonly undertake when engaged in WRP.
Level 2 describes depth of reflection, this is an overall judgement of a person’s reflective
ability based on their WR.

*Table 1-1 Rating checklist for reflective journals (Plack et al., 2005)*

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Element of reflection (code)</th>
<th>Brief definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>Reflection in action (RIA)</td>
<td>Occurs while in the midst of an action; on the spot decisions</td>
</tr>
<tr>
<td></td>
<td>Reflection on action (ROA)</td>
<td>Occurs after the action has been completed.</td>
</tr>
<tr>
<td></td>
<td>Reflection for action (RFA)</td>
<td>Occurs before being faced with the situation; begins to plan for the future.</td>
</tr>
<tr>
<td>Content</td>
<td>Content (CON)</td>
<td>Explores the experience from another perspective (beyond description)</td>
</tr>
<tr>
<td></td>
<td>Process (PROC)</td>
<td>Describes the strategies used or available for use</td>
</tr>
<tr>
<td></td>
<td>Premise (PREM)</td>
<td>Recognizes and explores own assumptions, values, beliefs and biases.</td>
</tr>
<tr>
<td>Stage</td>
<td>Returns to the experience (RETURN)</td>
<td>Describes the experience.</td>
</tr>
<tr>
<td></td>
<td>Attends to feelings (ATTEND)</td>
<td>Acknowledges and begins to work with feelings.</td>
</tr>
<tr>
<td></td>
<td>Re-evaluates (RE-EVAL)</td>
<td>Reappraises the situation vis-à-vis past experiences.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level II</th>
<th>Level of reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal</td>
<td>Non-reflection</td>
</tr>
<tr>
<td></td>
<td>Reflection</td>
</tr>
</tbody>
</table>

¹ Reflective journal is another term for a written reflection.
Plack et al.,’s (2005) instrument was shown to have acceptable reliability and validity when assessing WR of both physical therapy and SLP student groups. (Hill et al., 2012; Plack et al., 2005). A modified version of this framework was used to measure SLP student WRP skill development over six weeks (Cook et al., 2019). The modified framework was chosen as the instrument utilised in Chapters two and three of this thesis for its acceptable reliability, validity, use in SLP clinical education programs, and ability to showcase the different components and perspectives related to RP (Cook et al., 2019; Hill et al., 2012; Plack et al., 2005). This is discussed in further detail in Chapters two and three.

1.1.3 Theories underpinning the use of RP in clinical programs

To understand how RP activities, models and frameworks came to be used commonly in clinical programs, including SLP, one can look to the constructivism learning theory, adult learning theory of andragogy, and experiential learning model. Through these overarching theories, principles and models, features of RP are evident and at times, components of the learning models. This thesis does not focus on a single theoretical focus, rather throughout each chapter relevant components of the theories, principles and learning models are highlighted that are described in this section.

Firstly, the constructivism learning theory describes that new learning is built on past experiences (Phillips, 1995). Learners will expand on and re-examine knowledge and understanding through experience (Arends, 1998). The student is not a passive recipient of knowledge (as described in cognitivism learning theory), but encouraged to experiment, question and develop understanding through their own experiences (Arends, 1998; Fox, 2001). RP activities encourage learners to re-examine experiences from differing stages,
personal experiences and make comparisons to past learning (e.g. after the experience has occurred, during the experience, and informing change for future experiences).

Secondly, adult learning theories such as andragogy describe features educators consider when designing learning experiences that will meet adult learner needs. These are experiences and learning that engage, challenge, provide rationale for learning, allow self-direction, allow students to be involved in planning and evaluation states, require internal motivation and include experiences that are meaningful for students (Brookfield, 1986; Knowles, 1984). Engaging students in RP activities offers learners the opportunity to provide feedback, evaluate the interaction and choose what want to reflect on. This can also be accomplished through seeking student and practicing clinician perspectives about RP activities, RP groups, WRP activities and their perceived effectiveness.

Thirdly, clinical programs such as SLP employ an experiential learning theory approach, whereby there is a focus on learning through clinical experiences (Kolb, 1984). Woven through the experiential learning theory are reference to definitions of RP such as, questioning one self, identifying learning from experiences, trying something new in response to information gained from the experience (McAllister & Lincoln, 2004). Therefore, the aim of purposefully engaging SLP students in RP activities alongside experiential learning (e.g. clinical experiences and simulation) serves to enhance learning (Hill et al 2012).

These three learning models showcase how RP is a core process of engaging in learning as an adult learner, learning though experience and learning from past experiences. The next section provides a brief overview of how clinical programs and workplaces operationalise RP, examines what programs and organisations believe is gained from utilizing RP activities, and briefly reviews student and clinician perspectives of RP.
1.1.4 Use of RP with health professionals and clinical programs

Reflective practice activities are utilised in allied health, medical and nursing clinical education programs and to a lesser extent in workplaces (Aronson et al., 2012; Bannigan & Moores, 2009; Chabeli, 2010; S. Chambers et al., 2011; Davey et al., 2020; Halton et al., 2007; Kim, 1999; Legare & Armstrong, 2017; Ng et al., 2012a; Plack et al., 2005; Saban et al., 2021). While this section provides a brief overview, specific studies related to the use of RP activities and perspectives related to RP will be discussed in detail in chapters two, three, four and five.

The common reasons for including RP activities in clinical programs are described as meeting requirements for graduate entry to the workplace, enhancing learning and clinical practice, supporting connections of theory to practice, and supporting demonstration of reasoning skills (Cook et al., 2019; Hill et al., 2012; Plack et al., 2005; Schön, 1987, 1983). Students also report valuing RP for a number of reasons including offering opportunities for peer learning and maximising self-awareness and confidence (Alsalamah et al., 2022; Barbagallo, 2021; Er et al., 2019; Lim & Low, 2008a, 2008b).

The common purposes of engaging in RP in the workplace differ slightly or extend from a clinical program’s focus. Reports from clinicians in medical, nursing and allied health fields describe RP as supporting complex or novel decision making, increasing efficiency for diagnosis and reducing patient admission time and reducing burn out (Armstrong et al., 2017; Caty et al., 2016a, 2016b; Clouder, 2000; Liddiard & Sullivan, 2017; Mamede et al., 2008; Saban et al., 2021; Sherwood et al., 2018; Smith & Pilling, 2007; Thomas & Isobel, 2019; Walpola & Lucas, 2021; Ziebart & Macdermid, 2019).

Common methods of RP have included writing (Cook et al., 2019; Plack et al., 2005), verbal discussion groups (Johnston & Banks, 2000; Schaub-de Jong et al., 2011; Tillard et al.,
Alongside the differing methods of RP, is the assessment of RP. Assessment measures vary across studies and in their validity and reliability. Written RP tasks has been undertaken via checklists and rubrics and incorporated into assignments such as ePortfolios or as standalone RP assignments (Cook et al., 2019; Gadbury-Amyot et al., 2005; Walton et al., 2016). For verbal RP groups and one on one discussions, focus groups and questionnaires have commonly been used to judge student perception of learning and engagement in RP activities (Barbagallo, 2021; Er et al., 2019; Ng et al., 2012a; Priddis & Rogers, 2018; Rogers et al., 2019). Furthermore, assessments of RP abilities have been incorporated into practical assessments to offer additional opportunities to demonstrate reasoning skills (Orrock et al., 2014).

The above studies reinforce the notion that RP activities, assessment of RP skills, and activities seeking perspectives of RP are regularly employed in clinical education programs and to a lesser extent the work place for health professional clinicians. Broadly, inclusion of RP activities aims to support the student or clinician in their learning experience, provide judgements of reflective ability and improve the experience of the patient. The literature examining SLP students and clinicians has similar aims.

1.1.5 Use of RP in SLP and SLP clinical programs

Consistent with other health professionals, SLP have described that the ability to both engage in and/or demonstrate effective RP skills is one of the minimum requirements for new graduate and established SLP clinicians (Standards of Proficiency for Speech and Language Therapists, 2013; Speech Pathology Australia, 2020). The body of work supporting justification of RP in the workplace has largely come from adult learning theories, health professionals, athletic coaching, and teachers, rather than the SLP profession (Brookfield, 1986; Knowles, 1984). Caty et al. (2015), in their scoping review of RP in the SLP realm,
identified forty-two studies that discussed RP for SLP clinicians and students (Caty et al., 2015). Twenty-four of those investigated SLP student education programs and 13 studies specifically mentioned written reflective practice (WRP) and SLP students (Caty et al., 2015). Some of the key criticisms detailed by Caty et al. (2015) were: (1) studies did not consistently define what RP was; (2) RP was not the core focus of the majority of the articles, rather a supplementary measure or snapshot of RP skill; and (3) the voice of the competent and practicing SLP was missing. Studies had largely focused on student or new graduate SLP and expert SLP.

Since the publication of Caty et al. (2015)’s review, two studies specific to SLP students have investigated RP development over time periods of six to ten weeks with promising results. Specifically, these studies indicated that WRP skill did indeed develop over time (Cook et al., 2019; Dunne et al., 2019). Furthermore, additional evidence indicated that specific to verbal RP groups and WRP activities, students do value RP and perceive learning as a result of engaging in RP (Dunne et al., 2019; Tillard et al., 2018). Efforts to measure a change in perspective over time have been unsuccessful (Tillard et al., 2018).

The studies examining RP utilised qualitative methods to examine the perspectives of SLPs working in head and neck cancer and clinical educators who specialise in supporting SLP students on clinical placements (both specialist areas for SLP) (Caty et al., 2009, 2016a, 2016b; Dunne et al., 2021). The studies examining practicing SLP shared the participant views of why or how they engage in RP in their specialist areas, describing how SLP in the head and neck cancer setting utilised RP to support decision making, and clinical skill development. This identified eight opportunities to use RP to engage in ongoing questioning (i.e., experimentation, integration of knowledge from past clinical experience, acceptance of surprise, thinking out of the box, being in the moment, discussions with colleagues, putting oneself in the patients’ shoes, and ethical issues) (Caty et al., 2009, 2016b). Alternatively,
clinical educators (CE) described RP activities undertaken with students placed a focus on reflective questioning. The CE’s shared that their workload was a barrier that reduced their ability to support students to engage in RP (Dunne et al., 2021). While these studies add to the body of work surrounding practicing SLP, they are limited by small numbers of participants and restricted to specialist areas of SLP only.

There have been no documented studies, specific to SLP, that examine and relationship between RP and clinical competency using validated and reliable instruments. Instead, past studies examining students in clinical programs, have suggested that WRP skills are important for clinical competency development or contribute to clinical competency, (Aronson et al., 2012; Caty et al., 2015; Chabeli, 2010; Cook et al., 2019; Halton et al., 2007; Ng et al., 2012b; Plack et al., 2005). Specific to SLP students and RP, subjective judgements of RP ability are described as being to be incorporated into assessments for SLP students e.g. COMPASS® competency assessment and ePortfolio assignments (Gadbury-Amyot et al., 2005; McAllister et al., 2013b; Walton et al., 2016).

In summary, examining RP for SLP and SLP clinical programs suggests that WRP continues to be a well utilised RP activity in clinical programs. WRP is utilised alongside clinical activities, embedded into assignments, or one-off assessments at differing time points across clinical programs (Caty et al., 2015; Cook et al., 2019; Dunne et al., 2019; Hill et al., 2012). The use of differing tools to examine RP abilities and perceptions of SLP students, has meant that the ability to understand the development of RP skills as clinical experience increases is limited (Dunne et al., 2019; Tillard et al., 2018). Student perspectives of RP and RP activities indicate that RP is valued and that students perceive they learn something and develop in clinical skill (Dunne et al., 2019; Tillard et al., 2018). However, the relationship between RP and clinical competency for SLP has not been examined outside of student self-
rating scales and focus groups. Furthermore, the examination of RP in the SLP workplace has been limited.

**1.1.6 Study aims and research plan**

RP activities are regularly employed as part of clinical education programs, including SLP. However, studies specific to SLP clinical programs have three primary limitations.

Firstly, studies of SLP students have largely been limited to one off snapshots of RP skills, a maximum of ten weeks, or utilised as a component of a larger assessment (Caty et al., 2015; Cook et al., 2019; Dunne et al., 2019). Therefore, while the literature suggests that RP abilities and WR develops over time, the evidence is dominated by snapshots of WR skill. While there is a suggestion that RP aids competency development and learning, there is little empirical evidence available specific to SLP. Therefore, a number of opportunities exist, such as, examining the use of RP activities across the wider clinical program for SLP and examining the impact of RP activities on development clinical competency.

Secondly, while studies have generally found SLP students are supportive of engaging in RP activities, instruments used to measure perceptions have varied, have not been validated, and/or have not examined SLP student perspectives longitudinally (i.e., with increased clinical experience) (Dunne et al., 2019; Schaub-de Jong et al., 2011; Tillard et al., 2018). Systematic examination of SLP student perceptions of RP across the degree program is recommended. Sharing the empirical evidence gained with SLP students, will aim to better engage SLP students in RP activities. SLP students are presumed to be adult learners, and as such, adult learners need to know why something is important to learn (Brookfield, 1986; Knowles, 1984). Furthermore, systematic examination of perspectives will also support identification of profiles, or features related to students, who may require additional or tailored support to develop their RP skills.
Thirdly, there is little data available specific to SLPs and their RP engagement in the workplace (Caty et al., 2009, 2016b; Dunne et al., 2021). Furthermore, there is little data examining perspectives of SLPs, at various stages in their careers, with past studies targeting student SLPs or expert SLPs (Caty 2015). Finally, the inquiry into SLP perspectives of RP in the workplace, and dissemination of this knowledge to students again aims to better engage SLP students by providing relevant examples of RP (Brookfield, 1986; Knowles, 1984). It is hoped this knowledge will better prepare SLP students for the workplace environment, where RP is a requirement. This inquiry may provide a deeper understanding why SLPs engage in RP, in addition to barriers and facilitators to engaging in RP (Standards of Proficiency for Speech and Language Therapists, 2013; Speech Pathology Australia, 2020).

This thesis aims to address these issues by investigating the use of reflective practice activities by SLP students and clinicians. Specifically, the thesis aims to:

1. Examine the impact of time on the proportion and characteristics of breadth of WRP skills for SLP students across year groups (first, second and final) of the SLP clinical program).
2. Examine the impact of time on SLP student breadth of WRP skills within each year group (first, second and final) of the SLP clinical program.
3. Examine student depth of WRP across and within each year group (first, second and final) of the SLP clinical program.
4. Determine the relationship between depth of WRP and clinical competency over time.
5. Determine perceptions of RP capacity and outcomes of engaging in RP in three groups of SLP students (following their second, fourth or sixth clinical placement experience), utilizing a validated and reliable instrument.

It is anticipated that the outcomes of this research will support the development of the evidence base related to reflective practice in SLP. It will inform the teaching and learning practices of university staff who engage students in RP activities, and enhance the knowledge of students regarding the facilitative support provided through this practice.

1.1.6 Overview of the thesis

The format of this thesis is “PhD with publications” consisting of a series of manuscripts written for submission to peer-reviewed journals, and bookended by introduction and discussion chapters. The thesis is comprised of four manuscripts, one accepted for publication (chapter two) and three chapters detailing publications in preparation that are nearing readiness for submission to peer reviewed journals. As these papers focus on reflective practice and SLP student learning, the information contained within the introduction sections of each chapter overlaps to some extent.
1.2 INTRODUCTION TO METHODOLOGY

This section provides an overview of the methodology used in the four studies. This thesis employed a mixed methods approach. Table 1 presents an overview of the specific aims, research questions, type of data collected, and analysis chosen for each study.

University of Canterbury – degree options

The studies described in chapter two and three employed quantitative approach utilising a cross-sectional and repeated measures design. The data examined in chapter two and three were SLP student WR samples. As part of usual practice, SLP students at the candidate’s University completed one WR per week, for each week that they were engaged in clinical practice. This was typically based on a clinical interaction. Some of the WRP activities formed part of assessments e.g. practical assessment. A cross sectional and repeated measures design was chosen for the studies described in chapters two and three in order to examine and compare WRP data from SLP students in each professional year group, and examine the data taken from the same points in time in relation to each year group. The use of a repeated measures design meant fewer participants were required, as the WR data for each year group was from the same group of participants. The cross-sectional design allowed for comparison of the variable of professional year group and breadth elements at the same points in time. Longitudinal design was considered, but ultimately rejected due to concerns surrounding participant attrition and time required for data collection.
**Table 1-2 Mapping of research aims and methodology choices for each study in this thesis**

Overarching thesis aim:
To investigate the use of reflective practice activities with SLP students and clinicians.

<table>
<thead>
<tr>
<th>Study</th>
<th>Study aims</th>
<th>Research questions</th>
<th>Research approach</th>
<th>Participant number (n)</th>
<th>Data</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To examine the impact of time on the proportion and characteristics of breadth of WRP skills for SLP students across year groups (first, second and final). To examine the impact of time on SLP student breadth of WRP skills within each year group (first, second and final) of the SLP clinical program.</td>
<td>What is the impact of time and clinical experience on SLP student breadth of WRP? How do SLP students develop in their demonstration breadth of WRP skills across their professional year? How do SLP students develop in their demonstration breadth of WRP skills across the clinical program?</td>
<td>Quantitative Cross-sectional and repeated measures design</td>
<td>n = 77</td>
<td>X4 WR per student</td>
<td>Mixed-effects model with random effects</td>
</tr>
<tr>
<td>2</td>
<td>To examine student depth of WRP across and within each year group (first,</td>
<td>What is the impact of time and clinical experience on SLP student depth of WRP?</td>
<td>Quantitative</td>
<td>n = 50</td>
<td>X4 WR per student</td>
<td>Mixed-effects cumulative link logistic regression</td>
</tr>
<tr>
<td></td>
<td>second and final) of the SLP clinical program. To determine the relationship between depth of WRP and clinical competency over time.</td>
<td>How can WRP depth score be used to predict clinical competency outcomes for SLP students?</td>
<td>Cross-sectional and repeated measures design</td>
<td>WRP coding framework for depth COMPASS® model for ordered categories</td>
<td></td>
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<tr>
<td>3</td>
<td>To determine perceptions of RP capacity and outcomes of engaging in RP in three groups of SLP students (following 2nd, 4th or 6th clinical placement). To examine patterns of perceptions of RP capacity and outcomes of engaging in RP across SLP students</td>
<td>What are SLP student perspectives of RP? What do SLP students perceive the impact of engaging in RP activities has on their clinical practice at different points in the clinical program? What does the RPQ add to understanding SLP student perspectives of RP?</td>
<td>Quantitative n =70</td>
<td>Post clinical practice questionnaire (The RPQ) ANOVA Hierarchical clustering (Manhattan approach)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How could the RPQ be utilised in the SLP clinical program?</td>
<td></td>
<td></td>
<td>Qualitative Phenomenology approach</td>
<td>n = 30</td>
<td>Individual interviews</td>
</tr>
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<tr>
<td>4</td>
<td>To investigate SLP experiences and perspectives of RP in the workplace.</td>
<td>What are SLP lived experiences of RP in the workplace?</td>
<td>Why do SLP engage in RP in the workplace?</td>
<td>How do SLP engage in RP in the workplace?</td>
<td>What are the facilitators of and barriers to engaging in RP in the workplace?</td>
<td></td>
</tr>
</tbody>
</table>
For chapters two and three, the data were collected at four time points for each professional year group (first, second and final) across the year (start and end of semester one and two). These data were examined via content analysis, whereby words, phrases or paragraphs were coded to one or more of the nine elements in order to ascertain breadth of WRP (Plack et al., 2005). The nine elements of WRP referred to nine different reflective processes undertaken by the learner (Mezirow, 1991; Plack et al., 2005). These data provided an insight into the reflective process that students undertook when writing about a clinical interaction. Furthermore, examining process of WR rather than content of WR was suggested to foster student feelings of confidence and safety that they could write what is truly on their minds, rather than being concerned that their thoughts, feelings and opinions might differ from their educator, and thus impact their grades (Bourner, 2003; Cook et al., 2019; Dunne et al., 2019; Plack et al., 2005).

The same WR data examined in chapter two were further analysed in chapter three by assessing depth of WRP across and within the same three professional year groups (first, second and final). The instrument used to examine WR depth aimed to assign a rating (Non-reflector, Emerging-reflector, Reflector, Emerging-critical-reflector or Critical reflector) of WR skill to each participant for each of the four timepoints (Cook et al., 2019; Plack et al., 2005). Additionally, SLP student clinical competency was examined in chapter three at the end of each semester (timepoint 2 and 4). Data examined were the zone of competency score (ZOC) from the Competency Assessment in Speech Pathology (COMPASS®) instrument. COMPASS® was chosen as the instrument to indicate clinical competency due to the following factors:

1. This thesis examined usual practice of SLP students. COMPASS® is used as part of usual practice to make judgements of SLP student clinical competency in the
candidate’s clinical program and all SLP programs in Aotearoa/New Zealand, Australia and Hong Kong.

2. COMPASS® is a validated and reliable instrument.

3. COMPASS® has been reported as the measure of competency chosen for studies examining SLP student competency in relation to simulation and placement type (Hill et al., 2021; Sheepway et al., 2014).

In keeping with the COMPASS® Technical manual and studies utilising these data either overall score or ZOC can be used in research (Hill et al., 2021a; McAllister et al., 2013b; Sheepway et al., 2014). Here, ZOC was chosen for the ability to examine the ZOC categorical data in relation to the depth categorical data. This study aimed to determine examine if WRP could predict clinical competency.

The study described in chapter four also utilised a quantitative approach. Quantitative data was collected in the form of the Reflective Practice Questionnaire (RPQ). This was completed by three groups of students on completion of either clinical placement two, four or six (described as novice, intermediate and entry level placement groupings) (McAllister et al., 2013b). The timing and groupings for data collection were chosen in order to ensure students had recent clinical experiences to consider when making judgements on the RQP, as well as aiming to examine SLP student experiences following the three placement categories offered in the candidates’ clinical program. The RPQ was chosen as it was a valid and reliable tool used with students medical and nursing clinical programs and mental health professionals (Gustafsson et al., 2021; Priddis & Rogers, 2018; Rogers et al., 2019). Furthermore, this questionnaire focused on examining student perception of RP and the ability to support students in clinical and professional scenarios (Priddis & Rogers, 2018; Rogers et al., 2019). This was a further point of difference from other studies completed with SLP students examine perceptions of RP (Dunne et al., 2019; Schaub-de Jong et al., 2011; Tillard et al.,
Output of the questionnaire provided an insight into SLP student perceptions of RP as well as their perceptions of the impact RP had on their confidence, communication, job satisfaction, desire for improvement and stress when interacting with patients (Priddis & Rogers, 2018; Rogers et al., 2019). Hierarchical clustering was chosen to allow further examination of the patterns within the RPQ data, by grouping students with similar RPQ results together (Suzuki & Shimodaira, 2006). This analysis was also completed by Rogers et al., (2019) and offered additional comparison between SLP students and medical students. Furthermore, use of hierarchical clustering aimed to support understanding of how the RPQ could be used in the SLP clinical education program.

The study described in chapter five used a phenomenology methodology. This methodology was chosen in order to address the study aim of exploring the lived experiences of SLPs with respect to RP (MacKenzie et al., 2019). Qualitative data collection was in the form of thirty semi-structured in-depth interviews with SLP with one or more years of experience. SLP with less than one year of experience were excluded due to their proximity to the student SLP experience. Thematic analysis and specifically a thematic network analysis procedure was followed in order to develop themes from the SLP data (Attride-Stirling, 2001).
CHAPTER TWO: WRITTEN REFLECTIVE PRACTICE ABILITIES OF SPEECH-LANGUAGE PATHOLOGY STUDENTS ACROSS THE DEGREE PROGRAM.
This chapter consists of the manuscript “Written reflective practice abilities of Speech-language pathology students across the degree program”. This manuscript was accepted for publication in the International Journal of Language and Communication Disorders (27/09/2022) and is inserted as published, with the exception of minor terminology changes (e.g. SLP instead of SLT). These have been made to maintain consistency throughout the thesis.

Contributions to this chapter are as follows:

<table>
<thead>
<tr>
<th>Contributor</th>
<th>Statement of Contribution</th>
</tr>
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<tbody>
<tr>
<td>Katherine Cook (candidate)</td>
<td>Conception and study design</td>
</tr>
<tr>
<td></td>
<td>Data collection</td>
</tr>
<tr>
<td></td>
<td>Data analysis</td>
</tr>
<tr>
<td></td>
<td>Drafting the manuscript (100%)</td>
</tr>
<tr>
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<td>Revision of the manuscript</td>
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<tr>
<td>Cheryl Messick</td>
<td>Conception and study design</td>
</tr>
<tr>
<td></td>
<td>Revision of the manuscript</td>
</tr>
<tr>
<td>Megan McAuliffe</td>
<td>Conception and study design</td>
</tr>
<tr>
<td></td>
<td>Revision of the manuscript</td>
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</table>
2.2. ABSTRACT

Background: Written reflective practice (WRP) is a teaching tool utilised across speech-language pathology (SLP) clinical education programs. The process aims to support the development of reflective skills required for the workplace (e.g., problem-solving and self-evaluation).

Aims: This cross-sectional and repeated measures study design aimed to investigate students’ demonstration of breadth of WRP across the clinical education program.

Methods: The participants were 77 undergraduate SLP students in their first, second or final professional year of the clinical program. Participants wrote critical reflections following an interaction with a client/s as part of their clinical education experiences. Formative feedback was provided after each written reflection. In total four written reflections per participant were coded for breadth of WRP utilizing a modification of Plack et al.’s (2005) coding schema. This was completed for each of the four time points across the academic year for each professional year.

Results: There was a statistically significant association between time (i.e., professional year of the program) and likelihood of demonstration of breadth of reflection for the lower-level reflective element of “attend” and higher-level reflective element of “re-evaluate”. A positive trend between time and likelihood of demonstration of breadth of reflection was seen for the lower level element of “reflection-for-action”. Final professional year students exhibited significant enhancements in the higher-level elements (e.g. “premise”) compared to first professional and second professional year students.

Conclusions: This group of SLP students exhibited significant change in breadth of written reflective practice across the degree program. This finding has positive implications for facilitating WRP with students and utilizing the current coding framework in clinical programs.
Reflective practice (RP) is defined as “…a generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations” (Boud et al., 1985, p. 19). RP is embedded in critical thinking descriptions (Colucciello, 1997; Facione, 1997), adult learning principles (Brookfield, 1986), and Bloom’s taxonomy for higher education (Bloom, 1956; see also Anderson and Krathwohl, 2001). As a result, RP is regularly employed in university clinical education programs for its perceived ability to support student development into competent and reflective practitioners, who then proceed to provide person-centered clinical practice (Bulman & Schutz, 2013; Schön, 1983, 1987). Common modes of RP or RP activities utilised in both university clinical education programs and workplaces include; writing (Cook et al., 2019; Plack et al., 2005); verbal discussion groups (Johnston & Banks, 2000; Schaub-de Jong et al., 2011; Tillard et al., 2018); one-on-one discussion (Geller, 2002) and video self-analysis (Cruice, 2005).

RP activities have been used in allied health, medical and nursing clinical education programs (e.g., Aronson et al., 2012; Chabeli, 2010; Chambers et al., 2011; Cook et al., 2019; Dunne et al., 2019; Plack et al., 2005). They have been found to have a positive impact on medical students’ ability to diagnose complex cases (Mamede et al., 2008) and predict the academic success of pharmacy students (Tsingos-Lucas et al., 2017). In occupational therapy RP has been described as a foundation skill towards developing professional skills (Zimmerman et al., 2007).

Feedback from students engaged in RP activities as part of clinical education programs have been largely positive, with students stating they valued RP as a learning tool and memory aid, that engaging in RP increases self-awareness skills and developed their
professional identities (Karpa & Chernomas, 2013; Lim & Low, 2008a, 2008b; Ng et al., 2012a; M. Plack et al., 2008; Roche & Coote, 2008). However, additional feedback suggests that students find RP time consuming and students may externalize RP activities, that is, focusing on what they thought the educator expected to read or hear, rather than utilizing RP activities as an opportunity for internalized learning (Dunne et al., 2019; Harris, 2005).

2.3.1 Development of written reflective practice abilities

The current study focused on written reflective practice (WRP) for Speech-language pathology (SLP) students. WRP is one mode of RP regularly utilised in clinical education programs, including SLP. WRP is written content “…in which the writer aims to consider an event, problem or time period from a reflective standpoint…” (Walker, 1985). While each clinical program differs, in general, a WRP activity may be one where educators require students to write about a clinical experience or experiences at specific timepoints during their clinical placements. WRP activities may be guided with questions, others unguided, and WRP activities can be assessed, voluntary or a mandatory part of the clinical program (Cook et al., 2019; Hill et al., 2012; McAllister & Lincoln, 2004; Plack et al., 2005; Williams et al., 2000). WRP is an important consideration for university education providers due to its alignment with adult learning principles as described by Brookfield (1986). WRP promotes questioning and critique of approaches and techniques, as well as self-evaluation and evaluation of the supervisor (Brookfield, 1986). When compared to face-to-face interactions with a supervisor, WRP allows students the time to consider their evaluation of themselves or an interaction (Cook et al., 2019; Dunne et al., 2019; Plack et al., 2008). The written form is also considered a useful aid for students who struggle to demonstrate and verbalize their reasoning and evaluation skills (Cook et al., 2019; Plack et al., 2008). It allows students to develop and demonstrate independent problem-solving skills related to clinical experiences, without putting the student or client safety at risk. Furthermore, completing written
reflections was found to promote emotional and cognitive learning, which resulted in new understanding of interdisciplinary team practices for allied health students (Domac et al., 2015). Finally, it has been suggested that when educators provide formative feedback in a timely manner, on WRP activities, this may have a positive impact on demonstration of WRP abilities by students (Aronson et al., 2012; Cook et al., 2019; Dunne et al., 2019).

When examining how to measure WRP in clinical programs, several studies and theorists have utilised the categories of breadth and depth of reflection (Cook et al., 2019; Hill et al., 2012; Mezirow, 1991; Plack et al., 2005; Schön, 1987, 1983). Depth of reflection is described as an overall level of reflective practice skill (Plack et al. 2005, Hill et al. 2012). Breadth of reflection, the focus of the current study, refers to nine different reflective processes or elements undertaken by the learner (Mezirow, 1991; Plack et al., 2005). Theorists have reported that some elements within breadth of reflection take longer to develop than others. Such aspects are described as higher levels of reflection such as “reflection-in-action” (reflecting and making changes in the moment), “content” (consider another’s perspective), “re-evaluate” (making comparisons to theory or clinical experiences) or “premise” (acknowledging and working through the impact of one’s assumptions/bias and beliefs). Comparatively breadth elements such as “return” (describing the event/session), “attend”(describing one’s own emotions during the event/session), “reflection-on-action” (describing the event and then discussing one’s learning from this event), “reflection-for-action” (describing the event and then discussing a plan for the future or next step) and “process” (the inclusion of strategies used or available) are categorized as lower-level reflective elements and are reported to develop sooner (Duke & Appleton, 2000; Mezirow, 1991; Schön, 1983, 1987; Wong et al., 1995); see Appendix A for full explanation of RP breadth terms, categorization, level of RP and examples).
A number of studies have examined the development of WRP abilities across time for university student learners engaged in clinical programs with positive outcomes reported (Aronson et al., 2012; Cook et al., 2019; Duke & Appleton, 2000; Dunne et al., 2019; Tsang, 2012). Most studies document significant development of student written reflective abilities (Aronson et al., 2012; Cook et al., 2019; Duke & Appleton, 2000; Dunne et al., 2019; Tsang, 2012). Across these studies it has been found that students benefit from being taught concepts inherent to RP, and learning a framework for WRP prior to engaging in the process. The studies included varied assessment methods, and either a content analysis approach, (Aronson et al., 2012; Cook et al., 2019; Duke & Appleton, 2000) a thematic analysis approach, (Tsang, 2012) or mixed methods approach (Dunne et al., 2019). The time points investigated provide only a snapshot of student RP abilities, with examination over six weeks to a maximum of twelve months (Aronson et al., 2012; Cook et al., 2019; Dunne et al., 2019; Duke & Appleton, 2000; Tsang, 2012). Limitations of the above studies, that provide support for the current study include, inconsistent provision of formative feedback between submissions of WR, inconsistent numbers of WR examined or number of WR examined per participant, and no examination of WRP breadth from start to finish of the clinical program, including SLP students.

2.3.2 SLP student written reflective practice abilities

Specific to SLP students, studies utilizing instruments for evaluating WRP have demonstrated that students also improve in their abilities to demonstrate their WRP skills across short periods of time (Cook et al., 2019; Hill et al., 2012). However, it is unclear whether when examining the elements for breadth of WRP, students follow similar patterns of development across the course of the SLP clinical program. For example, in the Cook et al. (2019) study, the SLP students who demonstrated “process” (an ability to describe their process or the strategies used), were more likely to demonstrate a higher-level reflective
practice ability described as “premise” (the ability to identify and explore own assumptions, values, beliefs and biases) in the six-week period (Cook et al., 2019) compared to students who did not demonstrate “process”. In comparison, Dunne et al., (2019)’s mixed methods case study design followed six SLP students across a ten-week period as they completed two clinical placements. findings with SLP students suggested three different WRP development trajectories: “steady growth”, “no clear change” and “gradual decline”. Dunne’s results suggested that students who internalized RP as a learning strategy, maintained or developed RP abilities, compared to those who externalized RP as a requirement of the clinical program (Dunne et al., 2019).

We suggest that with improved understanding of the patterns of development educators can aim to better SLP support student learning (Boles, 2018; Middlemas et al., 2001). Furthermore, educators could provide quantitative evidence to SLP students in support of utilizing RP activities across SLP programs. Specific to WRP activities, this could include providing a suggested number of WRP activities, tailored education and guidelines for provision of formative and summative feedback on WRP activities by educators. Furthermore, the identification of patterns of development or combinations of breadth elements for WRP at specific timepoints could support a transfer of learning for WRP abilities as clinical competency increases over time. The term transfer of learning, within education literature is described as the hypothesis that learning in one area, context or time point will generalize to another and reflective practice is thought to aid the transfer of learning (Bransford & Schwarts, 1999). In the realm of SLP, this was shown as an increase in clinical competency as clinical experience increased for SLP students, regardless of placement type or context (Sheepway et al., 2014).

Unlike the above studies that describe student growth in RP abilities, Williams et al. (2000) found no improvement in physical therapy students’ development of WRP abilities
over an eight-week time period. The possible reasons given for this were a lack of education to students about RP processes, disagreement between raters and no formative feedback provided by educators.

2.3.3 **Summary and aims of the current study**

In summary, significant development of WRP has been documented for specific timepoints within clinical education programs (Aronson et al., 2012; Cook et al., 2019; Duke & Appleton, 2000; Dunne et al., 2019; Tsang, 2012). What remains unclear, is whether student development of WRP skill exists both within and across the course of a degree program for SLP. Examining demonstration of breadth of WRP across the degree, may result in the identification of patterns of breadth of RP that allow tailored support for students. This may also shed light on the amount of written reflective practice activities required to develop student learners into the “reflective practitioner” required for competent workplace practice (Schön, 1983, 1987). Finally, examination of WRP over time may provide quantitative evidence of a positive growth relationship between RP, development of clinical skills and clinical competence. Given this, the present study had 2 aims:

1. To examine the impact of time on the proportion and characteristics of breadth of WRP skills for SLP students across year groups (first, second and final).
2. To examine the impact of time on SLP student breadth of WRP skills within each year group (first, second and final) of the SLP clinical program.

**Hypotheses:**

1. That the proportion of breadth of WRP skills for SLP students will increase both within and across year groups.
2. That the type of breadth elements will change in relation to SLP student year group. In that, final professional year students will demonstrate a higher proportion of higher level breadth elements as compared to first and second professional year students.
2.4 METHODS

This study received ethical approval from the Educational Research Human Ethics Committee of the University of Canterbury, New Zealand. All participants provided written consent to participate.

2.4.1 Context of the study

This cross-sectional and repeated measures design study was conducted as part of the clinical program for speech and language pathology students at the University of Canterbury, New Zealand (NZ). The students included in this study were all completing a 4-year undergraduate honours degree in SLP, similar to the educational approach also undertaken in the UK and Australia. In the NZ version of this model, the first year of study is a generic year that does not include clinical education, and years 2 through 4 of student are professionally orientated (renamed first, second and final professional year) and include considerable clinical placement experiences. Students are eligible to practice as an SLP at the conclusion of the final professional year.

As part of the regular clinical education program, across each semester, students were introduced to RP following an intentional approach of utilizing dialogic teaching, class discussions, metacognitive discussions, informal discussions with clinical educators (individual or group) written reflections (informal and assessed) and verbal reflective practice groups (discussion groups with student peers and a clinical educator facilitating professional topics. See Tillard at el. (2018) for structure of verbal reflective practice groups for SLP students). Appendix B describes the RP clinical education program followed by the SLP clinical education program. Submitting regular weekly written reflections (WR) was standard practice for all clinical courses and was embedded into clinical education learning outcomes. The goal of this study was to estimate the proportion and describe the characteristics of SLP
student WRP skills at the same time points for each cohort of students (at the start and end of each clinical course) in the professional degree. This allowed for the examination of WRP skill across the degree program as well as examination of WRP skill within each professional year. For each professional year (e.g., first, second, and final), students in the respective professional year groups completed two semesters of academic study, which included twelve weeks per semester of clinical experiences in a range of clinical environments and populations including preschool, school-aged children and adults. At two points in the clinical program, students completed two clinical placements described as “block placements”. A block placement is a full-time placement (i.e. 40 hours per week) with no academic class requirements (McAllister et al., 2013b)

2.4.2 Participants
The study included 77 undergraduate students enrolled in clinical courses as part of the Speech-language Pathology honours program. Table 2-3 describes participant who agreed to participate in the study by professional year of study. The average age of the participants was 21.5 years (SD = 3.95) with 75 females and 2 males participating in the study. The study excluded any students who withdrew from a clinical course during the semester, or who declined to participate in the study (6 students).

Table 2-3 Demographic details of student participants by professional year

<table>
<thead>
<tr>
<th>Professional year</th>
<th>Number of students</th>
<th>Male/ Female</th>
<th>Average age/ SD</th>
<th>Prior clinical experience*</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>26</td>
<td>1 Male / 25 Females</td>
<td>20.5 (2.24)</td>
<td>None</td>
</tr>
<tr>
<td>Second</td>
<td>29</td>
<td>1 Male / 28 Females</td>
<td>21.2 (0.81)</td>
<td>2 semesters</td>
</tr>
<tr>
<td>Final</td>
<td>22</td>
<td>22 Females</td>
<td>23 (6.34)</td>
<td>4 semesters</td>
</tr>
</tbody>
</table>

Note: *1 semester is 12 weeks.
2.4.3 Instrument

Plack et al.’s (2005) framework for coding WRP was used because of its validity and reliability, measurement of both breadth and depth of reflection and for its previous use with both SLP and Physical Therapy (PT) students (Cook et al., 2019; Hill et al., 2012; Plack et al., 2005). There were two primary components for the coding framework: (1) breadth of reflection and (2) depth of reflection. For this study, only data for (1) breadth of reflection was examined. Depth of reflection was examined in a separate study. Breadth of reflection refers to the different processes of reflection undertaken by the learner (Mezirow, 1991; Plack et al., 2005). As per Cook et al. (2019) minor adaptations to Plack et al.’s framework were undertaken – including redefining the element “content”, inclusion of keywords to signal and highlight different elements, the addition of common elements that co-occur in WRP, inclusion of examples that related to speech-language pathology topics and examples of what was not a specific breadth element. Breadth elements were organized from low level RP elements to higher level RP elements or elements that contribute to critical reflections.

Acceptable intra rater and inter rater reliability was gained following the modifications (Cook et al., 2019; based on the work by Boud et al., 1985; Mezirow, 1991; Plack et al., 2005; Schön 1987, 1983). See Appendix A for the rater training protocol discussing breadth elements with examples. Readers are referred to Cook et al. (2019), for the full version with breadth and depth of reflection included.

2.4.4 Procedure

Participants were required to write and submit “critical reflections" as part of their regular clinical course requirements. One WR per week was required following a clinical session. Students were required to submit each WR within twenty-four hours of the clinical session or experience they were reflecting on. For this study only two WR from each clinical course were analyzed per participant. The WR selected for analysis were taken from the start and
end of each clinical course for each semester, totalling a maximum of four WR for each student across the professional year (reported as T1, T2 (start and end of semester one), T3 and T4 (start and end of semester two)).

Guiding questions were provided to assist reflecting and are part of standard practice by the Clinical Education team. As per the Cook et al. (2019) study guiding questions were reviewed and modified by the researchers to ensure all areas of the modified Plack et al. (2005) coding system could be addressed by students. See Appendix B and C for a list of sample questions provided to students and timing of questions.

This study aimed to examine usual practice. Therefore, students in the same professional year group were asked to respond to the same questions. However, some students chose not to respond to all questions. Furthermore, some WR questions posed to students varied between professional year groups. No guidelines were given to students pertaining to WR length. As is usual practice, each of the clinical educators (CE) supervising the participants reviewed and gave regular feedback on the written reflections submitted. As per the Cook et al. (2019) procedure, all CE were encouraged to provide at least two pieces of written formative feedback relating to the process of reflection (breadth) undertaken. CE were familiar with the coding framework and could utilise the coding framework to construct the feedback if they desired (e.g. Element included: Process, element chosen for formative feedback: Reevaluate. Feedback to student: “Good job, you have described the strategies you utilised during the session. Next time consider building on this by reflecting on how and why you have changed the types of strategies you use for this client compared to your other client”). CE were encouraged to provide formative feedback to students in a timely manner, so that the student could consider the feedback provided, before their next WR was submitted. The specific type and timing of formative feedback was not controlled for or measured as part of this usual practice study. At the end of each semester, the CE supervising the students removed any
identifying information from the four WR at the required timepoints (T1, T2, T3 and T4) for each participant, and placed the WR in a shared locked computer folder for analysis by the research team.

2.4.5 Data analysis

WR were coded by a research assistant, who completed seven hours of training with one of the researchers prior to commencing coding. A second research assistant, who underwent the same training, completed coding for interrater reliability. Training consisted of a review of the Cook et al. (2019) modifications to Plack et al.’s (2005) code descriptions and sample questions (see appendices A and C) as well as practice in joint coding to establish intra-rater and inter-rater reliability. Where disagreements in coding arose during training, discussion continued and breadth elements and examples were re-defined until consensus was reached (as per Cook et al., 2019; Hill et al., 2012).

A total of 273 of a possible 308 WR were submitted (from 77 participants, across the three-year groups, at four time points—referred to as T1, T2, T3 and T4). Table 2 indicates the number of participants by year group who submitted a WR for each time point. Coding of the words, sentences and paragraphs was carried out within each participant’s responses to the guiding questions in each of their WR. A binary coding system was implemented when reviewing the WR (similar to that of Cook et al. 2019; Hill et al. 2012) whereby 1 was used to indicate presence of an element anywhere in the written reflection and 0 was used to indicate an element was not present in the written reflection. As there are nine breadth of reflection elements in the instrument, the highest tally a student could receive for a WR was nine for each submission. As per past studies, the research assistants and the researcher agreed that any one sentence or paragraph could contain more than one element (Cook et al., 2019; Hill et al., 2012). Descriptive statistics were used to report the average scores
participants in each year group exhibiting a specific element of breadth of reflection for each of the four time periods.

2.4.6 Statistical analysis

Mixed effects models were used to analyze the effects of time (both cross-sectional i.e. professional year group, and repeated measures data i.e. timepoint T1, T2, T3 and T4) and element (e.g., “content” or “process”) on the dependent variable, breadth of WRP (Bates et al., 2015). Dependent variables were coded as \( 1 = x \) and \( 0 = y \). The repeated measurement structure was represented by random effects for the intercept and slope on the participant level, estimating the dependency structure between random effects for each of the elements, assuming a multivariate normal distribution with an unstructured variance-covariance matrix. Analysis was carried out in the statistical software environment R (R Core Team, 2015), using the add-on packages lme4 (Bates et al., 2015) and ordinal (Christensen, 2015). The analysis for each element began with a full model consisting of the full effects of professional year group and time point for each breadth element. We created a random effects structure adding participants as random effects (with individual slopes for time point). Model evaluation proceeded in a backward-stepwise iterative fashion seeking to reduce the full model to a reduced model containing only significant effects (with alpha set at .05). Model fitting for each element was independently supported by fitness comparisons.

2.4.7 Reliability

Analysis of inter-rater and intra-rater agreement for breadth of reflection at the paragraph level was completed for 20% of WR using percent agreement (number of times the raters agree divided by the total number of observations multiplied by 100) (Miles & Huberman, 1994) and kappa statistics (difference between observed and hypothetical probability of chance agreement) (Landis & Koch, 1977). Strength of agreement was determined using criteria by Landis and Koch (1977), (kappa values of <0 suggest poor agreement, 0.01–0.20
slight agreement, 0.21–0.40 fair agreement, 0.41–0.60 moderate agreement, 0.61–0.80 substantial agreement and 0.81–1.00 almost perfect agreement). Inter-rater reliability of mean percentage agreement presence of breadth of elements ranged from 75% to 99% with a mean of 91% kappa values ranged from -0.03 to 1 with a mean of 0.44. Strong inter-rater reliability was demonstrated for “attend” and “return” elements. Moderate inter-rater reliability was demonstrated for “process” (89%), “premise” (98%), and “reflection-for-action” (95%) elements. Fair agreement was demonstrated for “reflection-on-action” (90%) and “re-evaluate” (95%). Poor to slight agreement was demonstrated for “reflection-in-action” (97%), “content” (99%) and “re-evaluate” (95%). The variation in kappa values despite high percent agreement is a result of kappa underestimating agreement for elements “reflection-in-action”, “content” and “re-evaluate”. These elements only occur in a small number of instances (Viera & Garrett, 2005). Intra-rater reliability for breadth of elements yielded a mean percent agreement of 98% with a range of 97% to 100 % (kappa values ranged from 0.65 to 1 with a mean of 0.88) indicating strong reliability across the elements.
2.5 RESULTS

A total of 46 participants (60% of possible participants who consented to participate in the study) submitted a WR at each of the four time points (T1, T2, T3, T4). Table 2-2 provides details of participants, organized by professional year and time point and indicates participant WR submissions. All professional year groups demonstrated participant attrition over time.

Table 2-4 Number of participants who submitted a written reflection for each time point across the academic year (% of written reflections compared to the expected number)

<table>
<thead>
<tr>
<th>Professional year</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>26 (100%)</td>
<td>24 (92%)</td>
<td>19 (73%)</td>
<td>18 (69%)</td>
</tr>
<tr>
<td>Second</td>
<td>29 (100%)</td>
<td>28 (96%)</td>
<td>27 (93%)</td>
<td>24 (82%)</td>
</tr>
<tr>
<td>Final</td>
<td>22 (100%)</td>
<td>20 (91%)</td>
<td>15 (68%)</td>
<td>13 (59%)</td>
</tr>
<tr>
<td>Totals</td>
<td>77(100%)</td>
<td>72 (94%)</td>
<td>66 (79%)</td>
<td>55 (71%)</td>
</tr>
</tbody>
</table>

2.5.1 The effect of time on breadth of written reflective practice across year groups.

Figure 2-1 demonstrates the distribution of participants in each year group exhibiting a specific element of breadth of reflection averaged over the four time periods. Participants consistently demonstrated use of the lower level breadth element “return”, with “reflection-on-action” and “attend” also demonstrated by the majority of participants. The elements described as higher-level reflective practice elements “reflection-in-action”, “premise”, “content” and “re-evaluate” were demonstrated by a smaller number of participants. However, the higher-level reflective practice elements show an upward trend across the three-professional-year groups indicating that, as clinical experience increased, more participants demonstrated these elements.
To examine the data statistically, separate generalized linear mixed effect models (glmer) were run, with each of the elements as a binomial dependent variable (Bates et al., 2015). The fixed effects were professional year group (First, Second and Final) and time point within those professional year groups (T1, T2, T3 and T4). The outputs of the final statistical models for each element are shown in Table 2-5. Models could not be fitted for “content” and “reflection-in-action” due to limited data samples and for “return” due to ceiling effects. To compare second professional year students against final professional year students we relevelled each model for each element with second professional year students mapped to the intercept (Table 2-5).

The final models revealed that for the element of “attend” there was a significant positive effect of time across all professional year groups (final professional year students $\beta = 1.45 (.71)$, $z = 2.04$, $p < 0.05$), second professional year students ($\beta = 3.09 (.82)$, $z = 3.75$, $p < 0.001$), first professional year students $\beta = -3.09 (.82)$, $z = -3.75$, $p < 0.001$). There was a
significant positive effect of time and “re-evaluate” for second professional year students only \((\beta = 1.02 (.53), z = 1.92, p < 0.05)\). Positive trends over time was identified for second professional year students for the elements of “reflection-on-action” \((\beta = 1.13 (.60), z = 1.90, p= 0.06)\) and final professional year students for the element “reflection-for-action” \((\beta = .81 (.46), z = 1.75, p =0.08)\). A significant negative effect of time was also identified for the element of “re-evaluate” for final professional year students only \((\beta = .72 (.27), z = 2.67, p < 0.05)\). Combined, the models for “attend”, “premise”, “re-evaluate” and “reflection-for-action” support a trend for an increase in the proportion of reflective practice elements across the degree program, with all students demonstrating the element of “return” and a small data sample limiting interpretation of elements “content” and “reflection-in-action”.

2.5.2 The effect of time on breadth of written reflective practice within professional year groups.

Figures 2-2, 2-3 and 2-4 demonstrate the proportion of participants in each professional year group exhibiting a specific element of breadth of reflection at each of the four time periods (T1, T2, T3 and T4). Within professional year groups the majority of trend lines are moving in a similar positive direction over time. For final professional year students, the final time point visually indicates an effect of time for higher level elements (Figure 2- 4). Time point two for first and second professional year students visually indicates an effect of time for the element “re-evaluate” (Figure 2-2 and 2-3). Negative trends for “reflection-for-action”, and “process” elements and variable proportion of “reflection-on-action” are seen for final professional year students (Figure 2-4). The negative trend “reflection-in-action” in the final professional year was unexpected.
Figure 2-0-2 Proportion of first professional year participants that demonstrated an element of breadth of reflection at that particular time point (time 1–4). See Appendix A for a definition of each breadth element.

Figure 2-0-3 Proportion of second professional year participants that demonstrated an element of breadth of reflection at that particular time point (time 1–4). See Appendix A for a definition of each breadth element.
Proportion of final professional year participants that demonstrated an element of breadth of reflection at that particular time point (time 1–4). See Appendix A for a definition of each breadth element.

To evaluate the effect of time on the demonstration of the various elements within each professional year group we utilised the separate glmer models and backwards stepwise process described above for each element (Table 2-5). A positive interaction effect exists between final professional year students and time for the elements “attend” (β = 1.47 (.56), z = 2.65, p < .01), “re-evaluate” (β = 1.73 (.39), z = 4.49, p < 0.001) and “premise” (β = .92 (.46), z = 1.99, p < .05). A positive interaction effect exists between second professional year students and time for the elements of “attend” (β = 1.47 (.56), z = 2.65, p < 0.001), and “reflection-on-action” (p < 0.05). Finally, to examine the effect of time within the first professional year we releveled each model for each element with second professional year students mapped to the intercept. This analysis revealed a significant positive effect of time within first professional year students for the elements of “reflection-on-action” (β = .67 (.32), z = 2.08, p <0.05) and “attend” (β = 1.41 (.42), z = 3.38, p < .001).
Table 2-5 Coefficients of six binomial mixed-effects models, one for each element of breadth of written reflection (excluding Return, Reflection-in-action, Content). Following the backwards step wise process, the best fit models are reported.

| Model      | Fixed Effects                                      | Estimate | Std. Error | Z value | Pr (>|z|) |
|------------|----------------------------------------------------|----------|------------|---------|----------|
| Model 1:   | **Attend**                                         |          |            |         |          |
|            | Intercept                                          | 0.05     | 0.42       | 0.12    |          |
|            | First year students                                | -3.09    | 0.82       | -3.75   | 0.00     | ***      |
|            | Second year students                               | 3.09     | 0.82       | 3.75    | 0.00     | ***      |
|            | Final year students                                | 1.45     | 0.71       | 2.04    | 0.04     | *        |
|            | Time                                               | 0.72     | 0.27       | 2.67    | 0.01     | **       |
|            | First year student development over time compared to second year students | 1.41     | 0.42       | 3.38    | 0.00     | ***      |
|            | Final year student development over time compared to first year students | 0.06     | 0.53       | 0.12    | 0.91     |          |
| Model 2:   | **Reflection on Action**                           |          |            |         |          |
|            | Intercept                                          | 0.82     | 0.39       | 2.09    |          |
|            | First year students                                | -1.13    | 0.60       | -1.90   | 0.06     |          |
|            | Second year students                               | 1.13     | 0.60       | 1.90    | 0.06     |          |
|            | Final year students                                | -0.43    | 0.56       | -0.76   | 0.44     |          |
|            | Time                                               | 0.17     | 0.23       | 0.75    | 0.45     |          |
|            | First year student development over time compared to second year students | 0.67     | 0.32       | 2.08    | 0.04     | *        |
|            | Final year student development over time compared to first year students | 0.18     | 0.35       | 0.51    | 0.61     |          |
|            | Final year student development over time           | 0.84     | 0.34       | 2.46    | 0.01     | *        |
compared to second year students

| Model 3: Reflection for Action | Intercept | 0.95 | 0.54 | -1.76 |
|                               | First year students | -0.37 | 0.43 | -0.87 | 0.39 |
|                               | Second year students | 0.37 | 0.43 | 0.87 | 0.39 |
|                               | Final year students | 0.81 | 0.46 | 1.75 | 0.08 |
|                               | Time | -0.28 | 0.14 | -2.04 | 0.04 |

| Model 4: Process | Intercept | 0.93 | 0.29 | 3.24 |
|                 | First year students | 0.41 | 0.31 | 1.34 | 0.18 |
|                 | Second year students | -0.41 | 0.31 | -1.34 | 0.18 |
|                 | Final year students | -0.41 | 0.34 | -1.20 | 0.23 |
|                 | Time | -0.14 | 0.12 | -1.24 | 0.22 |

| Model 5: Re-evaluate | Intercept | -1.09 | 0.42 | -2.60 |
|                      | First year students | -1.02 | 0.53 | -1.92 | 0.05 |
|                      | Second year students | 1.02 | 0.53 | 1.92 | 0.05 |
|                      | Final year students | -1.22 | 0.70 | -1.75 | 0.08 |
|                      | Time | -0.35 | 0.40 | -0.86 | 0.39 |
|                      | Final year student development over time compared to second year students | 0.35 | 0.34 | 1.02 | 0.31 |
|                      | Final year student development over time compared to first year students | 1.38 | 0.41 | 3.35 | 0.00 |
|                      | Final year student development over time compared to second year students | 1.73 | 0.39 | 4.49 | 0.00 |

<p>| Model 6: Premise | Intercept | -3.02 | 0.82 | -3.69 |
|                 | First year students | -0.96 | 0.90 | -1.07 | 0.28 |
|                 | Second year students | 0.96 | 0.90 | 1.07 | 0.28 |
|                 | Final year students | -0.07 | 1.04 | -0.06 | 0.95 |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>0.01</th>
<th>0.40</th>
<th>0.03</th>
<th>0.97</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year student development over time compared to second year students</td>
<td>-0.96</td>
<td>0.90</td>
<td>-1.07</td>
<td>0.28</td>
</tr>
<tr>
<td>Final year student development over time compared to first year students</td>
<td>0.77</td>
<td>0.54</td>
<td>1.43</td>
<td>0.15</td>
</tr>
<tr>
<td>Final year student development over time compared to second year students</td>
<td>0.92</td>
<td>0.46</td>
<td>1.99</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Note: * p = 0.05, ** p = 0.01, *** p = 0.001
The purpose of the study was to examine the effect of time on breadth of WRP across the SLP clinical program and within professional year groups. The results indicated that, in general, as clinical experience increased so did demonstration of SLP student WRP abilities, specifically for the elements “attend”, “reflection-for-action”, “re-evaluate” and “premise”. Within SLP professional year groups, final professional year students improved the most in their ability to demonstrate higher-level RP elements, second professional year students were the most variable group in their WRP abilities and first professional year students improved the most in their demonstration of WRP abilities for low level RP elements of “attend” and “reflection-on-action”. The findings are discussed with implications for clinical education, limitations and future research.

2.6.1 Breadth of written reflective practice as clinical experience increases.

Consistent with previous studies, SLP students demonstrated a trend towards increasing the presence of specific elements of WRP over time as clinical experience increased (Cook et al., 2019; Hill et al., 2012; Plack et al., 2005). The elements of “attend” (acknowledges and begins to work with feelings) and “reflection-for-action” (occurs before being faced with the situation; begins to plan for the future) were present significantly more often across the degree program as clinical experience increased, with a positive trend across the degree program for the element of “re-evaluate” (reappraises the situation vis-à-vis past experiences). One reason for the similar findings across a longer time period, as compared to previous studies, could be related to the provision and timing of formative feedback (Cook et al., 2019; Plack et al., 2005; Williams et al., 2000). For example, the Cook et al. (2019) study found similar results in a six-week period. In that study, the timing and characteristics of feedback were controlled for, possibly positively influencing the emergence of higher-level
reflective skills within the six-week study. For the current study, as part of following usual practice, this practice was encouraged but not evaluated. It is unknown whether the provision of feedback provided in a systematic fashion (in terms of timing and type), as implemented in Cook et al. (2019), would have resulted in the demonstration of higher-level reflective elements more often. The role of formative feedback in fostering WRP skills warrants further investigation.

Students in the first professional year of their degree program exhibited a high proportion of low-level RP elements (“return”, “attend” and “reflection-on-action”) as clinical experience increased. As a group, these students appeared to have a strong focus on reflecting on feelings, emotions, and describing events—possibly due to being exposed to a number of new clinical experiences. This finding was expected given similar findings for a previous study by Hill et al. (2012) for first professional year SLP students. The results are also in line with Cook et al. (2019)’s suggestion that the guiding questions may prime students to demonstrate the low-level RP elements. For students in the second and final professional years, these RP elements (“return”, “attend” and “reflection-on-action”) are demonstrated in similar proportions of students in both year groups. Additionally, emotional reactions even perhaps appear of less importance to students as they attempt to explore higher level reflective elements (Cook et al., 2019). It seems likely that these results relate to enhanced confidence facilitated by an increase in academic knowledge and clinical experiences.

Regardless of clinical experience level, the presence of the majority of higher-level RP elements e.g. “content”, “premise” “reflection-in-action” was low. While it was anticipated that final professional year students might demonstrate greater presence of these elements over time, the small number of final professional year SLP students identified as demonstrating these elements was unexpected. However, on further examination, this finding is similar to past studies for SLP, nursing and physical therapy students regardless of year of
clinical experience (Cook, et al., 2019; Duke & Appleton, 2000; Hill et al., 2012; Plack et al., 2008). For example, only 5.9% of final year physical therapy student WRP contained reflection-in-action, and only one of 45 first professional year SLP student writing samples contained “premise” or “reflection-in-action” (Hill et al., 2012). Therefore, we suggest that this finding can be attributed to two possible considerations: that the asynchronous mode of WRP may limit demonstration of some RP elements as students are looking back on the experience. It may be that WRP lends itself to better demonstrating specific breadth elements compared to the higher-level breadth elements. Second, that students with the most autonomy in clinical placements (final professional year students), are more intrinsically motivated to showcase their reasoning, learning and problem-solving in written form, knowing that their CE or supervisor has not already observed their practice in the moment. Therefore, educators could encourage final professional year students to use WRP as an opportunity to discuss their reasoning for decision making, and problem-solving in-the-moment in detail, with comparisons to previous clinical experiences (Cook et al. 2019; Duke & Appleton, 2000; Plack et al., 2005).

2.6.2 Breadth of written reflective practice within each year group

The current study highlighted both a positive transfer of learning and variability for demonstration of specific elements within professional year groups for specific elements of WRP. First professional year students demonstrated more low-level RP elements over the course of the first professional year in comparison to other year groups. The continued presence of many lower-level RP elements (excluding “process”) both within the first professional year and between the first to second professional year suggests that a transfer of learning may exist for demonstrating low-level RP elements. The consistency of using low-level RP elements from the first professional year to the second supports the notion that WRP practice is effective as a learning tool for students, particularly for first identifying the low-
level RP elements the student is readily able to demonstrate, and then providing individualized education and feedback with the aim of developing the student’s higher-level RP elements (Cook et al., 2019).

Second professional year (or mid-level) students, as a group, demonstrated the most variability across time points and elements for WRP. While unexpected, the variability may in fact be related to student patterns of development in clinical education. Dunne et al.’s (2019), study described three trajectories of development for WRP and noted that variability characterized SLP learners’ RP at similar stages of the professional program to students in the current study. Furthermore, clinical competency data from Competency Assessment in Speech Pathology, COMPASS®, (a valid and reliable standard outcome measure for clinical competency of SLP students that is utilised throughout SLP clinical programs in Australia, New Zealand and Hong Kong) for second professional year students, also suggests such variability is an acceptable pattern for this group of SLP learners (McAllister et al., 2013b). In the current study, some second-professional year students are trending towards exploring higher level reflective elements such as examining theories, bias, values and other perspectives (“re-evaluate”, “content” and “premise”). Although, within this group of students, demonstration of such WRP skills were inconsistent over time. This further reinforces the developing nature of higher-level RP skills, and suggests this process could be similar to learning a new skill, where time can play a role in new skill acquisition (Duke & Appleton, 2000).

As a group, final professional year students demonstrated a higher proportion of higher-level RP elements (“revaluates”, “content”, “premise”, “reflection-in-action”) compared to first and second professional year students. This finding further reinforces that some aspects of RP require time and repeated exposure (Cook et al., 2019; Duke & Appleton, 2000; Mezirow, 1991; Wong et al., 1995). Of significance was the increase in proportion of
final professional year students demonstrating the elements “re-evaluate” (reappraises the situation vis-à-vis past experiences) and “premise” (recognizes and explores own assumptions, values, beliefs and biases) by time 4 of the final professional year. This finding may illustrate the students moving towards the description of “reflective practitioner” required in the workplace, which supports workplace readiness as students make comparisons between past experiences, clients and evidence-based practice (Chabeli, 2010; Dowling, 2001; Hill et al., 2012; Plack et al., 2005; Reynolds, 1997; Russell, 2005; Schön, 1983, 1987; Williams et al., 2000).

Of interest to note is the specific time point where second and final professional year students demonstrated a high proportion the element of “re-evaluates” (reappraises the situation vis-à-vis past experiences). Both occurred during “block placements” (“block placements” are typically described as full day clinical placements across a consecutive number of weeks). Several reasons should be considered for this finding. Firstly, it may be that the full-time clinical experience promoted higher levels of comparisons between clinical experiences and academic theory (“re-evaluates”). For example, on a full-time block placement one would typically expect that students spend more time in clinical practice and work alongside more clients compared to a part-time placement. As a result, this may contribute to an increased understanding of clinical issues, as well as the cumulative effect of more clients and experiences, from which to make comparisons between, in a shorter period of time. Second, perhaps the block placement better promotes internalization of reflection as a learning strategy. Finally, the greater autonomy given to the SLP students in their final weeks of the placement possibly had a positive impact on the demonstration of critical RP skills (Duke & Appleton, 2000; Dunne et al., 2019). This however, warrants further investigation.

The finding of the current study of the complete absence of the “reflection-for-action”
element for final professional year participants, and significant reduction in proportion of students demonstrating the same element at time 4 for first and second professional year students was unexpected. No previous studies have reported this finding for the “reflection-for-action” element. Instead, this lower-level RP element has previously been present for a high proportion of student WR (Cook et al., 2019; Hill et al., 2012, Plack et al., 2005). One suggestion is that this finding could be relative to all participants finishing their respective clinical placements. One might expect students on their final placements for the year, to continue to identify future learning opportunities, and thus support life-long learning practices. Rather, we suggest, that students may instead be signalling closure on the clinical experience, and evaluating their overall learning for the clinical placement via demonstration of the element “reflection-on-action”. A final interpretation of this finding could suggest that students might view RP as a requirement for the course, rather than a life-long learning strategy (Duke & Appleton, 2000; Dunne et al., 2019; Greenwood, 1998).

2.6.3 Implications for clinical education

The findings of this study have positive implications for both assessment and development of students’ WRP skills including the provision of tailored support, formative feedback for students and promoting RP as a self-directed learning experience. This study has demonstrated that in general students do demonstrate an increase in proportion and type of breadth of WRP abilities over time across the clinical program. This indicates a transfer of learning may exist for demonstration of WRP skills by SLP students. However, the variation across RP elements and time points for each professional year group suggests that clinical educators and field supervisors should first assess RP abilities, utilizing the coding schema or its concepts, and then aim to foster development of RP abilities on an individual scale (Dunne et al., 2019, Plack et al., 2005). This also mirrors the individualized way that SLP work alongside clients in the field. For example, educators could use the student’s first WR as a
baseline for reflective ability and then plan to support, engage, and scaffold development of student RP abilities via use of formative feedback on the reflective processes used beginning with the low-level RP elements. Further examples of tailoring RP opportunities to the individual can be achieved by a focus on formative feedback, reflective questioning, and even directing students to a theme to focus on for the WR (e.g. comparison between familiar and unfamiliar clinical experience) in order to further develop and then evaluate reflective practice abilities. When considering formative feedback, given the high proportion of low level reflective elements (“return”, “attend” and “reflection-on-action”) exhibited by students, particularly across the first professional year, educators can feel confident in moving away from formative feedback and reflective questioning focused heavily on examining student emotions, feelings, and description of events for repeated clinical experiences, and direct reflective questioning toward higher level reflective elements such as “re-evaluate” and “content”. Finally, this study reinforces that, WRP continues to provide students with another learning space promoting individualized and self-directed learning as well as time to deliberate after a session to supplement face to face discussions with educators (Cook et al., 2019; Dunne et al., 2019; Plack et al, 2008). WRP appears to provide a purposeful opportunity for examination of one’s clinical and professional performance, growth and feelings, which may not arise in face-to-face exchanges.

2.6.4 Limitations and future directions

The current study has some limitations but provides suggestions for useful future research directions. The current study resulted in similar inter-rater reliability outcomes to past studies, specifically for the higher-level elements of RP (“reflection-in-action”, “content”, “premise” and “re-evaluates”), despite a robust training package for the SLP coding the transcripts (Cook et al., 2019; Plack et al. 2005). This reinforces past suggestions that perfect inter-rater agreement is not achievable due to the individualized nature of WR, and the kappa equation
underestimating reliability where few instances of a specific breadth element occur (Cook et al., 2019; Garrity et al., 2019; Plack et al., 2005; Viera & Garrett, 2005). As also suggested by the authors and others, the small number of students demonstrating higher level RP elements in writing may be due to the asynchronous nature of WRP (i.e. not occurring at the same time as the experience) or level of autonomy on clinical placement (Cook et al., 2019; Duke & Appleton, 2000; Plack et al., 2008). The nature of WRP activities, whereby students are looking back on the experience, combined with the guiding questions utilised for this study, yields important future research and clinical supervision considerations. Such as, exploring whether we are asking the right questions to promote and evaluate higher level RP thinking? In particular, are educators asking the right questions for the RP abilities of final year students who are about to enter the workforce? Useful future directions to support enhanced engagement for SLP students may include, the role of formative feedback in developing WRP skills, the optimum amount of WRP activities and guiding question type for optimizing WRP and how WRP and RP activities transfer to SLP workplaces.
2.7 CONCLUSIONS

This study indicated a positive impact of time on the demonstration of specific WRP skills for SLP students. Secondly, the study identified a positive trend for demonstrating a higher proportion of WRP breadth elements across the SLP degree program. A usual practice, and consistent format of guiding questions, formative feedback on the student’s process of reflection and real-life clinical placement experiences was utilised. The results support the continued use of WRP activities in clinical education programs. WRP supports the theory of transfer of learning across clinical placements, offers a reliable way for the educator or clinician to first assess and then tailor reflective questions to foster student development of RP ability and remains a useful tool to utilise alongside face to face interactions with students (Cook et al., 2019; Sheepway et al., 2014). Finally, a number of questions remain unanswered including the role of feedback in developing WRP skills and how RP activities completed in clinical programs transfer to SLP workplaces.

Where chapter two focussed on assessment of WRP for breadth of reflection, chapter three aimed to examine a further assessment measure for WRP, depth of reflection, as well as determining a possible relationship between RP and clinical competency development across the SLP degree program. Additional investigation of WRP assessment techniques as clinical experience increased, was pursued in order to better understand how depth of reflection could be utilised to make overall judgements of SLP student RP abilities. Examination of a possible relationship between RP and clinical competency was also warranted given studies and organisations inferring that RP may be a core feature of clinical competence and/or a requirement for workplace practice on graduation from clinical programs without empirical evidence to support its use. Therefore, as suggested in chapter two, examination of WRP over
time may provide quantitative evidence of a positive growth relationship between RP,
development of clinical skills and clinical competence.
CHAPTER THREE: EXAMINATION OF DEPTH OF WRITTEN REFLECTIVE PRACTICE ABILITIES FOR SPEECH-LANGUAGE PATHOLOGY STUDENTS; THE IMPACT OF TIME AND CLINICAL COMPETENCY.
3.2 ABSTRACT

Written reflective practice (WRP) is a teaching and learning activity utilised in clinical programs. Identifying depth of WRP is one tool that aims to provide an overall rating on the students’ written reflective ability. Engaging in reflective activities as a student, has been proposed to have a positive relationship with clinical competency.

Aims: 1. To examine the impact of time on depth of WRP for SLP students across and within each year group (first, second and final) of the SLP the clinical program. 2. To determine whether a relationship exists between depth of WRP and level of clinical competency of SLP students.

Methods: Participants were 70 undergraduate SLP students in their first, second or final professional year of the clinical program. Participants wrote critical reflections following an interaction with a client/s as part of their clinical education experiences. Depth of WRP for each participant was measured utilizing a modification of Plack et al.’s (2005) coding schema. This was completed at four time points across the academic year for each professional year (start and end of the two 12-week semesters). In keeping with usual practice, SLP student level of clinical competency was assessed using the Competency Assessment in Speech Pathology (COMPASS®) at the end of both semesters.

Results: Depth of WRP ratings for all four timepoints were available for 46 of the original 70 students. There was a statistically significant association between time and development of depth of WRP for students in their final professional year ($\beta = .66 (.30), z = 2.22, p < .05$). There was no association between depth of WRP and level of clinical competency.

Conclusion: A one-off judgement of WRP depth may be useful for supporting overall judgements of RP ability, but is less sensitive if the goal of the activity is to measure student development of RP skill. This research contributes to the evidence base examining how WRP is assessed and utilised in clinical programs.
3.3 INTRODUCTION

The objective of Speech-language Pathology (SLP) programs is to develop students into competent clinicians. Competency development is described as both the participation in clinical practice and learning from clinical practice (Walker, 1985). Specific to SLP, competency is defined as “…combinations of knowledge, skills and personal qualities that contribute to sets of occupational and professional competencies that combine to create competent professional performance…” (p 190 Sheepway et al., 2014).

Across allied health, nursing and medical clinical education programs competency is measured in a variety of ways and differs between program, governing body, licensing board and country of training. In general, the governing bodies or licensing boards have identified the core areas, minimum skills or certification standards required on entry to their specific profession. This level of competency also termed entry level practice (Fouad et al., 2009; Standards of Proficiency for Speech and Language Therapists, 2013; Nursing Council of New Zealand, 2022; Occupational Therapy Board of New Zealand, 2022; Physiotherapy Board of New Zealand, 2018; Speech Pathology Australia, 2020).

3.3.1 Clinical competency for SLP clinical programs

Specific to SLP students training programs in Australia, New Zealand and Hong Kong the entry level practice competencies are derived from seven Competency Based Occupational Standards for Speech Pathologists (CBOS) competencies (Assessment, Analysis and Interpretation, Planning evidenced-based speech pathology practices, Implementation of speech pathology practice, Planning, providing and managing speech pathology services, Professional, and supervisory practice and Lifelong learning and reflective practice) (Speech Pathology Australia, 2011). An additional four professional competencies (Reasoning, Communication, Learning and Professionalism) are combined
with the CBOS standards and comprise the Competency Assessment in Speech Pathology (COMPASS®). This valid and reliable tool assesses and tracks competency development for SLP students (McAllister et al., 2013a; Speech Pathology Australia, 2011). The COMPASS® instrument has been utilised in research as the measure of competency in studies examining clinical competency as influenced by placement type and simulation (Hill et al., 2021; Sheepway et al., 2014). In comparison, training programs in the United States utilise individualized fit-for-purpose measures to assess competency. These differ from university to university and must meet the entry level requirements of the Professional Practice Competencies listed in the Standards for Accreditation of Graduate Education Programs in Audiology and Speech-Language Pathology (Council on Academic Accreditation in Audiology and Speech-Language Pathology, 2020).

The requirements for assessing each area of competency also differ across SLP clinical programs and are tailored to meet the requirements of university quality assurance process (e.g. Academic Quality Assurance of New Zealand Universities) and accreditors (e.g. New Zealand Speech & Language Therapy Association Program Accreditation Committee). However, the exact choice and design of assessment is typically determined by the clinical program, and can take into account the needs of their student population and university regulations. For example, assessments can be fit for purpose validated evaluation of clinical competency (e.g. COMPASS® (McAllister et al., 2013a), one-off assessments that combine for cumulative assessments such as practical assessments, objective structured clinical examination (OSCE), written assignments, and examinations.

### 3.3.2 Predicting student clinical competency

Identifying factors that contribute to student development of clinical competency is of particular interest to researchers in academic and clinical education programs. The identification of factors critical to the development of clinical competency would allow
educators to streamline the admissions process and/or provide bespoke and tailored support during training that better meets student needs (Boles, 2018; Middlemas et al., 2001). Past studies in athletic, SLP, nursing, dental and medical student training programs examining the ability to predict academic and clinical competency prior to admission to the clinical programs or prior to workplace practice have yielded varying results (Blackman et al., 2007; Boles, 2018; Gadbury-Amyot et al., 2005; Stacey & Whittaker, 2005; Troche & Towson, 2018). One key measure used in a number of studies is that of grade point average (GPA). GPA alone has thus far been found to be an ineffective predictor of future academic and/or clinical competency (Blackman et al., 2007; Boles, 2018; Stacey & Whittaker, 2005; Troche & Towson, 2018). Alternatively, a combination of GPA and number of clinical hours were found to be significant in identifying athletic training students’ ability to pass future certification examination (Middlemas et al., 2001). Yet, for dental hygiene students, no relationship was identified between competency measures, GPA and the likeliness that students would then pass the required examination for licensure at the end of the clinical program (Gadbury-Amyot et al., 2005). However, moving away from GPA, use of a one-off objective structured clinical examination (OSCE) early in medical training did predict future success for clinical competency in clinical programs and postgraduate training (Wallenstein et al., 2010).

Beyond academic and clinical performance, an individual’s ability to accurately rate their own competence in clinical practice has also been suggested and examined as a measure of competency (Blackman et al., 2007; Chambers, 1993). Self-rating was identified as a predictive factor in judging competence for undergraduate nursing students (Blackman et al., 2007). Self-assessment as part of student portfolios is commonly used in clinical programs and has been suggested as a more robust way to assess competency over time rather than a
one-off assessment. (Gadbury-Amyot et al., 2005). Self-assessment is also utilised as one part of the COMPASS® assessment for SLP students (McAllister et al., 2013a).

Reflective practice (RP) is a further learning tool and form of self-assessment that is utilised with students in clinical programs. Specific to SLP, RP is defined as a “… means by which learners can make sense of and integrate new learning into existing knowledge” (McAllister & Lincoln, 2004 p 125). RP activities have also been used as a piece of assessment, to contribute to either clinical competency or academic grades or a combination of both in clinical education programs (Boud, 1995; Levett-Jones, 2005; Musolino, 2006). The utilization of RP can be found as written reflections (WR) included in ePortfolio assignments (Gadbury-Amyot et al., 2005; Walton et al., 2016), reflective discussions to support practical assessments (VIVA VOCE) (Orrock et al., 2014), stand-alone WRP assignments (Cook et al., 2019), and evaluations of clinical competency (e.g. COMPASS®, McAllister et al., 2013a).

3.3.3 Reflective practice and development of competency

RP skill has been long described as a stepping stone towards clinical competency, yet empirical evidence supporting this relationship is limited and outcomes of studies have found mixed results (Caty et al., 2015; Schön, 1983, 1987). To date, examination of clinical competency and RP has largely been presented via one-off assessment tasks, or student perception of RP and competency development (Chabeli, 2010; Domac et al., 2015; Lim & Low, 2008b, 2008a; Mamede et al., 2008; Tsingos-Lucas et al., 2017). For example, studies examining the perceptions of nursing student have suggested that a positive relationship exists between RP and clinical competence level (Eng & Pai, 2015; Pai, 2016). In comparison, a study examining clinical competency of occupational therapy students revealed a positive relationship between the student self-assessment scales for reflective practice and occupational therapy competence, but not between student self-assessment of
reflective practice and the educator rated clinical performance level (Iliff et al., 2021). One reason suggested for the lack of relationship was due to the clinical performance tool chosen, as well as a lack of questions related to reflective practice within the tool (Iliff et al., 2021). A further consideration, is that the combination of student self-assessment for RP and educator assessment of competency could the reason no relationship between RP and competency was identified. Finally, this study did not include examples of students’ RP performance such as student written reflective practice (WRP). Therefore, judgements of RP performance were not made based on observations of RP activities.

WRP is a RP activity that is regularly employed in clinical programs, including SLP where development of RP skills over time as clinical experience increases has been reported (Cook et al., 2019; Dunne et al., 2019). For students in clinical programs, educators suggest that WRP skills are important for clinical competency development or contribute to clinical competency, however this has not been tested for students despite being embedded into clinical programs (Aronson et al., 2012; Caty et al., 2015; Chabeli, 2010; Cook et al., 2019; Halton et al., 2007; Ng et al., 2012b; Plack et al., 2005). Furthermore, recent studies examining change in SLP student WRP skill over time or with increased clinical experience have indicated a positive relationship exists for depth of WRP over a six-week period (Cook et al., 2019). Depth of WRP is suggested as an overall judgement of WRP skill, whereby SLP students are judges as falling into one of five categories (“Non-reflector”, “Emerging-reflector”, “Reflector”, “Emerging-critical-reflector”, or “Critical reflector”. See table 3.6 for definitions) (Cook et al., 2019; Plack et al., 2005). Alternatively, three trajectories of WRP skill development were identified SLP students over a period of ten weeks: “steady growth”, “no clear change” and “gradual decline” (Dunne et al., 2019). However, SLP student WRP skills have not been examined in relation to clinical competency.
In summary, the ability to predict clinical competency has been largely investigated though one-off snap-shots of skills or varied types of skills such as GPA, self-rating scales, educator rating scales, portfolios, practical assessments and clinical placements in medical and allied health programs with varying outcomes (Blackman et al., 2007; Boles, 2018; Chambers, 1993; Gadbury-Amyot et al., 2005; Iliff et al., 2021; Middlemas et al., 2001; Stacey & Whittaker, 2005; Troche & Towson, 2018; Wallenstein et al., 2010). There remains an assumption that clinical competency development is aided or enhanced by RP activities such as WRP, however, further studies are needed to provide empirical evidence. This includes examining the relationship between SLP student clinical competency and development of RP abilities across a clinical program (Caty et al., 2015; Schön, 1987, 1983). To our knowledge no such study has explored an association between WRP depth and clinical competency across a speech-language pathology (SLP) clinical program. As such, this study aims to:

1. Examine the impact of time on depth of WRP for SLP students across and within each year group (first, second and final) of the SLP the clinical program.
2. Determine whether a relationship exists between depth of WRP and level of clinical competency of SLP students.

Hypotheses:

1. SLP student depth of WRP will increase as time increases (both across and within year groups).
2. A positive relationship will exist between depth of WRP and level of clinical competency, whereby higher depth category will occur with higher level of clinical competency.
This study received ethical approval from the Educational Research Human Ethics Committee of the University of Canterbury, New Zealand. All participants provided written consent to participate.

### 3.4.1 Study context

This study was conducted as part of the University of Canterbury, New Zealand clinical program for speech and language pathology students that is described in Chapter two section 2.4.1.

### 3.4.2 Participants

The study included the same 77 undergraduate students enrolled in clinical courses as part of the Speech-Language Pathology honours program, described in Chapter 2 section 2.4.2.

The average age of the participants was 21.5 years (SD = 3.95) with 75 females and 2 males participating in the study. See Chapter two, Table 2-3 for participant details by professional year. The study excluded any students who chose to withdraw from a clinical course during the semester (3 students).

### 3.4.3 Research design

The cross sectional and repeated measures study design utilised in Chapter 2 was continued for the current study.

### 3.4.4 Instruments

1) Coding of participants’ written reflections was undertaken using the procedure defined by Plack et al. (2005), modified by Cook et al. (2019), and utilised in chapter 2 (section 2.4.3) and described in Appendix A. Chapter 2 utilised the data gained from the breadth of reflection component. The current study utilised data gained from the depth of
reflection component as the outcome measure for this study. Depth of reflection is
described as an overall level of reflective practice skill (Plack et al. 2005, Hill et al.
2012). Depth of reflection has also been described as an overall measure of reflective
competency (Plack et al., 2005). The five depth categories (“Non-reflector”, “Emerging-
reflector”, “Reflector”, “Emerging-critical-reflector”, or “Critical reflector”. See table 3.6
for definitions) allowed for comparison of category of reflection to level of clinical
competency gained as part of the COMPASS® assessment. For identification of depth of
reflection, in keeping with the Cook et al., (2019) methodology, the authors applied an
“if-then” rule-based system where by inclusion of specific breadth of reflection codes
informed the condition for depth of reflection (Table 3-6). The depth categories were
developed and based on the Plack et al. (2005) schema and further defined from readings
from Schön (1987), Mezirow (1991), and Boud et al. (1985). As per the 2019 study,
modifications to the “depth” categories proposed by Plack et al. (2005) were utilised
whereby “emerging reflector” and “emerging critical reflector” were introduced
following a review of the reflective practice literature in an attempt to make the
instrument more sensitive to subtle changes in depth of student reflection. The description
of depth categories and allocation of breadth codes to depth categories are found in table
3.6.

Table 3-6 Coding schema for depth of written reflective practice, modified from Plack et al.
(2005) (first modification for Cook et al. 2019, second modification by Cook, Messick and
McAuliffe 2020)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Breadth elements that contribute to depth category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-reflector</td>
<td>No evidence of reflection. No consideration of things that could change. Writing appears “mechanical”. Students are not demonstrating RP processes in their writing.</td>
<td>Return and/or Attend.</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
<td>Example</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Students are typically</td>
<td>describing events or emotions. Students may reject possibility of change as a result of describing they are right. Students are demonstrating minimal or inconsistent low-level elements of RP process in their writing. For example, students are first describing an event, then examine their learning, such as reflecting on their learning, identifying future plans based on the events described or describing clinical techniques or strategies utilised during the experience.</td>
<td>Students are first describing an event, then examine their learning, such as reflecting on their learning, identifying future plans based on the events described or describing clinical techniques or strategies utilised during the experience.</td>
</tr>
<tr>
<td>Emerging-reflector</td>
<td>The reflector is attempting to understand, examine or question clinical events and themselves. These students are more consistent in their reflection of their learning and are utilizing more than one element of reflection in their writing whereby they pause to examine their learning past/future, and strategies that supported or could support their clinical experience.</td>
<td>The reflector is attempting to understand, examine or question clinical events and themselves. These students are more consistent in their reflection of their learning and are utilizing more than one element of reflection in their writing whereby they pause to examine their learning past/future, and strategies that supported or could support their clinical experience.</td>
</tr>
<tr>
<td>Reflector</td>
<td>Students are using at least two RP breadth elements that are indicative critical reflectors. This involves moving beyond describing the experience and their learning. Instead students examine the situation or event from a different point of view, make comparison to previous learning or describe things that they identified and attempted to change in the moment and the result of the attempted change.</td>
<td>Students are using at least two RP breadth elements that are indicative critical reflectors. This involves moving beyond describing the experience and their learning. Instead students examine the situation or event from a different point of view, make comparison to previous learning or describe things that they identified and attempted to change in the moment and the result of the attempted change.</td>
</tr>
<tr>
<td>Emerging-critical-reflector</td>
<td>Students who are consistent in their examination of events. Students utilise all of the higher-level RP elements or breadth element of premise is included. The higher-level breadth code “premise” (examination and, questioning and/or possible modification of bias, assumptions or values), is pivotal to the category of “critical reflector” therefore, this alone can move the student into Consistently demonstrating higher level reflective practice elements. Premise or three higher level reflective practice elements (Reflection in action, Content, Re-evaluation).</td>
<td>Students who are consistent in their examination of events. Students utilise all of the higher-level RP elements or breadth element of premise is included. The higher-level breadth code “premise” (examination and, questioning and/or possible modification of bias, assumptions or values), is pivotal to the category of “critical reflector” therefore, this alone can move the student into Consistently demonstrating higher level reflective practice elements. Premise or three higher level reflective practice elements (Reflection in action, Content, Re-evaluation).</td>
</tr>
<tr>
<td>Critical reflector</td>
<td>More than one of the following (Reflection on action, Reflection for action, Process), and any other lower level elements may also be present.</td>
<td>More than one of the following (Reflection on action, Reflection for action, Process), and any other lower level elements may also be present.</td>
</tr>
</tbody>
</table>
the critical reflector category (Boud et al., 1985; Mezirow, 1991; Plack et al., 2005; Schön, 1987)

2) Competency Assessment in Speech Pathology (COMPASS®) is a valid and reliable standard outcome measure for clinical competency of SLP students that is utilised throughout the candidate’s SLP clinical program (McAllister et al., 2013a; 2013b). Furthermore, COMPASS® is used in all SLP programs in Australia, New Zealand and Singapore as one assessment of entry level practice. For the purpose of this assessment tool, the term competence is defined as an “observable competent action” (McAllister et al., 2013b). Each student is rated on eleven competencies and overall competency via a visual analogue scale (VAS) from novice to entry level. The competencies are made up of four Professional Competencies (Reasoning, Communication, Learning and Professionalism) and seven occupational competencies derived from the Competency Based Occupational Standards for Speech Pathologies (Entry level) (CBOS) (Speech Pathology Australia, 2011). The seven CBOS (Assessment, Analysis and Interpretation, Planning evidenced-based speech pathology practices, Implementation of speech pathology practice, Planning, providing and managing speech pathology Services, Professional and supervisory practice and Life-long learning and reflective practice) describe the standards and expected abilities for practicing SLPs in New Zealand and until recently in Australia. All eleven competencies have behavioural descriptors to guide the student and Clinical educator’s (CE) judgements. Behavioural descriptors in COMPASS® are organised into three performance levels (Novice, Intermediate and Entry-Level) and were developed following expert consensus or as part of a theoretical model that includes the following: complexity (e.g. Bloom’s 1994); taxonomy and the Structure of the Observed Learning Outcome, (Biggs & Collis, 1982); knowledge
application and integration (e.g. Benner, 1984; Benner et al., 1996; Dreyfus & Dreyfus, 1996); and level of guidance (e.g. Anderson, 1988; Brasseur, 1989) (McAllister, 2005; McAllister et al., 2013a).

As per recommendations by McAllister et al., (2013a; 2013b), students are required to complete their own ratings for all competencies as a self-evaluation practice and to further inform the CE’s judgement. The student and the CE then meet to discuss the student’s competency and complete the VAS. Finally, the CE is required to make a yes/no judgement indicating if the student has met the expected competency for the clinical placement. The eleven competencies are combined via a scoring system to provide a judgement of overall competency in SLP practice (McAllister et al., 2013b). The scoring system converts the VAS into one of seven categories representing increases in clinical performance, then to interval level data and finally parametric statistics are completed (McAllister et al., 2013b). The output includes a “raw score” (range 11-77, the sum of the eleven competencies), an “overall competency score” (range 144 – 835.25), an interval measure expressed as a scaled score) and an overall “zone of competency” (ZOC) (range 1-7, an interval measure indicating one of seven developmental ZOC determined by the student’s competency score). For this study, and in keeping with the recommendations from the COMPASS® technical manual, ZOC represents each student’s clinical competency score. ZOC has been reported in past studies examining SLP clinical competency (e.g. (Hill et al., 2021; Sheepway et al., 2014). For further reading on the development, validation and statistical properties of COMPASS® (McAllister et al., 2013b).

3.4.5 Procedure

This study employed the same procedure for the WR data described in Chapter 2 (section 2.4.4) with a small number of additions related to the COMPASS® instrument. In the final
week of semester one and two, as part of usual practice, the end placement COMPASS® Competency Assessment in Speech Pathology was completed with the participant and their CE. This instrument was administered via a secure website. Following this the COMPASS® ZOC data for each participant was extracted from ACCESS 2013 software. COMPASS® end placement clinical competency data was available for T2 and T4 (semester one and two) for second and final professional year students and T4 (semester 2) for first professional year students. As part of usual practice, the first clinical paper, for the first professional year group, does not utilise the COMPASS® tool as students are deemed “pre novice”.

3.4.5 Data analysis

Identification of the category for depth of reflection for each participant was automatically determined via an “if-then” rule system for breadth elements identified in their writing. See Chapter 2, Section 2.4.5 for details of the breadth analysis completed. COMPASS® end placement clinical competency data extracted for this study was the ZOC (1-7 interval level zones). Any fractions of zones were converted to whole numbers for assessment purposes (Hill et al., 2021). WR data was matched to COMPASS® ZOC scores for each participant and at each timepoint. For each timepoint, any data that could not be matched was excluded from the analysis. Average scores for the depth categories were reported using descriptive statistics. Visual inspection was completed to compare WR depth category for time 2 and 4 to COMPASS® ZOC score.

3.4.6 Statistical analysis

To examine the effect of time both within professional year groups (T1 -T4) and across professional year groups (First, Second and Final) on WR depth, mixed effects modelling was utilised (Bates et al., 2015). This was used in keeping with the Cook et al. (2019) analysis. Analysis was undertaken in R (R Core Team, 2015), using the add-on packages
lme4 (Bates et al, 2015) and ordinal (Christensen, 2015). A mixed-effects cumulative link logistic regression model for ordered categories was utilised. The aim was to predict the probability of participants to fall into ordered depth of reflection categories both across and within year groups (with alpha at 0.5). Slope parameters were included to model the change in probability over time for being allocated into a specific reflection depths category. Participant-specific changes in slopes were included in the model as normally distributed random effects.

To determine if relationship existed between WR depth and ZOC for clinical competency a second mixed-effects cumulative link logistic regression model for ordered categories was utilised. This examined depth of reflection categories both across and within year groups compared to ZOC score for T2 (second and final professional year group) and T4 (all year groups).
3.5 RESULTS

A total of 46 participants (60% of possible participants who consented to participate in the study) submitted a WR at each of the four time points (T1, T2, T3, T4). Chapter 2 section 2.5 Table 2 provides details of participants, organized by professional year and time point and indicates participant WR submissions. All professional year groups demonstrated participant attrition over time.

3.5.1 The effect of time on depth of written reflective practice across and within SLP year groups

Figure 1 illustrates the proportion of SLP students categorised as Non-reflector, Emerging-reflector, Reflector, Emerging-critical-reflector or Critical reflector and the change within these depth categories across time. No participants were categorised as Emerging-critical-reflector. At any time point the majority of participants were categorised as Reflectors, with Emerging-reflector as the next largest RP depth category. At the conclusion of the assessment period (T4) the majority of participants in the final professional year group had progressed into the higher categories of Reflector and Critical reflector. To examine the effect of time and clinical experience on depth of reflection category a logistic regression model for ordered categories was run with the fixed effects of time (T1-T4), and professional year (first, second and final) in comparison to the threshold coefficients (Model 1 Table 3.7). The threshold coefficients are the estimated thresholds for first professional year participant T1 depth categories. Table 3.7 Model 1 indicates there was a statistically significant association between increasing time and the probability to develop depth of reflection for final professional year students only ($\beta = .66 (.30)$, $z = 2.22$, $p < .05$).
Figure 3-5 Proportion of participants by professional year demonstrating a category for depth of reflection at that particular time point (time 1–4), with the predicted thresholds between categories (black lines). See Table 1 for a definition of each depth category.

Table 3-7 Coefficients of the mixed effects model for depth of written reflection with the fixed effects of time and professional year in comparison to the first professional year (Threshold coefficients).

| Model | Threshold coefficients & fixed effects | Estimate | Std. Error | Z    | Pr(>|z|) |
|-------|---------------------------------------|----------|------------|------|---------|
| Model 1 | Threshold coefficients: | | | | |
|       | Non-Reflector| Emerging-Reflector | -2.73 | 0.42 | -6.52 | | |
|       | Emerging-Reflector| Reflector | -0.78 | 0.35 | -2.19 | | |
|       | Reflector| Critical-Reflector | 2.15 | 0.40 | 5.44 | | |
|       | Fixed effects: | | | | |
|       | Second professional year | | | | |
|       | Final professional year | | | | |
|       | Time (T1-T4) | | | | |
|       | Second professional year student development over time compared to first professional year students | | | | |
|       | Final year student development over time compared to first professional year students | | | | |

<p>| | | | | |</p>
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</table>
3.5.2 Determining a relationship between WRP and clinical competency

To determine a relationship between WRP and clinical competency, depth of reflection data from SLP student participants in time 2 and time 4 were extracted and compared to the COMPASS® clinical competency data (ZOC) at the same time points. Table 3-8 presents SLP student participants by professional year group for whom both depth of reflection category and ZOC was available for time 2 (43 students) and 4 (50 students). This excluded ZOC data for time 2 for first professional year students as no COMPASS® data was collected for this group as part of usual practice. Participant attrition is seen over time. It can be seen that over time as a group, students in the second professional and final year groups demonstrate increasing ZOC median.

*Table 3-8 Number (percentage) of participants in each zone of competency (ZOC) by professional year group and timepoint (time two (T2) and time four (T4))*

<table>
<thead>
<tr>
<th>ZOC</th>
<th>First professional year (T4)</th>
<th>Second professional year (T2)</th>
<th>Second professional year (T4)</th>
<th>Final professional year (T2)</th>
<th>Final professional year (T4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6 (35.3)</td>
<td>3 (12.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>11 (64.7)</td>
<td>14 (58.3)</td>
<td>6 (28.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>5 (20.8)</td>
<td>11 (52.4)</td>
<td>3 (15.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2 (8.3)</td>
<td>4 (19)</td>
<td>7 (36.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>5 (26.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td>4 (21.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>12 (100)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** * p = 0.05
Figure 3-6 illustrates all SLP students by professional year group, their category for depth of reflection and their ZOC as taken from the COMPASS® instrument (time 2 and time 4). To examine a relationship between depth category and ZOC visual inspection of figure 3-6 was first completed and indicated that there was no association between WRP and ZOC as time and clinical experience increased. Students judged as having higher depth of WRP categories (e.g. Emerging-critical-reflector or Critical reflector) did not have a higher ZOC. A second logistic regression model for ordered categories was run with the fixed effects of time (Model 2 Table 3-7). Model 2 confirmed no significant effect can be found between change in depth category and ZOC as time and clinical experience (across or within professional year group) increased. An explanation for this finding is that both year and ZOC share the effect. Figure 2 instead suggested that professional year and ZOC could be intertwined, in that, it was not clear if SLP student year of experience predicted ZOC or ZOC predicts SLP professional year.
Figure 3-6 Number of participants by professional year group that demonstrated a category for depth of reflection at that particular time point (T2/end of semester 1 or T4/end of semester 2) and their zone of competency (1-7). See Table 3-6 for a definition of depth categories.
3.6 DISCUSSION

The purposes of this study were to: (1) examine the impact of time on depth of WRP for SLP students across and within each year group (first, second and final) of the SLP the clinical program; and (2). Determine whether a relationship exists between depth of WRP and level of clinical competency of SLP students. The results indicated that the majority of SLP students fell into the depth category of Reflector. Category of depth of reflection increased as clinical experience increased for final professional year SLP students. First and second professional year SLP students were variable in their demonstration of depth of WRP across and within the clinical program. No relationship was indicated for depth of WRP and clinical competency across and within the clinical program. The findings are discussed with implications for clinical education, limitations and future research.

3.6.1 Depth of written reflective practice as clinical experience increases

This study found that at any one point in time the majority of SLP students in the study were categorized as Reflectors for depth of WRP. This finding is consistent with past studies of SLP and Physical therapy students’ depth of WRP category (Cook et al., 2019; Hill et al., 2012; Plack et al., 2005). While this finding highlights similarities across SLP student groups, it may in fact be related to similar guiding questions being employed for SLP students regardless of professional year group. It may be that, as raised in Chapter 2, the tailoring of guiding questions for WRP to specific professional year groups rather than placement type yields a different outcome (See Appendix B and C for details of RP program of learning and RP guiding questions utilised as part of the current study). Better tailoring of guiding questions, such as increasing the number of questions tailored to breadth elements described as higher-level RP elements (e.g. Reflection-in-action, Re-evaluate, Content and Premise) may be useful to offer additional opportunities for observable behaviours of “critical
reflectors” or “reflective practitioners”. These terms are included in descriptions of requirement for entry to the SLP profession and as such, have contributed to the use of RP activities in clinical programs (Standards of Proficiency for Speech and Language Therapists, 2013; Speech Pathology Australia, 2020). Examination of guiding questions employed for WRP warrants systematic examination in the future.

Over time, final year SLP students significantly enhanced their depth of WRP category. In comparison, the two professional year groups with less clinical experience (first and second) did not. The finding for final year students, produced similar results to Plack et al.,’s (2005) depth of WRP results for a one-off examination of final year physical therapy students. The current study then extends Plack et al.,’s (2005) findings by identifying significant positive change over time for final professional year SLP students’ depth of WRP. Furthermore, this finding complements Chapter 2, where as a group, final professional year students demonstrated a higher proportion of higher-level RP breadth elements (“re-evaluate”, “content”, “premise”, “reflection-in-action”) compared to first and second professional year students. One reason for this finding, may relate to the combination of RP activities, feedback and teaching that is part of usual clinical practice for the SLP students in the candidate’s clinical program (see Appendix B). It may be that students in the final professional year, were better able to use their extra knowledge about RP, as well as the feedback provided by CEs about their RP process, as a self-directed learning tool (Dunne et al., 2019). These students appear similar to the “steady growth” SLP student group identified by Dunne (2019). In that, these students might have been able to use both their knowledge and the feedback for future reflections more readily than first and second professional year students. Extending on this, as part of their clinical placement experience, students in the final professional year may have been exposed to and able to reflect on more complex clinical situations compared to first and second professional year students. Complex clinical
situations have also been described as a catalyst for RP (Mann et al., 2009). Finally, this significant finding may highlight final professional year students’ progression towards workplace readiness and demonstration of life-long learning practices, where they continue to engage in learning and personal development activities such as RP, beyond formal education settings.

First and second professional year SLP students were more variable in their depth category over time. This finding is in keeping with descriptions of variability for reports of clinical competency and another mixed methods investigation into WRP for SLP students, for the second professional year SLP students (Dunne et al., 2019; McAllister 2013b). However, it was unexpected for first professional year students. These findings instead may mirror Dunne’s (2019) suggestion of three trajectories for SLP students engaged in WRP (“steady growth”, “downward trend” and “no clear change”). While not significant, the proportion of second professional year students in higher depth categories reduced over time, and could be described as being similar to the “downward trend” group (Dunne et al., 2019). Similarly, the first professional year students in the current study match the group description for “no clear change” in WRP over time (Dunne et al., 2019). One reason for these unexpected findings for both groups of students again likely relates to the focus on usual practice for this study. Usual practice meant the clinical placements were varied. Placements varied by population (e.g. adult, child or mixed), environment (e.g. school, hospital or private practice settings), and time (e.g. part time placement and block placement). This finding may indicate that while in the earlier stages of the clinical program, the consistency of clinical placement, allows students to better demonstrate higher depth of RP. This is suggested following examination of earlier studies of SLP students WRP abilities in the first and second professional year that both used a consistent clinical placement experience (Cook et al., 2019; Hill et al., 2012). SLP students demonstrated increasing depth of WRP skill over a shorter period of time with a
consistent clinical placement experience (Cook et al., 2019). Consistency of clinical placement may allow students to: (1) build on repeated experiences, (2) receive formative feedback from the same CE, and (3) discuss the impact of the repeated experiences on their learning in WRP. Studies describing simulation activities and strategies for supporting culturally and linguistically diverse SLP students, have identified similar benefits as a result of repeated practice or consistency of clinical placement. The benefits included enhanced clinical skill and confidence for SLP students (Attrill et al., 2015; Becker et al., 2006; Penman et al., 2021).

3.6.2 The relationship between WRP and clinical competency

No association was detected between depth of WRP and clinical competency. Instead, clinical competency appeared to be associated to professional year group. The findings of this study contrast with prior medical and allied health studies that suggested positive relationships with RP and competency, and a positive impact on future clinical practice (Aronson et al., 2012; Caty et al., 2015; Chabeli, 2010; Cook et al., 2019; Halton et al., 2007; Ng et al., 2012b; Plack et al., 2005). This finding may again be due to the RP questions enlisted to guide student WRP. Use of these questions aimed to promote reflective questioning, and all questions were tailored to the breadth instrument elements. However, the questions may in fact be restricting some students or offer limited opportunities to demonstrate higher-level reflective skills and therefore any relationship between WRP and clinical competency (Tillard et al., 2018).

The results of the current study, further reinforce that no one assessment tool (such as an overall measure of WRP skill) can predict clinical competency outcomes. This finding now adds to the body of literature in clinical education where possible relationships between clinical competency and GPA and self-assessment been examined in order to predict future clinical competency, or streamline admissions to clinical programs (Blackman et al., 2007;
Boles, 2018; Chambers, 1993; Gadbury-Amyot et al., 2005; Hardy et al., 2021; Iliff et al., 2021; Middlemas et al., 2001; Stacey & Whittaker, 2005; Troche & Towson, 2018; Wallenstein et al., 2010).

### 3.6.3 Implications for clinical education

The findings of this study serve to further inform the use of WRP as part of a clinical education program of learning for SLP students. Judgements of either depth or breadth of reflection (as seen in chapter 2) continue to keep the focus of the judgement on the process undertaken for RP rather than the content covered in reflection. This practice aims to reduce student report of feeling unsafe and students’ writing what they perceive educators want them to write to gain a high grade (Bourner, 2003; Cook et al., 2019; Dunne et al., 2019; Plack et al., 2005). Specifically, the depth measure for WRP activities may be useful as a one-off assessment or a summative judgement of reflective ability (Plack et al., 2005). Meanwhile, when utilizing WRP for teaching purposes, the combination of breadth and depth of reflection components are useful for teaching students and educators about RP. For example, breadth of WRP elements highlight nine different processes of RP. Educators could model how they engage in RP in the workplace, by choosing one or more of these elements (e.g. reflection-in-action”) and examining their experience through this lens/process (e.g. “In the moment I saw... and so was thinking x and tried y and the result was z”). Next the depth of WRP measure lists the specific combination of breadth elements suggested to make up depth levels. This makes the intended outcomes of engaging in WRP visible for students, and may enhance student’s abilities to achieve higher levels of reflective depth in their writing. Educators could again discuss and model those specific combinations for students in their workplace, to demonstrate the process they undertake in the workplace. Educators need to model engagement in RP to support student skill development and engagement (Dunne et al., 2021; Walsh & Mann, 2015).
While the results of this study suggest that the depth of WRP classification system cannot be used to predict student clinical competency, WRP could instead be used as an example of an observable behaviour to inform COMPASS® ratings, specifically the Professional competency of Learning and the CBOS unit of Lifelong learning and reflective practice. A core requirement of COMPASS® is to only rate observable behaviours, yet, RP is sometimes described as difficult to visualize (McAllister, 2005; McAllister et al., 2013a). WRP is one RP tool that can contribute to judgements of clinical competence by providing observable behaviours (Boud, 1995; Levett-Jones, 2005; Musolino, 2006).

3.6.4 Limitations and future research

A number of limitations and opportunities for future research avenues are apparent as a result of this study. Firstly, the reorganization of depth categories utilizing an “if-then” rule implemented by Cook et al., (2019) requires further examination. This was originally implemented to address length of time taken to judge breadth and depth of reflective practice. The depth judgement utilised here requires assessment of breadth elements only, rather than allowing raters to make their own subjective depth judgement, as was originally intended by Plack et al., (2005). Examination of agreement between the if then rule and inter-rater judgement is a useful next step, if educators want to use the depth categories only, for one-off assessments of RP. Secondly, Cook et al., (2019) created the emerging categories to make the depth instrument more sensitive to SLP students developing RP skills and to map to an academic system of grading (Kember et al., 2008). As part of this, a choice was made to require two higher level elements for the Emerging-critical-reflector category, compared to only one for the Emerging-reflector category. This impact on the current study was that no participants in the current data set were classified as Emerging-critical-reflectors. Therefore, if the goal really is to credit students who are “emerging” in demonstrative of RP abilities then re-examination of the description and criteria of what makes an Emerging-critical-
reflector is recommended. Thirdly, attrition is seen over time in all year groups in the WRP component (100% to 66%), and when matching participants to their COMPASS® competency scores for both time points (50% of possible participants). This was not unexpected, as attrition in repeated measures designs are expected (Pan & Zhan, 2020). However, this may be a source of bias in over interpreting the results (Dumville et al., 2006). Further studies examining RP and clinical competency over time, could follow a longitudinal approach to focus on examining individual participant characteristics in more detail at each time point in data collection (Dumville et al., 2006). In clinical practice however, the attrition rate is a useful reminder to continue to discuss the reasoning behind incorporating RP activities with students to keep them engaged in RP, and to consider varying RP activities across the academic year (see Appendix B for a sample of RP activities utilised at the author’s university). Finally, further systematic examination of other clinical education activities regularly employed in clinical education programs, such as the impact of feedback on RP and competency development, can continue to enhance the scholarship of teaching and learning surrounding SLP clinical education programs.
3.7 CONCLUSION

This study found a positive association with time for demonstration of depth of WRP skills for final year SLP students. First and second professional year students were variable in their demonstration of depth of WRP across time within an academic year. No relationship was seen between depth of WRP and clinical competency across the degree program. Examination of student depth of WRP maybe useful as a one-off judgement of reflective skill to continue to place the focus of grading on the process undertaken rather than the content of WRP activities. Additionally, judgements of depth of WRP may be useful as an analysis that can contribute to judgements made about student RP abilities as part of the COMPASS® assessment tool and other clinical competency tools.

The results of the studies described in chapters two and three highlight two assessment techniques that can be employed when examining WRP for SLP students. Both studies indicate that RP activities such as WRP add opportunities to make RP visible for students, provide judgements of reflective skill, offer educators opportunities teach students about RP and provide additional opportunities for students to examine a clinical interaction and/or demonstrate their reasoning skills. However, as is recommended in adult learning literature, the student voice should also be sought as part of teaching and learning practices (Brookfield, 1986). The knowledge gained from students can support educators to design learning tasks, that are relevant to the SLP profession and tailored to the students’ needs and ability levels. Therefore, chapter four aimed to examine SLP perceptions of RP as clinical experience increased.
CHAPTER FOUR: EXAMINING SLP STUDENT PERCEPTIONS OF REFLECTIVE PRACTICE. HOW DO STUDENTS COMPARE ON THE REFLECTIVE PRACTICE QUESTIONNAIRE?
4.2 ABSTRACT

Background: Reflective practice (RP) and RP activities (e.g. written reflections, RP groups, reflection with a clinical supervisor and dialogic teaching) are tools regularly employed as part of clinical education programs for SLP. Studies examining SLP student perception of RP, suggest that in general RP activities are valued and students report learning as a result of participating in RP activities (Dunne et al., 2019; Tillard et al., 2018). However, it is not known whether perceptions of RP activities change as clinical placement experience increases. The perceived impact of RP activities on outcomes such as: confidence; communication; job satisfaction; stress; uncertainty; and desire for improvement also has not been examined.

Aims: 1. To determine perceptions of RP capacity and outcomes of engaging in RP in three groups of SLP students (following their second, fourth or sixth clinical placement experience) utilizing a validated and reliable instrument. 2. To examine patterns of perceptions of RP capacity and outcomes of engaging in RP across SLP students utilizing Hierarchical clustering (Manhattan distance).

Method: 70 SLP students completed The Reflective Practice Questionnaire (RPQ) (Priddis & Rogers, 2018; Rogers et al., 2019) following their second, fourth or sixth clinical placement experience.

Results: Regardless of clinical placement experience, the majority of SLP students perceived they had high levels of reflective capacity. In general, as SLP student clinical placement experience increased so did their perception of their RP abilities and subscales associated with outcomes of engaging in RP. A significant positive effect for three subscales of the RPQ (communication confidence, confidence general and job satisfaction) was found as clinical placement experience increased. Three groupings were identified as a result of Hierarchical clustering (reflective and confident group, non-reflective group and a low confidence group).
Conclusions: This study provides quantitative data to support the teaching of and use of RP activities with students across clinical programs, and suggests that students who are purposely taught and exposed to RP, perceive engaging in RP activities had a positive impact on their learning in the SLP clinical program.
Engaging SLP students in RP activities within clinical programs is thought to provide opportunities for students to both demonstrate and develop their clinical reasoning and decision-making skills. RP activities also contribute to the development of professional autonomy, and provide a means for connecting theory to clinical practice (Cook et al., 2019; Hill et al., 2012; Plack et al., 2005). Furthermore, RP is described as an essential skill and included in minimum standards set for graduates and practicing SLP clinicians by Speech Pathology Australia (SPA), as part of the Professional Standards for Speech Pathologists in Australia (Speech Pathology Australia, 2020) and the Standards of Proficiency for SLP practicing in the United Kingdom (Standards of Proficiency for Speech and Language Therapists, 2013). Beyond the requirement to demonstrate RP as a practicing clinician, the benefits of engaging in RP for both clinician and patient are well documented, and include: enhancing patient centred care; job satisfaction; supporting change and reducing burnout (Armstrong et al., 2017; Caty et al., 2016a, 2016b; Clouder, 2000; Mamede et al., 2008; Sherwood et al., 2018; Smith & Pilling, 2007; Thomas & Isobel, 2019; Walpola & Lucas, 2021; Ziebart & Macdermid, 2019).

Knowing this, the challenge for educators then, is how to teach, engage and evaluate RP in clinical programs in an efficient way, while also promoting ongoing engagement in RP activities when students become graduates and enter the workplace. Examining student experiences of RP activities is one-way educators have looked to motivate students, inform teaching and evaluate outcomes of engaging in RP activities (Barbagallo, 2021).

4.3.1 Student perspectives of RP in clinical programs

On examination of student perspectives of RP in clinical programs, students described a number of benefits, some of which mirror the voices of allied health, medical and nursing
clinicians in the workplace. The benefits include: valuing RP activities as a memory aid; a place to receive feedback; a form of self-care; and an opportunity for peer learning to occur (Alsalamah et al., 2022; Barbagallo, 2021; Er et al., 2019; Lim & Low, 2008a, 2008b). Further benefits reported were viewing RP activities as an avenue to develop and demonstrate critical thinking, reasoning and evidence-based practice skills (Alsalamah et al., 2022; Barbagallo, 2021; Korucu Kis & Kartal, 2019; Langley & Brown, 2010; Lim & Low, 2008a, 2008b; Roche & Coote, 2008). Students have also identified development of personal and professional behaviours as a result of RP activities. Behaviours described were: confidence; the ability to identify barriers, enablers and emotions; and developing positive emotions, that were in turn, perceived to maximize the quality of care for patients (Alsalamah et al., 2022; Barbagallo, 2021; Brumfitt & Freeman, 2007; Er et al., 2019; Karimi et al., 2017; Korucu Kis & Kartal, 2019; Langley & Brown, 2010; Lim & Low, 2008b, 2008a; Roche & Coote, 2008).

Alternatively, allied health, education and nursing students have reported a number of common negative views surrounding RP. Firstly, that engaging in RP activities required a large amount of time. Secondly, students described a fear of writing something “bad” or a lack of knowledge of the “rules” for RP. Thirdly, that a good relationship between the student and educator was necessary for engaging in RP activities, given that sometimes vulnerability was required in order to be open and honest in reflective activities (Embo et al., 2014; Harris, 2005; Korucu Kis & Kartal, 2019; Langley & Brown, 2010; Lim & Low, 2008b, 2008a; Roche & Coote, 2008).

4.3.2 SLP student perspectives of RP over time

Two important studies examining SLP student perspective of RP activities, and perceived learning and development as clinical experience increased have been completed. The first study examined SLP student (n = 24) perception of learning as a result of engaging in a novel or a standard RP group format (Tillard et al., 2018). Regardless of group format,
SLP students identified that RP groups were a positive addition to their learning, critical thinking and clinical practice. Students perceived that the RP group format provided a peer learning opportunity and was not time consuming. No significant differences were found between groups and perceptions remained positive and stable over the six-week period. The RP group sessions were 50 minutes per week involving five to six students and a clinical educator as the facilitator. RP groups involved group discussion of articles related to clinical issues and either a group discuss of clinical experiences (standard format) or structured activities and guiding questions to support discussion of clinical experiences (novel format). The lack of perceived growth of RP skill by students may have been as a result of the short 6-week time period, a lack of experience evaluating their own skill development, or the specificity and sensitivity of the questionnaire (Tillard et al., 2018).

The second study by Dunne et al. (2019), indicated SLP students needed to understand the value of RP and internalize RP in order to perceive benefit and learning from RP activities, with a focus on written RP. In contrast to Tillard et al. (2018), these SLP students perceived their engagement was influenced by the mode of RP and time to engage in RP (Dunne et al., 2019). The methods of data collection for this study also differed from that of Tillard et al., (2018) examining both SLP student written reflections and conducting focus group interviews (n = 6 SLP students).

Both studies investigating SLP student perception of RP found that most students perceive they gain some benefit from RP activities. The studies also indicated variable responses concerning barriers of time and modality of RP (Dunne et al., 2019; Tillard et al., 2018). Both of these studies focused on a single cohort of students over a brief period of time (6-10 weeks), restricted students to one modality of RP (group or written), had limited participants or utilised a fit-for-purpose questionnaire and focused largely on the value of and perception of learning as a result of engaging of RP activities (Dunne et al., 2019; Tillard et
al., 2018). Examination of SLP student perspectives of RP and how students utilise RP in interactions with clients at differing time points in the clinical program and without imposing a restriction of RP activity, may contribute to further understanding of the development of RP skill across SLP degree programs. In turn, this may better support educators and tailoring of RP activities. Furthermore, this examination may identify SLP students who are struggling or may perceive their RP skills are not supporting their clinical skill development (Hager & Hodkinson, 2009; Roca et al., 2020).

4.3.3 Methods employed to examine student perceptions of RP

A review of the research methods surrounding examination and assessment of student perceptions of RP in the allied health, nursing and medical fields reveals that four data collection methods are regularly utilised: questionnaires; written reflection analysis; focus groups; and interviews (Barbagallo, 2021; Er et al., 2019; Harris, 2005; Heidari & Galvin, 2003; Lim & Low, 2008b, 2008a; Ng et al., 2012a; Roche & Coote, 2008; Tillard et al., 2018). Common RP models have also served as foundations for RP questionnaires. Ooi et al., (2021) indicated that questionnaires were typically based on an identified RP model such as Mezirow’s reflective thinking framework, (Mezirow, 1991), Schön’s model of reflective practice (Schön 1983;1987), or Kolb’s experiential learning cycle (1984). The questionnaires explored the following common areas: engagement in RP (e.g. (Priddis & Rogers, 2018; Rogers et al., 2019); value of RP (Priddis & Rogers, 2018; Rogers et al., 2019); and perception of learning as a result of engaging in RP (Aukes et al., 2007; Tillard et al., 2018). Specific to research methods examining SLP student perspectives of RP, customised questionnaires (e.g. Schaub-de Jong et al., 2011; Tillard et al., 2018) and focus group interviews (Dunne et al., 2019) have been utilised.

For this study with SLP students, the Reflective Practice Questionnaire (RPQ) (Priddis & Rogers, 2018) was selected. The RPQ has acceptable validity and reliability measures and
allows comparison of RP perspectives of medical and nursing students and mental health professionals (Gustafsson et al., 2021; Priddis & Rogers, 2018; Rogers et al., 2019). The RPQ is unique in that it moves beyond simply seeking student perspectives of RP, and examines reflective capacity. Reflective capacity is defined as “… the ability, desire, and tendency of students to engage in reflective thought during their academic studies and clinical practices.” (Rogers et al., 2019). The Reflective Capacity (RC) subscale of the RPQ has been found to have satisfactory validity and reliability, following translation to Swedish, indicating potential for this questionnaire to be utilised in differing cultural settings (Gustafsson et al., 2021). In its entirety, the 40-item RPQ aims to examine student perception of their reflective capacity in situations where interactions with clients occur. The statements utilised in the RPQ places a focus on how students perceive RP can impact their clinical interactions. This is a further point of difference for the RPQ compared to other studies examining perception of RP for SLP students. Additionally, the RPQ allows for associations between RP capacity and the six subscales (confidence, communication, uncertainty, stress, desire for improvement and job satisfaction). The subscales examine areas that RP activities are thought to impact in a positive way (Rogers et al., 2019). Outcomes from recent studies suggested that the combination of RP capacity subscale, and the six sub-scales result in an ability to identify and support students by addressing areas such as resilience, anxiety, over confidence or dissatisfaction during their university career (Priddis & Rogers, 2018; Rogers et al., 2019). Such areas may also be relevant to SLP programs.

In summary, student perception of RP and perceived capacity for RP is important for engagement in tailoring support for students, learning, course improvements, evidenced based practice and validation of the student voice (Dunne et al., 2019; Hager & Hodkinson, 2009; Roca et al., 2020; Rogers et al., 2019; Tillard et al., 2018; Wilson, 2012). Engagement in RP activities as part of clinical education programs aims to support students to enhance
their RP skills, and transfer these skills to the workplace where the benefits of ongoing RP have been documented for both the clinician and the patient (Armstrong et al., 2017; Caty et al., 2016a, 2016b; Clouder, 2000; Mamede et al., 2008; Sherwood et al., 2018; Smith & Pilling, 2007; Thomas & Isobel, 2019; Walpola & Lucas, 2021; Ziebart & Macdermid, 2019). Finally, given engagement in RP activities are a common and core component of SLP training programs and graduate outcomes, investigation of student perspectives of RP using a consistent and validated tool, such as the RPQ, with its unique focus on RP in clinical interactions, would allow for comparisons across SLP student groups, benchmarking across clinical programs, and comparisons to other health professional and teaching clinical programs. The addition of such examination aims to complement assessment of RP in clinical programs and investigations into clinical competency while offering another tool to identify and support struggling or at-risk students (Hager & Hodkinson, 2009; Roca et al., 2020; Sheepway et al., 2014).

Therefore, this study aimed to:

1. Determine perceptions of RP capacity and outcomes of engaging in RP in three groups of SLP students (following their second, fourth or sixth clinical placement), utilizing a validated and reliable instrument;
2. Examine patterns of perceptions of RP capacity and outcomes of engaging in RP across SLP students utilizing Hierarchical clustering (Manhattan distance).

Hypotheses:

1. Students with more clinical placement experience will rate themselves higher on the RPQ subscales of RP capacity, confidence and job satisfaction than students with less clinical placement experience.
2. Students with the least clinical placement experience will rate themselves higher on the RPQ subscales of uncertainty, stress and desire for improvement than students with more clinical placement experience.

3. Student patterns of perceptions of RP capacity and their outcomes of engaging in RP (the six subscales) will be similar patterns to that of medical students (Rogers et al., 2019).
This study received ethical approval from the Educational Research Human Ethics Committee of the University of Canterbury, New Zealand. All participants provided written consent to participate.

4.4.1 Context of the study

Similar to Chapter two and three, this study was conducted as part of a clinical program for SLP students (See Chapter two, section 2.4.1 for detailed study context and Appendix B, for description of the clinical education program of learning for reflective practice). However, unlike the studies described in chapter two and three, the current study focused on students in both the bachelor and master’s degree programs\(^2\). All clinical placements for both programs were categorised as either “Early” “Middle” or “Late” placements according to the COMPASS® technical manual and the clinical program’s assessment documentation (McAllister et al., 2013b).

4.4.2 Research design

A questionnaire study design was chosen for the ability to provide insights into SLP student perception and attitudes related to RP and outcomes of engaging in RP at three stages of the SLP clinical program (Schiavetti & Metz, 2002). This allowed for the examination of perception of SLP RP capacity and related subscales at three points in time across the clinical programs via the RPQ (Priddis et al., 2018; Rogers et. al, 2019). Furthermore, the three timepoints chosen allowed for preliminary exploration as to how the RPQ could be utilised based on differing amounts of clinical placement experience.

\(^2\) Inclusion of both Bachelor and Master’s level SLP students in this manner has been reported in a number of publications (Hill et al., 2021; Penman et al., 2021; Tillard et al., 2018).
4.4.3 Participants

70 students enrolled in clinical papers as part of the Bachelor of Speech-Language Pathology honours program and the Master of Speech-Language Pathology program participated in the study. At time of data collection, the students had recently completed their second, fourth or sixth clinical placement experience (of six across the course of either degree), described hereafter as a “novice placement group”, “intermediate placement group”, or “entry level placement group” according to COMPASS® behavioural descriptors and the clinical program’s assessment documentation (McAllister et al., 2013b). No students involved in the study were naïve to RP.

4.4.3 Instrument

The Reflective Practice Questionnaire (RPQ) is a validated and reliable instrument containing seven subscales and a total of forty questions. This instrument was selected as it enabled comparison of findings of SLP students with medical and nursing students and mental health professionals (Gustafsson et al., 2021; Priddis & Rogers, 2018; Rogers et al., 2019). The RPQ provided an opportunity to examine student perceptions of RP and student perceptions of clinical and professional skill development as a result of engagement in RP (Priddis & Rogers, 2018; Rogers et al., 2019). The first subscale for reflective capacity aimed to “assess core aspects of a reflective practitioner” and is in keeping with the work of Schön (1987; 1983) discussed in chapter 1 and 2 (p 93 Priddis et al., 2018; Rogers et al., 2019). The Reflective Capacity (RC) subscale was made up of four parts that examined commonly discussed components of RP (Reflective-in-action, Reflective-on-action, Reflective with others and Self- appraisal). The reflective capacity subscale comprised of 16 items, with 4 items per component. The RPQ included six additional subscales (four items per subscale) that were attributed to the outcomes of engaging in RP including: development (subscale: Desire for improvement), the potential benefits of reflective supervision (subscale:
Confidence (general), Confidence (communication) and Job satisfaction) and the potential outcomes associated with low quality reflective supervision (subscales: Uncertainty and Stress interacting with clients) (Priddis & Rogers, 2018; Rogers et al., 2019). For each item, a six-point response scale was used; (1) Not at all, (2) Slightly, (3) Somewhat, (4) Moderately, (5) Very much, (6) Extremely. For example, “Reflective-on-action” After interacting with clients I spend time thinking about what was said and done; (1) Not at all, (2) Slightly, (3) Somewhat, (4) Moderately, (5) Very much, (6) Extremely. For further reading on the development, validation, statistical properties of the RPQ see Priddis et al., (2018) and Rogers et al., (2019) For the full questionnaire see Appendix D.

4.4.4 Procedure

The study was conducted in the context of usual practice for SLP students enrolled in a clinical course. Each course included a clinical placement component that was conducted under the guidance of a qualified SLP. Consistent with usual practice, students in clinical course two (novice placement grouping) and four (intermediate placement grouping) completed part time placements over a twelve-week period. Students in clinical course six (entry level placement grouping) had recently completed both a part-time and a block placement over an eighteen-week period. Following completion of clinical course six, students had completed their clinical requirements for the degree and were eligible to graduate and enter the SLP profession.

At the completion of clinical requirements for the clinical course, all students (from here on in known as participants) were emailed a secure URL link to invite them to complete the RPQ. The RPQ was presented in an online format using Qualtrics Survey Software, which allowed for standardization of the response scale, order randomization, and ability to access...
questionnaire via computer or mobile device (Priddis & Rogers, 2018; Rogers et al., 2019). The RPQ was formatted to require responses from all questions in order to progress onto the following question, therefore participants were unable to submit the questionnaire without responding to all items. All participants were sent one reminder to participate in the study. This occurred two weeks after the initial invitation.

The output of the RPQ was generated using Qualtrics software (Qualtrics, 2021). This allowed reverse scoring, means and statistical analysis to be carried out for individual participants (Qualtrics, 2021).

4.4.5 Statistical analysis

Descriptive statistics were used to report the average scores for the RPQ sub-scales. The data analysis was carried out in the statistical software environment R (R Core Team, 2015). To examine the effect of placement grouping on student perception of RP a series of one-way ANOVAs were run to compare the RPQ sub-scales across groups. To examine patterns of perception of RP across participants, regardless of placement grouping, the distance between each participant’s RPQ scores was explored by hierarchical cluster analysis. This utilised the Manhattan distance (Suzuki & Shimodaira, 2006). In keeping with hierarchical cluster analysis process, examination of the dendrogram output was completed to identify the number of clusters or patterns (Exploratory Data Analysis with R, n.d.). Once the patterns were identified, the participants were reorganised under the clusters and descriptive statistics were used to report the average scores for the RPQ sub-scales for each cluster.
Seventy participants completed the questionnaire. Table 4-10 describes participants who agreed to participate in the study by student placement grouping. The majority were female with an average age was 23 years. The Entry level grouping had the least number of participants (n = 12).

<table>
<thead>
<tr>
<th>Student placement grouping</th>
<th>Placement number (of 6)</th>
<th>Number of participants</th>
<th>Average age (SD)</th>
<th>Age range</th>
<th>Male/ Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novice</td>
<td>2</td>
<td>32</td>
<td>24 (6.16)</td>
<td>19-49</td>
<td>2 Males/ 30 Females</td>
</tr>
<tr>
<td>Intermediate</td>
<td>4</td>
<td>26</td>
<td>22 (4.96)</td>
<td>20-25</td>
<td>2 Males/ 24 Females</td>
</tr>
<tr>
<td>Entry level</td>
<td>6</td>
<td>12</td>
<td>27 (8.67)</td>
<td>21-49</td>
<td>0 Males/ 12 Females</td>
</tr>
<tr>
<td>Total</td>
<td>N/A</td>
<td>70</td>
<td>23 (6.52)</td>
<td>19-49</td>
<td>4 Males/ 66 Females</td>
</tr>
</tbody>
</table>

**4.5.1 Examination of student perceptions of RP and related characteristics across the clinical program**

Table 4-11 presents the mean scores (averages of the subscale items) of the RPQ for each of the seven subscales, organised by the three placement groupings (Novice, Intermediate, Entry level placement), whereby the maximum score is 6. Table 4-11 indicates that students in the novice placement grouping indicated the most desire to improve. In general, as clinical experience increased so did student perception of their Reflective Capacity (RC) and related subscales, with the exception of Desire for Improvement (DfI) which decreased as clinical experience increased. Regardless of clinical experience students perceived similar levels of stress interacting with patients (SIP).
### Table 4-10 Mean RPQ subscale scores for SLP students by clinical placement grouping

<table>
<thead>
<tr>
<th>Sub-scale</th>
<th>Novice level</th>
<th>Intermediate level</th>
<th>Entry level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflective capacity (RC)</td>
<td>4.52 (0.47)</td>
<td>4.53 (1.10)</td>
<td>4.63 (0.40)</td>
</tr>
<tr>
<td>Desire for improvement (DfI)</td>
<td>5.59 (0.49)</td>
<td>5.26 (0.58)</td>
<td>5.02 (0.68)</td>
</tr>
<tr>
<td>Confidence – general (CG)</td>
<td>2.46 (0.93)</td>
<td>3.06 (0.94)</td>
<td>3.71 (1.01)</td>
</tr>
<tr>
<td>Confidence – communication (CC)</td>
<td>4.20 (0.52)</td>
<td>4.43 (0.60)</td>
<td>4.81 (0.48)</td>
</tr>
<tr>
<td>Uncertainty (Unc)</td>
<td>3.97 (0.80)</td>
<td>3.49 (0.81)</td>
<td>3.46 (0.91)</td>
</tr>
<tr>
<td>Stress interacting with patients (SiP)</td>
<td>3.43 (0.81)</td>
<td>3.18 (0.72)</td>
<td>3.48 (1.17)</td>
</tr>
<tr>
<td>Job satisfaction (JS)</td>
<td>4.33 (0.29)</td>
<td>4.39 (0.37)</td>
<td>4.66 (0.47)</td>
</tr>
</tbody>
</table>

Standard deviations are provided in ( ) brackets.

To evaluate the effect of placement grouping on the perception of the various subscales, a linear model was utilised and seven simultaneous ANOVA without any covariates were run, one for each subscale from the RPQ. Output of the final statistical model is shown in table 4-11. There was a significant positive effect of placement group for three subscales as clinical experience increased, communication confidence (CC), confidence general (CG) and job satisfaction (JS) (CC: $\beta = -0.61 (.18), t = -3.40, p < .05$; CG: $\beta = -1.25 (.32), t = -3.88, p < .001$; JS: $\beta = -0.34 (.12), t = -2.81, p = .01$). There was a significant negative effect of placement group as clinical experience increased for desire for improvement (DfI) (DfI: $\beta = 0.57 (.19), t = 3.00, p <0.1$) which was unexpected. Positive trends as clinical experience increased were seen for uncertainty (UNC) and reflective capacity (RC).

### Table 4-11 Coefficients of seven simultaneous tests for General Linear Hypothesis (ANOVA), one for each subscale from the RPQ.

<p>| Model       | Fixed Effects                | Estimate | Std. Error | t value | Pr (&gt;|t|) |
|-------------|------------------------------|----------|------------|---------|----------|
| Model 1: RC | Intermediate vs. Entry Level Students | -0.10    | 0.18       | -0.56   | 1        |</p>
<table>
<thead>
<tr>
<th>Model</th>
<th>Novice vs Entry Level Students</th>
<th>Novice vs Intermediate Level Students</th>
<th>Novice vs Intermediate Level Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>2: DFL</td>
<td>0.24 0.19 1.23 0.95</td>
<td>0.57 0.19 3.00 0.06 .</td>
<td>0.33 0.13 2.60 0.16</td>
</tr>
<tr>
<td>3: CG</td>
<td>-0.65 0.33 -1.96 0.51</td>
<td>-1.25 0.32 -3.88 0.00 **</td>
<td>-0.60 0.24 -2.47 0.21</td>
</tr>
<tr>
<td>4: CC</td>
<td>-0.38 0.18 -2.06 0.45</td>
<td>-0.61 0.18 -3.40 0.02 *</td>
<td>-0.23 0.15 -1.49 0.84</td>
</tr>
<tr>
<td>5: UNC</td>
<td>0.03 0.29 0.11 1.00</td>
<td>0.51 0.28 1.83 0.61</td>
<td>0.48 0.20 2.34 0.27</td>
</tr>
<tr>
<td>6: SIP</td>
<td>-0.30 0.30 -1.00 0.99</td>
<td>-0.05 0.29 -0.17 1.00</td>
<td></td>
</tr>
</tbody>
</table>
### Table 4.3

<table>
<thead>
<tr>
<th>Model 7: JS</th>
<th>Intermediate vs. Entry Level Students</th>
<th>Novice vs Entry Level Students</th>
<th>Novice vs Intermediate Level students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.25</td>
<td>-0.27</td>
<td>-0.07</td>
</tr>
<tr>
<td></td>
<td>0.17</td>
<td>0.12</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>1.50</td>
<td>-2.19</td>
<td>-0.89</td>
</tr>
<tr>
<td></td>
<td>0.83</td>
<td>0.36</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Sub-scale: RC = Reflective capacity, Dfl = Desire for improvement, CG = Confidence - general, CC = Confidence - communication, UNC = Uncertainty, SIP = Stress interacting with patients, JS = Job satisfaction.

Significant codes: 0 ‘****’ 0.001 ‘***’ 0.01 ‘**’ 0.05 ‘.’ 0.1. (Adjusted p values reported -- single-step method).

#### 4.5.2 Examination of patterns of perceptions of RP capacity and outcomes of engaging in RP

Next, hierarchical clustering (Manhattan distance) was used to estimate the correlation between the participant scores. This analysis was undertaken to examine patterns of student perceptions of RP across student groupings and regardless of clinical experience. As a result of the analysis three distinct groupings were determined to be the best groupings for the data. The groupings were named following inspection of each participant’s RPQ scores and represent the most prominent features identified. Figure 4-7 illustrates the groupings (Group 1 = Reflective and confident group, Group 2 = Non-reflective group, Group 3 = Low confidence group). Table 4-13 presents the mean scores of participants in the three groupings including experience level the groupings and number of participants per group. Group 1 had one novice level student and the least number of students (10%). Students in Group 1 (Reflective and confident group) were described as such due to on average presenting as the most reflective (and more reflective in comparison to the overall statistics reported in table...
2), most satisfied, most confident yet also perceived the most stress when interacting with patients. Students in Group 2 (30%) (Non-reflective group) were on average the least reflective (and least reflective in comparison to the overall statistics reported in table 2), had the least desire to improve their practice, yet perceived they were the most certain and perceived the least stress when interacting with patients. Group 3 had the greatest number of students (60%) including the greatest number of novice level students (n=25) and three entry level students. Students in Group 3 (Low confidence group) perceived the greatest desire to improve their practice however as a group were the most uncertain and least confident in general and when communicating with others.

Figure 4-7 Hierarchical clustering (Manhattan distance) estimating participant the correlation between participant scores regardless of clinical placement (x axis numbering of 1-70 indicates one branch per student. The blue lines represent the best groupings of patterns for these data
Table 4-12 Mean RPQ scores and clinical placement experience of SLP students by hierarchical clustering grouping

<table>
<thead>
<tr>
<th></th>
<th>Group 1 Reflective and confident group (n=7)</th>
<th>Group 2 Non-reflective group (n=20)</th>
<th>Group 3 Low confidence group (n=43)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical placement experience of SLP students</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Novice</td>
<td>1</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>Intermediate</td>
<td>3</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>Entry level</td>
<td>3</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td><strong>Subscales of the RPQ</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflective capacity (RC)</td>
<td>5.23 (0.40)</td>
<td>4.40 (0.51)</td>
<td>4.50 (0.42)</td>
</tr>
<tr>
<td>R = 4.56–5.75</td>
<td>R = 3.18-5</td>
<td>R = 3.75-5.12</td>
<td></td>
</tr>
<tr>
<td>5.50 (0.46)</td>
<td>4.94 (0.61)</td>
<td>5.55 (0.49)</td>
<td></td>
</tr>
<tr>
<td>Desire for improvement (DfI)</td>
<td>R = 4.75- 6</td>
<td>R =3.5-5.75</td>
<td>R =4.25 - 6</td>
</tr>
<tr>
<td>4.39 (0.61)</td>
<td>3.51 (0.84)</td>
<td>2.37 (0.76)</td>
<td></td>
</tr>
<tr>
<td>Confidence – general (CG)</td>
<td>R = 4.66-7</td>
<td>R = 2-4.75</td>
<td>R = 1-3.5</td>
</tr>
<tr>
<td>5.32 (0.40)</td>
<td>4.46 (0.55)</td>
<td>4.21 (0.43)</td>
<td></td>
</tr>
<tr>
<td>Confidence – communication (CC)</td>
<td>R =4.75-5.75</td>
<td>R =3.25-5.25</td>
<td>R =3 - 5</td>
</tr>
<tr>
<td>3.75 (1.30)</td>
<td>3.33 (0.70)</td>
<td>3.97 (0.80)</td>
<td></td>
</tr>
<tr>
<td>Uncertainty (Unc)</td>
<td>R = 1.75-5.25</td>
<td>R =2.5-4.25</td>
<td>R =2.75-4.75</td>
</tr>
<tr>
<td>3.93 (1.05)</td>
<td>3.00 (0.75)</td>
<td>3.41 (0.81)</td>
<td></td>
</tr>
<tr>
<td>Stress interacting with patients (SiP)</td>
<td>R =2.75-5.75</td>
<td>R =1.75-4.25</td>
<td>R =1.25-4.75</td>
</tr>
<tr>
<td>4.79(0.39)</td>
<td>4.34 (0.32)</td>
<td>4.38 (0.36)</td>
<td></td>
</tr>
<tr>
<td>Job satisfaction (JS)</td>
<td>R =4.25-5.5</td>
<td>R =3.75-4.75</td>
<td>R =3.75-5</td>
</tr>
</tbody>
</table>

Standard deviations are provided in () brackets. R= Range
This study examined SLP student perceptions of RP as measured on the RPQ (Priddis & Rogers, 2018; Rogers et al., 2019). The aims of the study were to: (1) determine perceptions of RP capacity and outcomes of engaging in RP in three groups of SLP students, utilizing a validated and reliable instrument; and (2) examine patterns of perceptions of RP capacity and outcomes of engaging in RP across SLP students utilizing Hierarchical clustering (Manhattan distance). Comparisons between the novice, intermediate and entry level groupings revealed significant positive change in student perceptions of RP as clinical experience increased for the subscales of confidence (general), confidence (communication), and job satisfaction. A significant negative change was observed in student perceptions of RP as clinical experience increased for the desire for improvement (DFI) subscale. Three patterns for SLP students were identified as a result of hierarchical clustering (reflective and confident group, non-reflective group and a low confident group). The findings are discussed below along with the implications for clinical education, limitations, and suggestions for future research.

### 4.6.1 SLP students’ perceptions of RP capacity and outcomes of engaging in RP

Similar to Tillard et al., (2018), SLP students perceived that RP was useful to their clinical practice and reported learning as a result of being engaged in RP activities. Extending from Tillard et al., (2018), the current study provides reliable evidence that SLP student perceptions of learning from RP continues to remain positive as clinical experience increases. In general, all SLP student groupings demonstrated higher scores and a positive trend towards increasing RC as clinical experience increased (mean scores: novice grouping 4.52, intermediate grouping 4.53 and entry level grouping 4.63) compared to the results from
medical students (mean score 4.16) and mental health professionals (mean score 4.27) (Rogers et al., 2019). This finding reinforces that purposeful teaching and engagement in RP pedagogy across the clinical program (as was completed for the current study) has a positive impact on student perception of learning, confidence, RP abilities and reflective capacity (Rogers et al., 2019; Tillard et al., 2018).

Through examination of the six subscales described as outcomes associated with RP (desire for improvement, confidence (general), confidence (communication), uncertainty, stress interacting with clients and job satisfaction) student perception of practical learning outcomes that result from RP can be examined (Rogers et al., 2019). The current study extends findings from past studies by identifying three ways that the practical learning outcomes change as clinical experience increases (Priddis & Rogers, 2018; Rogers et al., 2019). Firstly, as SLP students gained more clinical experience, their perception of general confidence, communication and job satisfaction increased. This novel finding is useful information to share with students to highlight the positive impact that engaging in RP activities can have on confidence in clinical practice, and satisfaction for clinical placement activities across the clinical program (Rogers et al., 2019). This in turn, may motivate students to engage in RP activities (Barbagallo, 2021).

Second, the mean scores of SLP student subscales for uncertainty and stress interacting with clients were similar to that of medical student scores (3.42) and remained similar regardless of the amount of clinical experience (Rogers et al., 2019). This finding highlights that SLP students continue to perceive a level of stress when interacting with patients, families, and team members, and that uncertainty in decision making does not go away by the end of the clinical program. Similar to the suggestion for mental health professionals, this may be due to the variable nature of clinical experiences that SLP students engage in across their program (Priddis & Rogers, 2018). These findings may be additional
factors to share with SLP students, noting that for students in clinical programs the use of RP activities and “reflection-in-action” promotes questioning oneself; it is a part of usual practice and is motivating for growth and development of clinical skills (Rogers et al., 2019). Furthermore, it may be that the more reflective that students perceive themselves to be, the more they are tuned into, and the more comfortable they are with the feelings that arise when interacting with patients, and dealing with uncertainty (Priddis & Rogers, 2018). Educators in turn, can use the RPQ results to normalise the use of RP activities with SLP students as activities that support questioning oneself and managing stress. Educators should also discuss the potential risks associated with persistent feelings of stress and uncertainty which negatively impact one’s mental health, increase risk of “burn out” and reduce productivity and job satisfaction (Dawber, 2013; Dewa et al., 2014; O’Neill et al., 2019; Priddis & Rogers, 2018; Rogers et al., 2019; Shanafelt et al., 2016).

Thirdly, all groupings of SLP student mean scores for desire for improvement were on average higher than that of medical and mental health students (Rogers et al., 2019). One suggestion for this finding is that it is a result of engaging in purposeful and regular RP activities. As a result of engaging in RP activities, SLP students are well versed in identifying areas for change or improvement, and thus well prepared to engage in lifelong learning practices, which is promising for workplace practice requirements (Priddis & Rogers, 2018; Speech Pathology Australia, 2020). Unexpectedly, however, desire for improvement reduced as clinical experience increased. This finding may be due to both the timing of the RPQ at the end of the clinical experience, and the closing off of clinical placements (for example, the Entry level students were due to graduate as SLPs at the conclusion of this placement). This highlights the importance of a conscious decision in determining when to administer the RPQ within clinical programs. One proposal is that using the RPQ in the first half of the clinical experience may offer an opportunity to use the results to support student development, as
compared to at the end of the clinical experience, where the RPQ could be seen as an outcome measure only.

4.6.2 SLP student patterns of perceptions of RP capacity and outcomes of engaging in RP

The current study also replicated Rogers et al.’s (2019) hierarchical clustering to further examine the patterns within student perception of RP in an effort to better understand the findings and explore how the RPQ could be utilised in the clinical program. The findings revealed three distinct groupings for the SLP students regardless of clinical experience (Group 1 = Reflective and confident group, Group 2 = Non-reflective group, Group 3 = Low confidence group). In comparison to Rogers et al. (2019) groupings, only one group, Group 2 (Non-reflective group) presented with similar mean scores to a group described by Rogers et al. (2019), as the “Over-confident group”. Examining the RRQ findings in this manner has been suggested as a useful process to identify students (such as the Non-reflective group) who are at risk of poor or risky decision making, display ambivalence with patients and team members or show a general lack of awareness of possible deficits as a result of reduced engagement in RP (Gustafsson et al., 2021; Rogers et al., 2019). Using the hierarchical clustering technique alongside the RPQ to identify and organise students in this manner could also be useful a technique in order to tailor reflective teaching, activities and topics to the group needs. For example, for Group 2 (Non-reflective group), educators could use reflective activities such as RP groups and simulation to help identify what motivates students in clinical practice, and to simulate the consequences of decision making in a safe setting for both the student and patient (Hewat et al., 2020).

Group 1 (Reflective and confident group), and Group 3 (Low confidence group) do not compare to the groupings described for medical students (Rogers et al., 2019). One reason for this finding may be due to the three different levels of experience of SLP students.
in the study. In comparison, the medical students completed the RPQ two weeks before
graduation (Rogers et al., 2019). In the current study, students in Group 1 (Reflective and
confident group) included only one student from the novice placement grouping. In contrast,
students in Group 3 (Low confidence group) were largely made up of students in the novice
placement grouping. As such, the high levels of desire to improve, uncertainty and low
confidence and communication confidence are likely due to this lower level of experience. In
this instance, educators could use the groupings to examine the students in these groups in the
context of their level of clinical experiences. For example, this grouping was also comprised
of three students who had just concluded their final clinical placement. While finding entry
level students exhibiting low confidence characteristics is unexpected, this is useful
information for educators to have. A finding such as this could warrant individual discussions
with students on their final clinical placement to discuss feelings of low confidence and
uncertainty, and then provide tailored support to students during their final clinical
placement.

4.6.3 Implications for clinical education

The findings have positive implications for understanding student perceptions of RP,
clinical practice and learning, as well as how educators can aim to engage students in the
learning process (Barbagallo, 2021). The RPQ is a valid and reliable tool that could be used
gain a snapshot of how useful students perceive their RP abilities are in supporting their
engagement and learning as part of clinical practice. Educators can then evaluate the results
and work with students to provide additional or different support in the relevant areas (e.g.
discussion topics focused on embracing uncertainty in clinical practice, or embracing
discomfort during reflective activities) (Smith & Pilling, 2007; Thomas & Isobel, 2019).
Educators should also aim to overtly discuss their own experiences of engaging in RP
activities and the six areas highlighted in the RPQ that are associated with outcome of
engaging in RP – communication, confidence, job satisfaction, desire for improvement, stress and uncertainty. This both lets the students see RP in action, and supports engagement in RP in moving from the education setting to the workplace (Dunne et al., 2021; Karimi et al., 2017).

4.6.4 Limitations and future research

The study was limited by low numbers in the Entry level placement grouping (n=12). This may be due to the timing of data collection, at the end of each clinical placement. Entry level students had recently completed their clinical training and degree and so may have had less desire to participate in research. Another possibility is that students are being over assessed for their perspectives and may have questioning fatigue, resulting in less engagement in activities that require them to evaluate teaching and learning practices seeing it as one more assignment (Sid Nair et al., 2008). Next, the RC subscale may be less sensitive to students, such as the SLP students in the current study, who participate in regular and purposeful RP activities. This is suggested given the RC scores for all student groupings in the current study were higher than noted in previous studies with final year medical students and mental health professionals (Priddis & Rogers, 2018; Rogers et al., 2019). Alternatively, SLP students with reduced reflective abilities may have been unaware of their strengths and weaknesses, resulting in inflated RPQ scores (Gustafsson et al., 2021; Kruger & Dunning, 1999). To investigate both phenomena, utilizing the RPQ with practicing SLPs of varying years of experience is suggested for comparison. A further useful future direction to support educator’s ability to understand student RP skills is the combination of interpreting the self-report RPQ in conjunction with samples of student written or verbal reflection samples. Finally identifying the optimum timepoint within the clinical degree to assess student RP capacity needs to be explored. This aims to identify timepoints that would allow educators to use the results of the RPQ to support student learning and development.
4.7 CONCLUSION

This study demonstrated that, regardless of amount of clinical experience, the majority of SLP students perceived high levels of reflective capacity and, in general, their perception of their RP abilities and areas that are associated with outcomes of engaging in RP (communication, confidence, job satisfaction, desire for improvement, stress and uncertainty) increased as their clinical experience increased. The results provide quantitative data from the perspectives of SLP students to support the teaching of RP in clinical degrees. The RPQ is one such tool that can be used to examine SLP student perspectives of RP. The findings suggest that that students who are purposely taught and exposed to RP activities perceive RP aids their learning and clinical practice. Finally, this study identified three separate groupings of SLP students which allow educators to both identify and support students at an individual level, with the aim of maximizing their confidence, competence and desire for improvement.

Chapters two, three and four aimed examine different ways to assess SLP student WRP skill and perspectives of RP as clinical experience increased. These studies sought to inform teaching of RP and understand the impact of RP activities for SLP student learning and skill development using quantitative methodologies. The final study described in chapter five, aimed to complete the examination into RP activities for SLP students, and support teaching of RP, by understanding the experiences of SLP clinicians using a qualitative approach. Understanding the lived experiences of clinicians was sought to offer SLP students’ examples of how, when and why clinicians choose to engage in RP activities as part of their daily work roles. In keeping with adult learning principles, being able to share such examples and experiences from clinicians with students is thought to maximise student engagement students (Brookfield, 1986; Knowles, 1984). Therefore, the results of this study may maximise student engagement in RP activities, and support SLP students to see when
and why they might choose to use RP activities during their careers. Furthermore, examining clinician experiences was sought in order to support the teaching of RP in the SLP clinical program. This study was designed to extend on previous qualitative investigations in the health sector, by seeking perspectives of SLP working across health, education and private practice sectors (Caty et al., 2009, 2016b). The aim of this study was to investigate SLP clinician experiences and perspectives of RP in the workplace.
CHAPTER FIVE: A QUALITATIVE STUDY OF REFLECTIVE PRACTICE IN THE WORKPLACE. SPEECH-LANGUAGE PATHOLOGISTS HAVE THEIR SAY.
Background: The ability to engage in reflective practice (RP) and demonstrate reflective abilities is as an essential graduate skill by for Speech-language Pathologists (SLPs), yet limited studies have examined the perspectives of practicing SLPs and how and why they engage in RP (Speech Pathology Australia, 2020).

Aim: This qualitative study aimed to examine speech-language pathologist (SLPs) experiences and perspectives of reflective practice (RP) in the workplace.

Methods: Individual semi-structured interviews were conducted with thirty SLPs working in health, education or private practice sectors. Interviews were analysed using thematic analysis to identify themes in participant responses.

Results: Three themes were developed from the data, describing what SLPs use RP for (Theme 1: Am I on the right track?), what SLPs perceive as important in order to engage in RP in the workplace as well as the barriers they have identified (Theme 2: I know what works for me), and how SLPs have observed a change in engaging in RP as they have progressed in their careers (Theme 3: I don’t know when the transition happened).

Conclusions: SLPs described that RP is valued in the workplace for supporting client focused care, problem-solving, and lifelong learning. SLPs wanted time to be protected for RP at all stages of their career and valued the relationships with others as contributing positively to RP. Perceptions of and engagement in RP by SLPs changed in relation to their clinical experience, and fell into two stages: RP in early career; and RP as an experienced clinician.

Implications for clinical practice include making RP visible in the workplace for both SLPs and student SLPs, and reframing RP in the workplace with tailored professional development opportunities.
This chapter examines speech-language pathologists’ (SLPs) perspectives on reflective practice (RP) in the workplace. Specific to the profession of Speech-Language Pathology (SLP), and for the purpose of this study, RP is defined as a “… means by which learners can make sense of and integrate new learning into existing knowledge” (McAllister & Lincoln, 2004, p. 125). Definitions and models of RP in health and education settings highlight what RP look can look like, and include similar themes of deliberate learning, exploring experiences, questioning oneself, and interpretation and synthesis of information in clinical practice, in order to become a “reflective practitioner” (Boud et al., 1985; Gibbs, 1988; Killion & Todnem, 1991; Law & Shafey, 2019; Mezirow, 1991; Plack et al., 2005; Schön, 1983, 1987).

The ability to engage in RP and demonstrate reflective abilities is an important outcome for graduate clinicians in health and education fields for its contribution to effective decision making, clinical reasoning, problem-solving and lifelong learning (e.g. General Medical Council UK (Law & Shafey, 2019) and Nursing and Midwifery Council UK (Dean, 2020)). The field of SLP is no different, with RP described as an essential graduate skill by Speech Pathology Australia (SPA) as part of the Professional Standards for Speech Pathologists in Australia (Speech Pathology Australia, 2020), and as part of the Standards of Proficiency for SLP practicing in the United Kingdom (Standards of Proficiency for Speech and Language Therapists, 2013).

In response to RP being listed as an essential skill for graduates of clinical programs, a number of studies examining RP have been conducted in the nursing, medical, and allied health fields. Studies have evaluated a range of aspects of RP including the effectiveness of engaging in RP, perceptions of RP, descriptions of RP in the workplace, as well as workplace training or models for engaging in RP (Davey et al., 2020; Kim, 1999; Legare & Armstrong,
Common forms of RP described in the workplace include written reflection, RP discussion groups, and independent or internal reflection (Davey et al., 2020; Liddiard & Sullivan, 2017; Reschke et al., 2021; Roberts & Kumar, 2020). Some studies have also described how RP could be embedded into supervision practices (Fowler & Chevannes, 1998; Guy et al., 2020). Furthermore, a number of common benefits of RP in the workplace have been identified such as, reducing burnout, improving workplace efficiency, and job satisfaction.

Benefits for patients have also been reported, and included improved decision-making accuracy, reducing hospital admissions, or length of stay in hospital (Armstrong et al., 2017; Caty et al., 2016a, 2016b; Clouder, 2000; Liddiard & Sullivan, 2017; Mamede et al., 2008; Saban et al., 2021; Sherwood et al., 2018; Smith & Pilling, 2007; Thomas & Isobel, 2019; Walpola & Lucas, 2021; Ziebart & Macdermid, 2019). More recently, descriptions of how RP supported medical and nursing clinicians to make fast and effective changes during the global pandemic COVID-19 have surfaced and reinforce how engaging in RP can be useful in both new and complex situations (Carey, 2021; Dean, 2020; Walpola & Lucas, 2021).

Contrary to the documented benefits of engaging in RP, a number of perceived barriers or risks have been reported by clinicians in the health care setting. They include a reported lack of time to engage in RP or cost to the organisation when clinicians do so, psychological safety, and risks associated with confidentially and evaluating one’s competency. Clinicians have also described RP activities can result in a high focus on negative events. RP has been reported to place a focus on the individual rather than workplace systems. Finally, research suggests that RP that poorly taught can result in negative associations for clinicians (Branch & Paranjape, 2002; Dunne et al., 2021; Hodges et al., 2009; Law & Shafey, 2019; Liddiard & Sullivan, 2017; Marshall et al., 2021; Roberts &
Kumar, 2020; Strawson, 2004; Thompson & Pascal, 2011). Both the benefits of, and barriers to engaging in RP the workplace, offer useful examples for educators when discussing RP with students in clinical programs to so as to discuss how they can engage in meaningful and safe RP activities.

Looking beyond the healthcare setting to the education and teaching fields, a limited number of studies have described RP in the workplace and have highlighted some additional uses of RP and suggestions for successfully engaging in RP. Those in education fields have suggested that in order for RP to be effective in the teaching field, a readiness to engage in RP, ability to be flexible, trust and willingness to collaborate with colleagues was necessary (Godínez Martínez, 2022; Kramer, 2018; Kuswandono, 2014). Additionally, one study examined managers in higher education, who, contrary to the perception of clinicians in the health sector, described how RP was an effective use of time in the workplace (Raven, 2014).

Specific to SLP practicing RP in the workplace, three studies offer insights into SLP perceptions and processes of engagement in RP and the role SLP play in fostering RP skills with students. The first, a case study by Caty et al. (2009), described an SLP’s perspective of utilizing RP to support decision making and clinical skill development. The second documented SLP processes of RP in the head and neck cancer rehabilitation setting utilising a grounded theory approach (Caty et al., 2016b). Twelve SLP participants generated an overarching category of “Ongoing questioning” that was utilised for developing professional practice knowledge (Caty et al., 2016b). Caty et al. (2016b), revealed eight processes clinicians used to engage in ongoing questioning as: experimenting through trial and error; incorporating knowledge from past experiences; acceptance of surprise; thinking out of the box; being in the moment; discussions with colleagues; putting oneself in the patients’ shoes, and ethical issues. The third, a study by Dunne et al. (2021), examined SLP educator perceptions of facilitating RP with students. Some of their findings are relevant to SLP RP in
the workplace. The mixed methods study comprised of a survey and semi-structured interviews with seven practicing SLPs who had more than four years’ experience, and three academic educator SLPs with more than ten years’ experience. The themes that arose from the study described the processes used to engage in RP with students (reflective questioning). Next while the SLPs’ valued RP, their understanding of what RP meant, was found to influence how they embedded RP into the student experience. Additionally, this study revealed that SLP clinicians do not commonly discuss why engaging in RP is useful or beneficial with their student SLPs (Dunne et al., 2021).

In summary, studies thus far have shown that RP is utilised in the healthcare setting and to a lesser extent, education settings for clinicians and education professionals. Documented benefits of engaging in RP in the workplace suggest positive outcomes for both clinicians and patient care. The studies examining SLPs engaged in RP in the healthcare setting, while limited by sample size, are useful for examining the outcomes of RP education provided to students. They provide a beginning understanding of processes involved in RP, from which to build, develop and expand the scholarship of evidenced based SLP education, and in particular RP (Caty et al., 2015, 2016a, 2016b). However, SLP clinicians span healthcare, education, and private practice workplace settings, with the two latter settings not described in the research for SLP. Further examination of a larger sample size of SLPs, and their engagement in RP across all workplaces is required in order to provide an expanded understanding of how and why SLP clinicians engage in RP. Additionally, further examination of SLPs will offer further insight into how clinical programs can teach and engage SLP students in RP experiences. Doing so aims to prepare SLP students for the workforce, and engagement in life-long learning practices. Therefore, this study aimed to investigate SLPs experiences and perspectives of RP in the workplace.
This study received ethical approval from The University of Canterbury Human Ethics Committee, New Zealand. All participants provided written consent to participate.

5.4 METHODS

The study utilised a qualitative methodology primarily grounded in the phenomenology tradition. The phenomenology methodology was chosen to facilitate exploration of the lived experiences of the participants with respect to RP. The lead researcher (KC), known as “the candidate” from here onwards, is an experienced speech-language pathologist (SLP), researcher and PhD candidate and was involved in all aspects of the study. The primary supervisor, (MM), an SLP and experienced in research, assisted with study design. The secondary supervisor, (CM), also an SLP and experienced in clinical education research assisted with study design and data analysis. The candidate consulted with another SLP (CB) who is experienced in qualitative research at both the study design and data analysis time points. Finally, the candidate utilised another SLP (TO) who is experienced in qualitative research to assist with data analysis. All SLP involved had a shared interest in clinical education and supporting SLPs working in the field.

5.4.1 Context of the study

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5.4.2 Participants

To participate in the study, the participants met the following inclusion criteria: adult (age 18 years or older), completed at least 1 year of work in paid employment as an SLP (equivalent to completion of a Clinical Fellow (CF) year in the United States), was employed as an SLP at time of interview, and able to speak and read English fluently enough to participate in an interview. Participants were excluded if they worked in a university setting as a researcher or clinical educator. Participants were recruited through social media (e.g. Facebook SLP Alumni page), the research team’s clinical education networks (e.g. email lists
of SLP), and professional associations. No restrictions were placed on geographical location or location of SLP training program.

Participants included 30 SLPs (all female) who ranged in age from 24 to 55 years (mean age = 30.93 years; median = 27 years). Time since graduation from an SLP program ranged between one to 32 years (mean = 7.9 years; median = 5 years). The majority of participants were both trained and working in Aotearoa/New Zealand at the time of interview. Four participants were working outside Aotearoa/New Zealand at the time of interview.

Twenty-four participants were trained at the candidate’s university. Employment sectors for participants included 36% health sector, 33% education sector, 16% private practice providers, 6% charitable trusts, 3% other, and 3% had multiple employers. Table 5-14 illustrates the demographic data of the participants.

Table 5-13 Demographic data of participants

<table>
<thead>
<tr>
<th>ID</th>
<th>Age</th>
<th>Ethnicity *</th>
<th>SLP training country **</th>
<th>Employment category ***</th>
<th>Employment country **</th>
<th>Time since graduation from SLP program (years)</th>
<th>Experience category ****</th>
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<td>NZ</td>
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<td>2</td>
<td>Early</td>
</tr>
<tr>
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<td>NZ</td>
<td>HEALTH</td>
<td>NZ</td>
<td>3</td>
<td>Early</td>
</tr>
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<td>HEALTH</td>
<td>NZ</td>
<td>3</td>
<td>Early</td>
</tr>
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<td>Chinese</td>
<td>NZ</td>
<td>PRIV</td>
<td>NZ</td>
<td>2</td>
<td>Early</td>
</tr>
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<td>EDUC</td>
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<td>Mid</td>
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<td>P15</td>
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5.4.3 Data collection

A semi structured interview data collection method was utilised (Lyons & McAllister, 2019). All interviews were facilitated by the candidate. Each participant participated in one interview via zoom for a period of approximately one hour. In keeping with qualitative research methods for semi-structured interviews, a list of topics and guiding questions were generated in advance to ensure that the key areas of interest for the study were brought up in all interviews (Lyons & McAllister, 2019) (See Appendix E for a list of topics and sample questions). All interviews followed the same process and began with introductions from the facilitator and relationship-building time, before moving onto a review of the purpose of the study and the study parameters. Next, the interview portion consisted of two parts. In the first half of the interview (approximately 30 minutes), participants were asked about their experiences with reflective practice with the opening statement “tell me about your experiences using reflective practice in the workplace”. Following this opening statement, the interviewer listened to the responses from the participant and asked questions to extend, clarify or check for understanding.

The interviewer listened for statements from all participants relating to reflective practice including, but not limited to, topics such as types of reflective practice, or methods for engaging in reflective practice, why reflective practice is utilised, benefits of and barriers to engaging in reflective practice, and resources utilised as part of reflective practice. If no
statements were made by the participants related to the above topics, the interviewer asked a question relating to the topics (e.g. “Do you have any experience with written modes of reflective practice?”), or shared comments past participants had made (e.g. “A previous participant shared they reflect while driving, tell me about your experiences reflecting while driving”).

After allowing time for open-ended sharing of experiences related to the above topics, participants moved onto the second part of the interview. This focused on learning about participants’ experiences receiving education in RP in their university training programs. Participants were asked to share any experiences on the clinical teaching, assessment and clinical education practices, focussed on RP, that were embedded in their own training program. Participants were then introduced to, and asked to provide feedback on RP activities utilised at the interviewer’s university, as part of the clinical program, at the time of interview.

Throughout the interviews, participants were encouraged to share experiences and examples from their own lives, which resulted in some variation in discussion topics across interviews. The interviewer asked follow up questions with the aim of eliciting specific examples about the participants’ experiences. The interviewer briefly shared their own experiences where relevant or requested by participants, and concluded each part of the interview with a general closing remark such as “is there anything more you want to tell me about reflective practice?” As part of the conclusion, the interviewer noted that the participant would be posted or emailed the agreed gift card and be emailed the full transcript, a summary of the interview and video as part of the member checking process.
5.4.4 Data analysis

All interviews were video recorded via zoom, and transcribed initially utilizing zoom’s transcription service. The candidate then re-watched all interviews to ensure that each interview transcription was accurate. Notes were added regarding nonverbal communication (e.g. gestures and facial expression) to each transcript. In keeping with thematic network analysis procedure, all interview transcripts were read multiple times to achieve deep understanding of the content by the lead researcher (Attride-Stirling, 2001). The data analysis team members read 20% of interview transcripts and met multiple times to develop a set of codes for coding segments of the transcripts according to topic, in order to sort and organize different content areas in the transcripts. The specific transcripts used to develop the codebook were chosen by the lead researcher to represent the breadth and depth of content provided as well as participant characteristics (e.g. employment category, employment country, time since graduation, ethnicity and age). The majority of codes were not predetermined but emerged from the content of the transcripts. A small number of codes were closely tied to questions asked during the interviews such as the code “barriers” which was linked to the question “what if anything stops you from engaging in reflective practice?” The data analysis team worked iteratively, independently coding portions of the transcripts, and then meeting to compare their coding and further refine the codebook. This process was repeated six times (20% of all interviews transcripts) until all researchers were in agreement for the set of codes and their definitions, and demonstrated an acceptable level of reliability (90%) in coding the transcripts (see Appendix F for the codebook).

Once the codebook was finalized and reliability of coding established, interview transcripts were uploaded to NVivo, a software-based indexing program (NVivo, 2020). All transcripts were coded into excerpts, by the candidate. Excerpts for each code across all transcripts were extracted and summarized. Themes were then developed that provided an
overview of salient experiences as described by the participants. Again, the candidate proceeded iteratively, at times working independently to summarize sections of data, and then meeting to discuss the coded excerpts and emerging themes with the researchers and data analysis team. To achieve consensus among the data analysis team, this process was repeated multiple times to ensure the salient experiences of participants were highlighted, while also providing examples of instances in which a participant’s experiences notably differed from others.

5.4.5 Rigour

Several steps were completed to ensure the rigour of the data. All interviews were facilitated by the same interviewer, the candidate, which provided consistency across interviews. The candidate checked the transcription of all interviews. Member checking of the transcript occurred by emailing each participant their transcript, a link to the recorded interview, and a summary of the interview. Participants were given one month to check the content of the interview, confirm the summary, and remove any content. One participant asked for content to be removed. One research assistant (an SLP undertaking further postgraduate study) checked 20 percent of transcripts for reliability. As a result, minor wording changes were made to the transcriptions such as correcting spelling of Te Reo Māori words e.g. whānau (family) and attributing the contribution to the correct person e.g. participant or the candidate. In keeping with methods for qualitative interview data, the candidate kept a field diary and made notes after each interview of content heard, and regularly shared reflections from interviews with both supervisors and consultant SLP to determine if any new questions needed to be raised in latter interviews based on findings from earlier interviews. The three SLP researchers involved in data analysis engaged in a constant process of challenging each other and the emerging themes, working both
independently and collaboratively in cycles during codebook generation and theme development (Lyons & McAllister, 2019).
5.5 RESULTS

The overall purpose of the study, as explained to participants, was to explore their experiences and perspectives of reflective practice through their SLP lens. This paper will focus on participants’ experiences with RP in the workplace, with data pertaining to their experiences in their training programs reported elsewhere. The three themes presented below, which were developed from the data, describe what SLP use RP for (Theme 1: Am I on the right track?), what SLP perceive as important in order to engage in RP in the workplace, as well as the barriers they have identified (Theme 2: I know what works for me), and how SLP have observed a change in engaging in RP as they have progressed in their careers (Theme 3: I don’t know when the transition happened). Table 5-15 provides an overview of the results, and the themes are described in detail below. Quotes from participant responses are included with the designation of the participant by number (e.g. P12 is participant 12).

Table 5-14 Summary of themes and sub-themes

<table>
<thead>
<tr>
<th>Theme</th>
<th>Subtheme</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>Am I on the right track?</td>
<td></td>
<td>SLP descriptions of the benefits of engaging in RP in the workplace</td>
</tr>
<tr>
<td>1. Why did that happen?</td>
<td></td>
<td>For problem-solving – A clinical focus was most common</td>
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<tr>
<td>2. You actually need to be able to reflect on your practice, in order to continuously improve yourself.</td>
<td>For continuous improvement and completeness</td>
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<tr>
<td>3. It's a lot easier to catch up with someone when they're making a cup of tea, and talk about the home visit</td>
<td>The role that workplace colleagues play in RP</td>
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<tr>
<td>I know what works for me.</td>
<td></td>
<td>RP happens through a variety of ways, with various forces shaping these practices. SLP share facilitators and barriers to engaging in RP</td>
</tr>
</tbody>
</table>
1. People do things differently
   The different modalities SLP use to engage in RP

2. You definitely have times where you don't have time to do it immediately
   When SLP engage in RP and the barriers to this

3. It does seem to be very much dependent on your employer
   How the workplace culture impacts RP

4. Yeah, just keeping those questions in mind
   Tools for engaging in RP

I don’t know when the transition happened
   Descriptions of how SLP feel their RP or ability to engage in RP has changed over time as clinicians gain more experience in their careers

1. As a New Grad it was really prioritized
   Early career SLP who describe engaging in RP primarily for confirming or challenging own thinking with peers

2. I don’t know when that developed but that is so internal now
   With more experience in the workplace comes a change in access and focus of RP

**Theme 1: Am I on the right track here?**

This theme provides information about the common uses of RP in the workplace including; problem-solving (sub-theme 1 – why did that happen?), continuous improvement and completeness (subtheme 2 – you actually need to be able to reflect on your practice, in order to continuously improve yourself), and how participants utilise their colleagues in order to engage in RP (sub-theme 3 – it’s a lot easier to catch up with someone when they’re making a cup of tea). Participants in this study regularly described a strong sense of self surrounding RP, “Well, I am naturally quite a reflective person. I’m really self-aware… So, I’ve always found it really natural,” (P2). Coupled with this, participants were overall positive about the benefits of engaging in RP as is reflected in the subthemes and examples below.

**Theme 1 sub-theme 1: why did that happen?**
The most common use of RP that participants described in this study was to engage in problem-solving about various aspects of their caseload. In particular the term “complex clients” was frequently mentioned when identifying why they engage in RP. When asked to describe what made a client “complex,” participants described something about the client or family they were working with that was not part of their typical caseload (e.g. diagnosis, family situation or a combination of both). Adding to that point, most participants described using RP with “complex clients” commonly to ask themselves “…am I on the right track here?” (P18), typically with a focus on outcomes for their clients. Participants frequently paired outcomes with a reminder that no client or family was the same, “…I’m not just doing the same thing over and over and over again. I am reflecting and thinking, how can I do something differently,” (P17).

Participants described engaging in RP to question themselves about decision making, both in the moment for immediate change: “…How can I make it harder? How can I make it easier? I think you kind of reflect in that moment…” (P5), and when reflecting after a session or interaction: “…what are the decisions I just made? What was my rationale? …why am I saying what I'm saying?…” (P25). When reflecting after the interaction, participants overwhelmingly described using RP to guide decisions for the future, identifying what did not work as they planned, or demonstrating curiosity about why something did not go as planned: “…what went well, what didn't go well. But then also… Okay, well that was tricky… What can I do differently? rather than just complaining and saying, it was a crappy session … like actually analysing it” (P12). Alongside decision making and better outcomes for clients, participants also described a benefit of reflecting after the fact, as adding order to their workload: “…It helps me feel more organized as well...I feel the reflection, whatever way it's done, is so important, so that you can kind of check in and move forward” (P3).
While the majority of participants identified “complex clients” as the main reason or trigger for engaging in problem-solving using RP, a number of other topics were shared to a lesser extent demonstrating the diversity of ways RP was used. This included examining: communicative interactions and breakdowns in communication with team members, families and teachers; cultural safety\(^4\) (e.g. how I could include more sign language or te reo [Māori] language… Sometimes I can do that in the moment…And sometimes it's something I might reflect on afterwards” (P3)); equity (e.g. “we’re doing a heap of work about equity at the moment, and how that looks and what does it actually mean for us?...we're trying to make those spaces of reflective space” (P29)); discussing ethical dilemmas (e.g. “recently over the COVID lockdown … a lot of questions came into the ethics behind providing … Teletherapy, which was more sort of one on one direct where our general, the way that the [education organisation] works is generally more a systems based” (P14)); and reflecting on service delivery and administration (e.g. “How are we getting referrals? What's working and what's not working?” (P4)).

Theme 1 sub-theme 2: You actually need to be able to reflect on your practice, in order to continuously improve yourself

This subtheme showcases a sense of using RP to engage in continuous self-improvement and growth in their roles as clinicians shared by participants and how that, in turn, further benefitted their clients, “…You want to be a better clinician. You want to be better for your families and whānau [family] and Kaiako [teacher]…. So the point of reflective practice is to see if you can make things better,” (P20). A number of participants described their personality traits, values or upbringing and how RP enabled them to practice

\(^4\) In the Aotearoa/New Zealand context, Cultural Safety is described as a person’s own reflection of and accountability for their own values, bias, assumptions, beliefs, attitudes and how this may affect their interactions with or service provided to the people they are working with (Medical Council of New Zealand, 2019).
as an SLP, “I don't even know if it's a cultural thing or is it a person thing? Like is it just because I'm just a more unsure person?… But reflective practice did really help,” (P7). Participants also described how using RP specifically contributed to an increase in their confidence and competence in clinical skills or knowledge: “…it's a very important thing to be able to … develop, at any age or any experience level… It allows you to continually learn” (P3).

Within this subtheme, participants described engaging in RP for self-care. Here, participants shared experiences of using RP to acknowledge and work through a number of emotions that are often negative, (e.g. managing stress, workload or organisation requirements), as well as celebrating successes or achievements with client outcomes. Participants described using RP initially as a way to identify and manage the emotions they are feeling: “… I wouldn't say necessarily makes my feelings go away… But I think it forces me to do something about it…” (P21), “I'm a very emotional person…So yeah, that that reflective practice really helps me separate what I'm feeling versus what I'm actually doing” (P22). Some participants described feelings of guilt around their lack of knowledge; “…prime example: Selective mutism, I don't know much about that. I came across it and I just remember feeling guilty,” (P11), or how they used RP to come to terms with feelings about what they could provide for clients: “… I feel like reflective practice is our best defence against burn out…it makes you connect with yourself but also your colleagues and think about the successes and identify where things don't go well, that are outside of your control...” (P1).

Finally, participants described how they also use RP for positive emotions describing carryover to job satisfaction and even home life: “Oh, talking through challenges or celebrating success is really important to me and it makes me do a better job overall inside and outside of work I guess and it leads to not taking things home…” (P2). Successes
described by participants were largely client focussed and related to client progress in therapy: “So even if I'm really happy with how an appointment’s gone they feel like it was a success, and I feel like we made a lot of gains and being I'm still actively reflecting on that and why I felt good about it,” (P6).

Theme 1 sub-theme 3: It's a lot easier to catch up with someone when they're making a cup of tea, and talk about the home visit

This third sub-theme describes the notion that relationships with others are central to engaging in RP, “… I think it's about having the right people…the right people are different for different people,” (P16). Participants shared that certain people make RP more meaningful and safer, “I think that relationships are very important. I think that a lot of people kind of maybe don't understand the importance of that and how it really facilitates reflective practice,” (P26). Participants described that these people can be colleagues, supervisors, and friends who are SLPs that they met while at university “Because I think you just take it for granted about those like open conversations. You don't think anything of it. And that really is reflective practice,” (P11). Participants described the conversations with colleagues as informal and frequently referred to such interactions as a “debrief”.

Participants shared a number of reasons for seeking to engage in RP with colleagues. For some, this was due to the availably or convenience of colleagues, “I’m sitting in a pod with a few other colleagues, who are also SLPs… I tend to just turn to them, and be like, you know, hey I’ve got this kid, they're doing this, have you had this before?” (P17), or needing to talk their thinking through aloud. For others, choosing to engage in RP with a colleague was influenced by an increase in their self-confidence, the urgency of the discussion, or gaining a different perspective: “…informally as well, so again just having those discussions with speech therapy colleagues around if there are any tricky patients… you know, we’d just
like a second opinion on,” (P30). Finally, there were a number of participants who shared the idea that they gained more than just RP support from colleagues, rather they saw RP as achieving a double duty of also connecting with a colleague “…has a second purpose of catching up with a colleague. Kind of gets two birds with one stone,” (P1). Participants also described experiences of engaging in RP with people who were not SLPs, including allied health team members and partners as a support for RP. Participants described engaging in RP with non-SLPs as valuable as a sounding board, a method for soliciting different perspectives and gaining advice, “I was working in an MDT [multi-disciplinary team] of people who have many, many years of experience … it was great because they would share their experiences of working with similar patients or, just that life experience sometimes was really helpful” (P30).

While the majority of participants noted the benefits engaging in RP with colleagues, one participant shared a differing view as related to productivity and immediacy, “…the debrief with the colleagues is when you get into a moan session and it's not the most productive conversation or … effective reflection time either because you're both feeling emotional…” (P23). Alternatively, some participants shared how the COVID-19 global pandemic has changed RP with colleagues, describing that what used to be somewhat informal, and between clinical interactions daily, now needs to be scheduled similar to supervision practices, “…it's … been very isolated online like this and you're kind of seeing the child, next, next. And I didn't appreciate the benefits of seeing your colleague in clinic and just having a quick chat about a child.” (P11).

Participants shared that they were more willing to be reflective with colleagues when not feeling judged and knew the expectations, “I'm not here to judge you, and what you're doing. I'm just here to step in and support you as, if and when you need it,” (P15). Particularly for SLPs with less than 5 years’ experience, knowing who to talk to was important, so as to not
feel like they were asking too much of their colleagues, “like initially when I got into the workplace and like, well, I don't want to bug anybody,” (P9).

Participants also shared, perceived or lived experiences of the changes or risks associated with engaging in reflective practice in the workplace with a colleague or peers, describing that it felt risky to be open and honest about their clinical skills if they did not have a safe relationship: “Revealing fears, revealing vulnerabilities, revealing perceived weaknesses in a small team…” (P28). Knowing who to talk to and what they were going to do with the information gained appeared to resonate with other participants too: “…everyone now goes, am I talking to clinical lead [name ]? or friend [name]? and just really hearing those clear boundaries” (P9). Participant 9 went on to share: “… knowing that there isn't any judgment, that there's not gonna be any consequences…” (P9). Alternatively, one participant described not feeling listened to when they did try to reflect with a peer and how that negatively impacted their willingness to engage in RP with others: “…They're just telling you to suck eggs like very, very, very, very basic things, and it's like, I did do four years of degree. … I probably find the whole getting nagged at, or talk to. I think I find that quite stressful, and I just sort of shut off in a way...” (P21).

Theme 2: I know what works for me

This theme showcases SLP participants’ descriptions of the common modalities they use to engage in RP (sub-theme 1: People do things differently), factors of time (sub-theme 2: You definitely have times where you don't have time to do it immediately), how workplace culture can influence RP (sub-theme 3: It does seem to be very much dependent on your employer into who you work for) and common tools participants use to engage in RP (sub-theme 4: Yeah, just keeping those questions in mind). Both facilitators and barriers to engaging in RP are considered throughout this theme.
Theme 3 sub-theme 1: People do things differently

SLP participants described engaging in RP utilising three common modalities: internal thought; verbal discussion; and writing. However, they also shared a sense that they notice benefits from engaging in RP when done on their own terms and in the modality of their choosing, “I know what works for me”, (P2).

When discussing internal and independent RP (...in my head” P24) some participants shared their reasoning that it was part of their typical process, and they were able to be more honest with themselves compared to discussing with other people: “So I've already like self-reflected in my head said, okay, this is a process of it. I got it. And this where I’m stuck. And I've thought about it...” (P24). A number of participants described travel as part of other regular work role and shared that this was their opportunity to reflect independently, “…I have a quite a long drive to work…on my way to work I'm thinking about stuff and on my way home… because you've sort of a step back from being in in it,” (P10).

Almost all participants described a verbal discussion modality as central to engaging in RP. Theme 1, subtheme 3 has highlighted the importance of community and relationships when engaging in RP for SLP. The verbal modality included one on one discussions both formally via supervision, via a peer group discussion or informally with colleagues. Participants regularly described workplace supervision, in a one on one verbal format, as being central to engaging in and promoting RP in both a supervisor or supervisee role, “…clinical supervision, that's what facilitates my reflective practice and it prompts me to reflect on what's happened,” (P11). Conversely, some participants perceived that the quality of reflective practice within supervision was dependent on supervisory skills and their ability to effectively utilise reflective questioning, “We do have supervision. And I find it tends to depend on your supervisor as to how reflective their questions get,” (P8).
In keeping with formal opportunities for RP, a couple of participants described the benefits of group reflection earlier in their career in team meetings, but shared that these had since been stripped back from their workplace. Participants went on to describe that RP with peers in a group format would typically take 1-1.5hrs and that this was sometimes a barrier to both scheduling different group members, and a few participants described a lack of workplace support for RP groups:

“…the top down message was they kind of, wanted to … give permission for that, and what does it mean if a group of us was off site or involved all at the same time? … that’s a lot of people off the off their wards. Then what is the implication to that for how you feel like you're managing with your caseload?” (P28).

Participants also shared a number of examples describing how RP occurred informally in the workplace such as meal breaks, driving with colleagues, and phone calls with colleagues:

“So like lunch breaks and morning tea, we might sit down and just be like, so I saw this strange patient, the other day…” (P4), “And I do a lot of joint visits with other therapists, just that car time as well. I really enjoy and appreciate sort of that debrief with another therapist,” (P7).

A number of participants described that they use the modality of writing to engage in RP, “I think sometimes writing’s a good way to reflect as well, rather than just sort of thinking in your head. So I … often scribble things as I'm thinking”, (P14). Participants gave a variety of reasons for writing including; an organisational tool, to support discussion during supervision so as to make the most of the time, and writing as a way to identify what to do next:

“… I would just be writing down like what went well, what did I think went well, what did I think didn't go so well. And then actually thinking, okay, and those things
that didn't go so well how can I be supporting myself to fill in those gaps? And then you have a practical step next,” (P22).

Finally, a number of participants described how they combine RP and clinical documentation. This comment was repeated by number of participants, with less than 5 years’ experience. One participant, with 6 years of experience sharing that their reasoning for continuing this practice was related to efficiency “…it's useful for them to see why you made the decisions that you're making... So I feel that that's the most efficient place to put it,” (P23).

Theme 3 sub-theme 2: You definitely have times where you don't have time to do it immediately

During the interview participants shared how often they engaged in RP, typically separating timing for RP into supervision meetings, and their “day to day,” (P10) RP. In general, participants described how they aimed to complete some type of RP after most clinical interactions, but that this was not always the case due to their clinical work schedule, “So you definitely have times where you don't have time to do it immediately. I mean, I still, you know, I think you do it as you go along…” (P25). Some participants described the importance of engaging in RP close to the interaction so that their memory of it is correct, “I noticed that my memory of details, and my ability to reflect… gets worse, if I haven't written down enough, but then also if I don't get to do my [clinical] note, and, you know, within the 24-48 hours,” (P6) and that they often timed engaging in RP as they completed their clinical documentation, or discharge reports.

The most common problem to engaging in RP that participants described in this study is that of time. Beyond that, participants described that their caseloads were large, and they reported feeling pressure from their organisation, management and even colleagues to complete face to face work with clients first with participant 28 summarising: “We had to
prioritize the patients that were being seen” (P28). Participants described feeling like it was acceptable to cancel supervision meetings or peer RP group meetings in order to work with a client: “…when we get busy that tends to drop a wee bit, or our external supervisors we push those dates out further and further because we want to prioritize our core work first.” (P13), and later having difficulty rescheduling supervision due to the differing work schedules for both parties. Despite the perceived prioritization of clients, participants were again in agreement that when they were able to find the time to engage in RP it had a positive impact on their clinical practice and outcomes for clients:

“I'm very aware of the benefit. It's almost, it almost seems really disproportionate, the amount of time I put in versus what I get out of it ... Like a half an hour a week that I do my wee reflection gives me a disproportionate boost for the week…” (P27).

“[RP] does take out of face to face time but it informs your practice so much more that actually that you get so much more benefit and you become more efficient in what you’re doing you get better outcomes as a result” (P13).

To overcome the barrier of time, most participants described that having RP embedded in their daily or weekly schedule overtly, similar to an appointment with a client would be their preference: “I guess, in a perfect world we'd probably have, I guess, dedicated time, for that reflective practice” (P17). However, several participants wanted the flexibility to tailor RP to their own style and needs, “Some people might say, having a particular protected time for reflection, but that wouldn't work for me. I think you've got to do it when you're when your brain’s ready to…” (P10). Other suggestions to overcome the barrier of time, included a change in caseload, and/or better staffing. However, participants perceived that those suggestions were unrealistic or further out of their control and not going to change compared to the possibility of dedicated time.
Theme 3 sub-theme 3: It does seem to be very much dependent on your employer

This sub-theme presents the participant perceptions of how the workplace culture can both promote and limit RP opportunities. Participants acknowledged that it is difficult for management and organisations to visualise RP: “…workplaces have that real value, being really busy, and looking productive … sometimes reflective practice can look like, having a cup of coffee.” (P1) The same participants described that while RP might be encouraged by management or colleagues, they perceived this was without supporting RP with designated time in the workday, as well identifying the need for leadership modelling and advocating for RP: “That ties in with the sense that not all organizations are particularly well set up for reflective practice… maybe the organization was, but if you have a change of personnel, it doesn't take much to change the dynamic.” (P20). Alternatively participants who held, or have held leadership positions, or worked in private practice, were able to share their differing perspective, of finding it difficult to ask staff to prioritise RP as part of their regular workload, as a result of not being able to invoice anyone for engaging in RP: “… I think they would probably put reflective practice to the bottom of the priority list because it wasn't billable … So it was quite a balancing act to kind of reinforce the importance of that…” (P19).

Some participants also perceived that not all SLPs in their workplace engaged in RP, and went on to suggest that if more people were overt about engaging in RP, providing collegial support for RP, that might also support workplace managers to promote RP: “…it could be better probably should be better… if I'm having to think this hard about when I'm doing it and why, it's probably not where it should be... It's not something that comes up in team meetings…” (P23). Participant 23 went on to share that to feel like they could protect time for RP this would need to be supported by their organisation and modelled by colleagues “if you had an allocated time and that's what you were doing at that time. And it was seen as
essential by management, then you would do it… like putting a team meeting in your diary…
that you are required to be at” (P23).

A small number of participants shared how engaging in RP is an organisation
requirement for them. For some this was described as requirement as part of their workplace
performance reviews, and a small number of participants were required to engage in RP daily
with a combination of verbal and written requirements. For others, this was at a group or
team level, “…that's when another way we do reflection is, in the afternoons, we have a team
meeting… the whole afternoon is meeting time with the whole team” (P3), conversely some
participants were unsure if that constituted RP, “I don't think we formally do group
reflection…we have team meetings and we’ve had in-services where we may do a group
reflection not, it's not like we sit there and be like, this is a group reflection,” (P4). Two
participants shared their experiences of direct oversight and requirement for how, how often
and when to reflect and described that this approach did not promote RP, “It kind of like feels
a little bit excessive sometimes, and sometimes feels more like it's getting in the way of me
doing my work than anything else.” (P18).

Theme 3 sub-theme 4: Yeah, just keeping those questions in mind

During the interview, participants were specifically asked their opinions about what resources
they used to engage in RP. A number of participants referred to RP questioning guides that
they had accessed when a student, “I actually have referred back to the Uni reflective practice
prompt things,” (P19). Participants went on to describe how they had modified them over
time to fit their needs and gave examples of questions they ask themselves or others “often if
I'm kind of like, well, this happened. I don't know where to go with it or what to think. I'm
just like, So what?” (P26). A small number of participants described reflective practice
models by name that they were also introduced to during their university studies, such as “Kolb’s reflective cycle,” (P29), and “Gibb’s reflective cycle” (P11).

Most participants referenced completing a supervision training course, provided by their workplace, as a source of resources, questions or tools to support them engaging in RP during supervision sessions. To a lesser extent, participants described RP forms designed by their workplace as promoting RP. Some noted the forms are used as part of performance reviews, “…we have a goal sheet form that we use…” (P10), as part of a team discussion focussed on a case, on service discussion or asking questions about caseload management. A number of participants described that the workplace forms did not meet their needs, were rather onerous, repetitive or required by their manager but often without follow-up, “they take so long, it sort of just ended up being more of a case discussion …they said it is an expectation. But then there's not really anything concrete followed up on,” (P8).

Participants made connections between RP and professional development, describing that RP happens at professional development events and when reading journal articles, describing professional development as the resource that promotes them to reflect on their current practice and generate ideas for change, “…I still trawl through a lot of journals and things and I'm a member of the SIG13 for the ASHA… I started looking at the Royal College website for webinars …There's always stuff popping up that makes you think about why you do what you do (P14). Furthermore, participants described utilising digital (podcasts) and social media (Facebook groups and Instagram) to engage in RP. Facebook groups were described as safe places to ask questions, read and learn from other’s perspectives, and prompt reflection. Instagram accounts (specifically “The Informed SLP”) were utilised for evidenced based practice in an easily digestible format without jargon, “…the informed SLP…Yeah, oh my gosh, they're my favourite. And it's such an accessible way to find evidence-based practice,” (P15). Finally, specific podcasts such as those presented by
researcher and author Brene Brown or SLP focused Podcasts were described as useful for promoting reflective questions and reflection on own caseloads or clients.

**Theme 3: I don’t know when the transition happened**

Where the second theme described modalities, facilitator and barriers to engaging in in RP in the workplace, this theme showcases descriptions from participants as to how their focus and ability to engage in RP has changed over time. First, participants shared experiences of being early in their careers where they overwhelmingly described how RP was protected for new graduates (subtheme 2: As a New Grad it was prioritised). Next, participants with five or more years of SLP experience described becoming more established and experienced clinicians who are able to embrace uncertainty, but who also noted less protection of time, and prioritisation for engaging in RP (subtheme 3: I don’t know when that developed but that is so internal now).

**Theme 3 sub-theme 1: As a New Grad it was really prioritized.**

Here participants shared their experiences of being early in their career (i.e. less than 5 years), and engaging in RP. Experienced clinicians also reflected back on the beginning of their careers. At this stage in SLP careers, RP was described as both purposeful and knowledge building. Firstly, participants described engaging in RP being appreciated for new staff, “Well for us newbies I think it's pretty valued… But I do know that it's not widely practiced in our office. So that's, that's the thing. So I'm not too sure how valued it is generally in the office…” (P22). Secondly, engaging in RP was described as being an intentional practice with time allocated in the work week, “…I think like Fridays were our graduate day, so you know we had that every day for a year, which was carved out…” (P19).
Participants early in their career shared their perception of the reasons for the purposeful focus on RP as being related to clinical knowledge and skill building, “… initially it was a lot more about the therapy… I chose this thing, was that the right thing? What else would you do? You know that kind of clinical knowledge” (P29).

The majority of participants with less than five years of experience in the workplace described specific reasons for engaging in RP with peers and colleagues, that was not articulated by experienced clinicians. These participants described RP with others as a way to confirm their own conclusions, or seek advice about clinical problems. Participants related this to a feeling of reassurance, “…I guess, because I'm still quite new, and just a lot of confirming a lot of like am I on the right track here? and type of stuff. Um yeah, that’s what I find most useful at the moment….“ (P18). Some described asking people questions for general advice “…we quite like just being able to sometimes be like, “What do you think? , or do you have any advice?”, (P6). This group of participants also went on to describe a sense or tension of wanting to be told what to do some of the time when they were engaging in RP with others: “…probably she’ll say: What are your thoughts on that? and I'm always like, you should just tell me the answers. And then I don’t have to go through the process of everything to think about myself. But she's right…” (P22).

Theme 3 sub-theme 2: I don’t know when that developed but that is so internal now

Experienced SLPs with five or more years of workplace experience described how engagement in RP has become more intuitive, yet less protected. They shared the ways they use colleagues to foster RP, and how they support junior staff or students to engage in RP in the workplace. These SLPs discussed a change from formal RP to internalized practice, that was now woven into their regular week, “… it's a lot more just a part of my being now… Whereas I think earlier on … it is that idea that I had to sit down and reflect. This is me. I am
reflecting, type, type, type,” (P27). Experienced SLPs shared that the less formal process of RP, can make it difficult to identify learning opportunities and purposeful RP, “…I think they’re quite like strongly embedded skills for me now. I do it without even thinking a lot of the time. Like it’s just part of my conversation,” (P2). Engaging in RP to support communication with team members was regularly mentioned by participants with more than 5 years’ experience, “…I use for less of the “day to day” more kind of if I'm having issues within the team,” (P10). There were also reports of RP supporting participants, to realise and accept, that they did not and did not have to have all the answers for their clients, “…when I was a new grad, and what stopped me and because I felt like I had to have the right answers like it wasn't OK, I was less okay with not knowing…” (P16).

The experienced SLP group described utilising their colleagues for RP differently than the less experienced SLP. They utilised colleagues largely to challenge their thinking, find their blind spots and understand different perspectives. Experienced clinicians went on to describe three common reasons for seeking peer support more often. Firstly, they described confidence in their own abilities, “… now that I've worked for years and I feel, you know, maybe a bit more confident in my abilities. I do really appreciate more, like informal discussion with colleagues, more like a give and take two-way relationship,” (P19). Secondly, they utilised colleagues to compensate for a lack of formal supervisors, “I feel like I probably do mine independently, because I find accessing supervision to be so sporadic” (P1). Thirdly experienced supervisors described turning to colleagues informally to address their perception that RP was not a priority for them, compared to their junior colleagues, “In the early days, you know as a newer therapist, there was a, more of a mandate for protected time for reflective practice through supervision” (P28).

A number of experienced participants also shared their involvement in supporting student SLPs to engage in RP while the student SLPs were completing work-integrated
learning as part of their clinical courses. Others shared their experiences of supporting new graduate SLPs. Participants described that supporting student SLPs or new graduates promoted a change for them back from internalised RP to external RP. They also shared reflective strategies they were using to demonstrate RP externally, such as thinking aloud, and talking about their own reasoning, “I try and talk to students practically like about what I do. You know, like, so when I leave a session this is actually what, so talking about my thinking… (P16), and asking themselves why they were working in a certain way. Some participants shared that they used questioning to promote on-going reflection by SLP students,

“… with the students, it's definitely more clinical detail. Like, what strategies did we use today? … What worked well? what didn't go well? Was there any bias that you brought to it? How has your previous experience with a similar child or a similar experienced influenced what you're seeing today?” (P13).

Supervisors encouraged their students to continue the reflective practice via written reflections, typically using their university’s reflective questions, “I work on the assumption they know them from uni … And then I give written feedback about the written self-reflection, so that I can guide and develop that,” (P1).
5.6 DISCUSSION

This qualitative study aimed to describe and examine SLP experiences and perspectives of RP in the workplace. This was accomplished through in-depth interviews with thirty practicing SLPs working across the health, education and private practice sectors. The findings suggest: (1) an overall degree of consensus in describing uses and value of RP across workplaces for SLPs, (2) there are a number of facilitators and barriers to engaging in RP in the workplace and (3) how perceptions and engagement in RP evolves throughout the SLP career. The findings are discussed with implications for clinical practice, limitations and future research.

5.6.1 Value of RP in the workplace for SLPs

The first major outcome from this study were the descriptions of RP uses or benefits of RP in the workplace by SLPs working across health, education and private practice settings. Participant responses included valuing RP to support problem-solving, with a focus on gaining better outcomes for their clients. They discussed a range of topics (for example, reflecting on complex clients, unfamiliar situations, communication interactions, cultural safety, ethical dilemmas, knowledge seeking, and service delivery). This finding is largely consistent with the literature whereby clinicians describe similar benefits of utilising RP as a reactive process in response to a situation, in order to improve future practices (Caty et al., 2009, 2016b; Fatimah et al., 2021; Mamede et al., 2008; Walpola & Lucas, 2021).

SLPs also highlighted the personal value of engaging in RP in the workplace and shared how engaging in RP in the workplace can move beyond problem-solving for the client and have a positive impact on job satisfaction and resilience. SLPs described RP engagement contributing to increased confidence, life-long learning and self-care practices. These descriptions support findings from the medical, nursing and allied health literature (Harrison
& Fopma-Loy, 2010; Liddiard & Sullivan, 2017; Sherwood et al., 2018). Furthermore, SLPs articulated that often the trigger to engage in RP was initiated by an emotion or feeling. SLPs described both positive and negative emotions including for example, celebrating successes or feeling uneasy about an interaction. This finding is also similar to comments that are iterated by other practitioners who utilize RP (Bulman et al., 2012; Marshall et al., 2021).

Central to the first theme was SLPs descriptions that relationships with colleagues or trusted partners were both useful and important for successfully engaging in RP. This finding is consistent with previous studies describing the importance of relationships and value of collaboration with peers to foster engagement in RP, reduce power disparities and maximise sharing of knowledge about both the workplace and clinical practice (Godínez Martínez, 2022; Kuswandono, 2014; Ng et al., 2020; Walsh & Mann, 2015). The current study offers a number of examples specific to the SLP realm highlighting the benefits of engaging and collaborating in RP with other SLPs, wider team members and those outside the workplace (e.g. partners and friends). Respondents highlighted formal and informal opportunities for engaging in RP as being useful. Similar to other health practitioners, SLPs in the current study were also able to offer suggestions for ensuring maximal emotional safety and trust when engaging in RP with others – including knowing the expectations and identifying a person with whom they can be vulnerable with, feel listened to and being clear of their work role at time of discussion (e.g. manager, supervisor or colleague) (Dunne et al., 2021; Godínez Martínez, 2022; Kuswandono, 2014; Liddiard & Sullivan, 2017; Marshall et al., 2021).

5.6.2  Facilitators and barriers for engaging in RP

The second major theme (I know what works for me) describes how SLPs successfully engage in RP in the workplace utilising a combination of different modalities,
the challenge of time and RP, how their organisation can both facilitate or be a perceived barrier to engaging in RP, and the tools commonly used for their RP.

Descriptions of modalities for successfully engaging in RP (internal, verbal, written, group, peer and individual), though inconsistent across participants, largely mirror the literature for medical and allied health clinicians with a few exceptions (Clouder, 2000; Davey et al., 2020; Liddiard & Sullivan, 2017; Marshall et al., 2021; Reschke et al., 2021; Roberts & Kumar, 2020). Firstly, the interweaving of engagement in RP with workplace supervision, gave rise to reported barriers to engaging in RP (e.g. lack of supervisors; supervisor availability; or, perception of supervision being prioritised for junior staff). A study examining RP and supervision in occupational therapy however, has suggested that reliance on supervision to foster RP restricts ongoing development of reasoning skills, particularly opportunities for reflection-in-action and as such, should not be the sole modality for engaging in RP (Guy et al., 2020). A second point of difference relates to clinical documentation and RP. Similar to physiotherapists, SLPs associated clinical documentation as either an opportunity to reflect on their practice, problem solve, plan for the future or as a memory aid (Clouder, 2000). However, SLPs went on to describe including reflective writing within clinical documentation. They shared this made their reasoning transparent and provided an efficient strategy for time management. This finding was unexpected in the workplace. However, use of written reflections in order to make reasoning overt for educators, is well documents in the student realm. Therefore, it could be expected that some clinicians have transferred and then refined this practice to their workplace (Caty et al., 2015; Cook et al., 2019).

The barriers SLPs described when attempting to engage in RP are largely consistent with the literature from other health professionals (Clouder & Sellers, 2004; Dunne et al., 2021; Law & Shafey, 2019; Liddiard & Sullivan, 2017; Mamede & Schmidt, 2005; Roberts
& Kumar, 2020; Thompson & Pascal, 2011). Firstly, the SLPs in the current study shared that, while sometimes difficult to pinpoint, RP needs to be visible and discussed amongst colleagues and leadership teams. Next, SLPs described a common barrier of time for RP. This was realised in three reoccurring descriptions, and largely intertwined with their perceptions about the role the work environment and leadership teams play in fostering RP. SLP perceived that time was not protected for RP; that RP should be given up in favour of working with clients and that RP was protected for new graduate or less experienced SLP clinicians only.

The perception by SLPs, that in general, leadership teams or the workplace environment did not support engaging in RP, is consistent with past studies in the health setting (Clouder & Sellers, 2004; Liddiard & Sullivan, 2017). However, there is limited research about RP from those in leadership positions (Raven, 2014). Rather, the pivotal role of workplaces in fostering opportunities for RP is highlighted, and RP activities are seen as a way to overcome barriers in accessing formal supervision (Brookfield, 1993; Marshall et al., 2021; Thomas & Isobel, 2019). In the current study, three participants were or had been in leadership positions, and their perspectives were similar to that of the academic leadership study, that RP is beneficial, and in fact, was perceived to enhance patient care (Raven, 2014). There is limited evidence from the allied health, nursing and education literature, or governing bodies of the professions that support SLPs’ perception that RP activities are protected and prioritised for new graduates or early career SLP. However, Mamede & Schmidt (2005) have suggested, that experienced physicians do in fact engage in less RP as their experience increases, or, if their workplace does not promote evidenced-based practice. This again indicates the pivotal role workplaces play in RP.

To overcome the barriers related to engaging in RP, SLPs generated three influences that would enable participation in effective RP in the workplace, are consistent with
recommendations for practitioners and nurses (Liddiard & Sullivan, 2017; Marshall et al., 2021). SLPs want to be in control of how and when RP occurs. SLPs want the support of their organisation, by allocating time to engage in RP, but wanted this to be flexible and without direct oversight. Experienced SLPs suggested when direct oversight was involved, RP felt tokenistic, and thus lessened their learnings and willingness to engage.

Finally, the descriptions utilising social and digital media platforms as resources to support engagement in RP was of note, and appears to be an emerging area of research (Brown, 2010; Rukavina et al., 2021). This highlights the resourcefulness of SLPs and reinforces SLP preferences for individualised engagement in RP activities.

5.6.3 RP evolves as SLP progress through their careers

The third theme focussed on SLP descriptions of RP evolving across the SLP career and their desire to engage in RP activities across their career. No other study has suggested that SLP have different needs related to RP as they progress through their careers. Studies examining RP for allied health student have however, suggested reflective practice abilities develop for those with less experience or student clinicians (Cook et al., 2019; Dunne et al., 2019; Gadsby, 2022; Williams, 2020). To extend on these findings, in the current study SLPs generated two stages for RP, from seeking or confirming knowledge as an early career SLP, to challenging their thinking with peers and selfcare practices as an experienced practitioner.

Engagement in RP in the new graduate (or CF) year and early career was described as formal with protected time and largely via supervision practices and appeared highly valued by SLPs. Here the focus of engaging in RP for SLPs early in their careers was on learning, gaining technical knowledge and decision making and is similar to the literature (Caty et al., 2009; Godínez Martínez, 2022; Kramer, 2018; Marshall et al., 2021; Schön, 1983; 1987). In contrast, SLPs with more than five years’ experience appeared to move away from a focus of
gaining knowledge through RP and the common use of “reflection on action” described by Boud et al., (1985) and Schön (1983, 1987). These SLPs described engaging in RP to problem-solve unfamiliar or unique situation, communication with team members or workplace systems. This supports the use of RP for novel situations such as COVID-19 and enhancing broader workplace practices. (Caty et al., 2016b; Dean, 2020; Thomas & Isobel, 2019; Walpola & Lucas, 2021). Furthermore, SLPs with more experience appeared to utilise RP with peers to challenge their thinking, and to understand a different perspective by examining their bias with others. These strategies are supported by recommendations in the physiotherapy realm (Clouder, 2000).

5.6.4 Implications for clinical practice

SLP clinicians were consistent in their preferences for RP describing “I know what works for me” and yet surprisingly also described resources for RP that largely dated back to their university experiences. With this in mind, an opportunity to reframe RP in the workplace for both SLP and leadership teams. For example, a fit for purpose RP education package for SLPs in the workplace could be developed, to offer opportunities to discuss and share differing RP modalities, models and frameworks and identify opportunities for RP in the workplace (Mann et al., 2009; Ziebart & Macdermid, 2019). Likewise, introducing and evaluating new RP models that are fit for purpose for the workplace may support clinicians in identifying what works for them, as well as offering new approaches for RP. Two such examples include; The Refractive Model (King, 2021) that has a focus on equity and inclusivity, and Values Based Reflective Practice® (Bunniss, 2021a, 2021b) that emphasizes regaining hopefulness for individual work roles.

In regards to SLPs supervising students, SLP described a willingness to engage students in RP while on field placement. They described RP opportunities as discussions about clinical topics, using reflective questioning to discuss reasoning and recommendations
for clients. Alongside this, SLP also described utilising the student’s current knowledge of university led RP resources or left students to complete RP independently. Similar to the study by Dunne et al. (2021), few SLP described overtly modelling RP, or discussed how or why they engage in RP in the workplace with their students. No participants described discussing the purpose of RP with students. In contrast to this, Mann and Walsh (2015), suggest that in order to effectively engage in RP, students, practitioners and educators need to move beyond RP tools, to examples and direct modelling of what RP looks like in practice. This should include, how to engage in RP, and why RP is valued in the workplace. This will move RP beyond university led experiences and into the workplace, and aims to maximise the connections from theory to practice for RP (Dunne et al., 2021).

5.6.5 Limitations and future directions

The current study has a number of limitations that should be addressed in future studies. Firstly, the majority of SLPs interviewed were from one university which is the same as the first author’s university. While this was largely due to sampling procedures employed for data collection, future directions should focus on seeking perspectives from SLPs from varying university programs in order to examine differing perspectives on teaching RP and mitigate any potential bias as a result of familiarity with university or interviewer. Second, one third of participants interviewed presented with less than 5yrs experience in the workplace. Future directions should aim to better stratify participants based on years of experience to capture more views of experienced SLP or perhaps pivot to a focus on SLP in leadership positions in order to examine RP at a leadership level.
5.7 CONCLUSIONS

The findings in the qualitative in-depth study on SLP perspectives of RP in the workplace indicated an overall consensus across SLP participants that RP is both valued and utilised in the workplace and is an important component to support problem-solving, continuous improvement, engagement with peers, and selfcare. Participants described a number of common factors that influenced their ability to engage in RP successfully in the workplace and identified common barriers of time and perceived a lack of support from their organisation or leadership teams to engage in RP. SLPs have differing reasons and methods for engaging in RP as they progress through their career. Appreciation of the SLP perspectives of RP in the workplace will support SLPs to advocate for and discuss RP in the workplace. Furthermore, it will support educators of SLP students to in turn support student understanding and value of RP and enhance RP teaching.
CHAPTER SIX: SUMMARY, LIMITATIONS AND FUTURE DIRECTIONS
This thesis investigated the use of RP activities with SLP students and practicing clinicians. The primary purpose was to investigate the use of reflective practice activities to support the assessment and development of WRP skills, understand student perceptions and learning as a result of RP, and understand SLP engagement in RP in the workplace.

Chapter one discussed definitions of RP, terms associated with RP and initial models of RP. Furthermore, chapter one introduced how and why RP activities are undertaken in clinical programs and the workplace. This chapter highlighted that, specific to SLP, there were a number of opportunities to examine the impact of time and clinical experience on WRP activities with SLP students, as well as determine their perspectives as related to RP in a detailed manner across the degree program. Furthermore, there was an opportunity to investigate practicing SLP views about RP. The following chapters sought to examine those opportunities in detail.

Chapter two examined SLP students’ demonstration of breadth of WRP across the clinical education program using a cross sectional and repeated measures design. This chapter highlighted that this group of SLP students exhibited significant change in breadth of WRP across the degree program. Statistical models revealed that there was a statistically significant association between time (i.e., professional year of the program) and likelihood of demonstration of breadth of reflection for the lower-level reflective element of “attend” and higher-level reflective element of “re-evaluate”. Final professional year students exhibited significant enhancements in the higher-level elements (e.g. “premise”) compared to first professional and second professional year students. This study is the first of its kind to illustrate how breadth of WRP abilities for SLP students change across the degree program. These results offer support for the use of WRP across clinical programs.
Chapter three studied the impact of time on depth of WRP with the aim of exploring a possible relationship between depth of WRP and clinical competency for SLP students. Here, depth of WRP, a judgement of RP overall ability, was assessed using a modification of Plack et al.’s (2005) coding schema. SLP student clinical competency was assessed using Competency Assessment in Speech Pathology (COMPASS®) (McAllister et al., 2013a). The statistical model revealed a statistically significant association of time and development of depth of WRP for final professional year students only. No association was identified between depth of WRP and clinical competency. The findings suggested that a one-off judgement of WRP depth may be useful for supporting judgements of RP ability for final year students, but less useful if the goal is to foster student development of RP skill of all SLP students.

Taken together, chapters two and three highlighted several points to consider when aiming to assess and develop WRP skills of SLP students. For educators, the findings suggest that they can use the coding framework for breadth of WRP to teach, assess, and identify use of specific WRP skills. Additionally, educators could aim to foster SLP student skill development of WRP through formative feedback and reflective questioning. For students, the findings describe how WRP can offer opportunities and time for engaging in purposeful examination of self and measuring clinical skill development. This practice is in addition to feedback provided by educators, clients, or peers. Additionally, judgements of WRP as part of clinical placement activities provide an opportunity for an observable behaviour surrounding RP. Therefore, while depth of WRP cannot be used to predict clinical competency, depth of WRP could be used to inform judgements of RP as part of clinical competency measures (e.g. COMPASS®, (McAllister et al., 2013a)).

Chapter four examined the SLP student perspective utilising a validated and reliable assessment tool - the Reflective Practice Questionnaire, or RPQ (Priddis & Rogers, 2018)).
This study had two aims: (1) to investigate perceptions of RP capacity and outcomes of engaging in RP in three groups of SLP students, using a validated and reliable instrument, and (2) to examine patterns of perceptions of RP capacity and outcomes of engaging in RP across SLP students via hierarchical clustering (Manhattan approach). Results indicated that, regardless of placement experience grouping (novice, intermediate or entry level), the majority of SLP students perceived they had high levels of reflective capacity. In general, SLP students increased their perception of their RP abilities as their clinical experience increased, with similar findings across all five of the six subsets. This finding was significant for three subsets of the RPQ (communication confidence, confidence general and job satisfaction). Furthermore, three patterns or groupings were identified as a result of hierarchical clustering (reflective and confident group, non-reflective group and a low confident group). The results provided quantitative data to support the teaching and use of RP activities with students in clinical degrees. This suggests that students who are purposely taught and exposed to RP, perceive engaging in RP activities has a positive impact on their clinical practice. Use of this questionnaire in the SLP clinical program also offers educators a further tool that maybe useful to identify students or groups of students who would benefit from tailored RP activities (e.g. activities to target confidence or feelings of stress when working alongside clients).

Chapter five revealed the perspectives of practicing SLPs, finding that they too value RP regardless of their employment sector. This study highlighted SLPs use RP to support problem-solving, maximize confidence, and enhance job satisfaction and resilience. SLPs wanted flexibility in how and when they engaged in RP. They described verbal discussion with a peer, internal thought and WRP as common RP modalities. They identified the barriers of time and a perceived lack of support from their organization as restricting their ability to undertake RP. Additionally, the study highlighted that SLPs have observed a change in
engaging in RP as they have progressed in their careers. A key factor was that SLPs reported they appreciated the relationships with others as contributing positively to RP. Furthermore, this qualitative investigation offered insights into the tools and resources SLPs employed for both themselves and SLP students on clinical placement. Here, SLPs were largely utilising resources gained during clinical education training. This finding suggests an opportunity to advocate for fit-for-purpose RP education and tools for the SLP workforce, in order to better tailor RP resources to the needs of the individual and their differing workplace environments. Finally, this study offered educators and students insights into how and why SLPs choose to engage in RP activities. Such insights will be useful when designing RP activities and when advocating for the use of RP activities in SLP clinical programs.

Overall, the research described in this thesis offered evidence to support the use of RP activities in clinical programs. Investigations with both students and practicing SLPs suggest that RP is a valued learning tool.
6.2. LIMITATIONS

The studies contained in this thesis have many implications for both clinical education and clinical practice. However, there are a number of factors that limit the application of these findings. Limitations have been discussed as part of the findings for each chapter. Here, limitations are discussed in the context of the overall thesis and will focus on three methodological variables: sample size, WRP instruments, and assessment of usual practice for RP in the SLP clinical program.

6.2.1 Sample size

The sample size and sample size attrition in chapters two and three, and limited sample of participants in their entry level placement in chapter four, represents a significant limitation for generalising each study’s findings. Issues with small sample size were particularly apparent in chapter four. For example, in chapter four, it is unlikely that the sample of nine participants in the entry level placement grouping who completed the RPQ fully represent the perspectives of an entry level cohort (ranging from 30 to 50 students at the candidate’s university). Therefore, it is possible that the hierarchical clustering groupings generated in this thesis do not account for all combinations of perspectives about reflective capacity, and clinical and professional skills. Inclusion of more participants in the entry level grouping would likely improve the accuracy of the groupings, allowing for better tailoring of support for students in each grouping. Furthermore, participants in chapter four were enrolled in both undergraduate and postgraduate master’s level SLP programs. Analysis of the data across the different programs could have been separated to determine if a difference in perception exists in between the student groups. This analysis was considered for chapter four, but ultimately rejected due to limited sample size in the entry level grouping.
It is also possible that the participant attrition described in chapters two and three skewed both the patterns of breadth of reflection elements and depth categories reported in this thesis. This may be due to the timing of data collection (e.g., start versus end of a semester) and/or the repeated measures nature of the studies. As discussed in chapter one and two, in as little as six weeks SLP in the second professional year students were predicted to demonstrate higher levels of reflective depth over time and more higher-level elements over time (Cook et al., 2019). Yet, in chapters two and three, participants in the second professional year grouping were found to be the most variable group over a longer period of time. While this finding is in keeping with descriptions of variability for reports of clinical competency and another mixed methods investigation into WRP for SLP students, for this mid-level group of SLP students it is at odds with the 2019 study findings (Cook et al., 2019; Dunne et al., 2019; McAllister et al., 2013b). Furthermore, while the statistical models utilise employed were able to successfully manage the missing data, it may be that the participants who did not complete their written reflection represented some of the students who may have been judged as critical reflectors. For this reason, follow up repeated measures studies with enhanced systems for overseeing data collection are recommended (e.g., a third party to remind participants in real time to write the critical reflection, and educators to provide timely feedback to the student).

6.2.2. Instruments for assessment of WRP skills.

The instruments for assessment of WRP form the cornerstone of data analysis in chapters two and three. The assessment tools for breadth and depth of WRP have generated some discussion in chapters two and three. The data analysis of WRP were obtained using a modified coding framework for breadth of WRP and a subsequent “if-then” rule to generate depth category for WRP. As discussed in chapter two, the breadth instrument was chosen for its acceptable reliability and ability to compare to other SLP student studies (Cook et al.,
2019; Hill et al., 2012; Plack et al., 2005). However, this tool is not without its challenges, as also reported in past studies. These challenges included the time taken to train reliable raters and time taken to complete the content analysis for each WR. Both of these aspects pose limitations for this instrument’s use in clinical practice in its intended format (Cook et al., 2019b; Hill et al., 2012). While past studies have suggested that perfect agreement is not achievable due to the type of content being evaluated, and limited instances of specific elements, nonetheless the variable inter-rater agreement across higher level elements (e.g. reflection-in-action, content, re-evaluate) suggest that the findings should be interpreted with this in mind (Cook et al., 2019; Garrity et al., 2019; Plack et al., 2005; Viera & Garrett, 2005). In comparison, the strong intra-rater agreement scores obtained across all elements suggest that SLP utilizing this instrument independently with their students can feel confident in their judgements of WRP skills. In an effort to reduce time taken for assessing WR, an “if-then” rule was created by Cook et al., (2019) and employed utilisein the current study. Future use of this tool in clinical education programs is only recommended after validation of this approach, including reliability measures that compare educator judgements versus the “if-then” rule judgements.

6.2.3 Usual practice

A further limitation impacting studies describing in chapters two, three and four was the methodical choice to utilise data collected as part of usual practice for the clinical education program. This choice was made purposefully to aid the goal of reporting on SLP students’ RP abilities while engaged in clinical practice, as well as participant recruitment. While this choice has meant the findings are highly relevant to the candidate’s clinical education program, this choice did present a number of limitations that have been discussed throughout the thesis. Firstly, the RP education provided, meant that all students had some understanding of RP, and their exposure to both RP activities and knowledge about RP
increased alongside their clinical experience (see Appendix C for RP activities utilised as part of usual practice). It is difficult to tease out the impact of RP education on both SLP student perceptions and WRP skills. Furthermore, participant knowledge of RP may have also contributed to the findings of chapter four and chapter five. As discussed in chapter four, SLP students perceived higher levels of reflective capacity compared to other health professional students, and for chapter five, the majority of participants were graduates of the candidate’s university (Rogers et al., 2019).

Secondly, the choice to proceed with examining usual practice meant that unlike the Cook et al., (2019) study, the type, amount, and timing of feedback provided to students about their WR could not be controlled for, and was completed by a larger number of educators. Rather, educators were encouraged to utilise the modified coding framework, to provide a minimum of two pieces of feedback on the process of WR undertaken by the students, and provide this before the student SLP submitted their next WR (see appendix A for the modified coding framework). Examination into the feedback provided to SLP students in relation to their RP activities, while difficult to capture, is a useful future research direction.

Thirdly, the choice of usual practice impacted the reflective questions provided to students at specific timepoints for WR discussed in chapter two and three. Specific questions for all SLP students in each year group, at each of the four timepoints were the same, but were different across year groups (see appendix B for reflective questions utilised in chapters two and three). The impact from this methodological choice may be that dependent on the questions asked, SLP students had more or less opportunities to be assessed on presence of specific breadth elements. This serves to highlight that choice of reflective questions as well as timing of reflective questions is important, and requires further investigation in a systematic manner.
Finally, as part of usual practice for this thesis, the students gained clinical placement experiences that were varied and only two of six clinical placements were whole of cohort experiences for a full student group (e.g. second professional year time one were all hospital placements). In support of this approach, is the knowledge that SLP students develop in their clinical competency regardless of clinical placement order (Sheepway et al., 2014). However, the possible impact of sessional versus block placements on WRP skills is discussed in chapter two. It is acknowledged, however, that the types of clinical experiences and environments may also give rise to differing reflective experiences, for differing students, and thus have a positive or negative impact on the reflective process SLP students undertake, or their perception of reflective practice on their learning.
6.3  FUTURE DIRECTIONS

Chapters two, three, four and five each highlighted a number of useful future directions for research in WRP and SLP. The following section presents future directions in the context of the overall thesis, and in support of steps required to continue to promote the inclusion of empirical evidence when embedding RP activities into clinical education programs for SLP students.

6.3.1  Provision of feedback

Research suggests that feedback may act as a catalyst for creating the opportunity for the student to demonstrate higher reflective skill in writing and motivate students’ ongoing engaging and perceived value gained from RP activities, and therefore makes it a worthwhile future direction to examine systematically (Aronson et al., 2012; Cook et al., 2019; Dunne et al., 2019). Formative feedback can serve as a teaching tool when assessing student’s reflective practice (Hancock & Brundage, 2010). To date research on the feedback given to students on their RP skills has been largely limited to seeking student perspectives on the feedback given or as part of an assessment process (Freeman, 2001; Hancock & Brundage, 2010). One such future direction could utilise the breadth coding framework. Clinical educators could use this assessment tool to make recommendations for what feedback to offer that will aim to move students into the next depth category or display specific breadth elements in their next WR. The addition of formative feedback options alongside the breadth coding framework will also require a better understanding of the type and amount of feedback SLP students’ value and perceive they learn from.

6.3.2  Examining questions for RP

The limitations discussed highlighted the importance of examining questions posed to SLP students and practicing SLP to support their engagement in RP activities. The inclusion
of questions has been proposed as beneficial to support and extend student reflective abilities or demonstration of reflective skills (Cook et al., 2019; Mezirow, 1991). For the current thesis, in keeping with Cook et al. (2019), the reflective questions utilised as part of chapter two and three were reviewed in an effort to ensure SLP students had an opportunity to demonstrate all breadth elements in the coding framework as a result of answering each question (see Appendix B for reflective questions utilised for chapter two and three). Yet, the findings of chapter two and three suggest that the questions posed may also be limiting SLP student demonstration of RP skill. This was noted to have a particular impact for final year SLP students, which is evidenced by the limited instances of higher-level breadth elements (e.g. premise, content, reflection-in-action, and re-evaluate). Furthermore, SLPs in chapter 5 suggested that the abilities of the person asking the question also contributed to how reflective a question was. This finding is echoed by a study examining questions educators posed to first and final professional year SLP students as part of their “debrief” following a clinical interaction. Here, SLP educators typically posed questions described as “low level” such as yes-no questions and information seeking questions (Cook et al., 2019). Overall, educators in the study did not tailor their questions to the clinical experience of the SLP students, except for synthesis questions (questions that require the student to combine ideas into a statement, plan, product that is new for the student) and use of more rhetorical questions (a statement posed as a question). Those two question types were asked more often to final professional year students (Cook et. al 2019). Therefore, an opportunity exists to examine what makes a question reflective? What questions are better posed to final year students? Or, what questions are useful for all students to address? This could offer educators and students a list of questions to choose from for both WR and reflective discussions, as well as different questions based on SLP student clinical experience.
6.3.3 Analysis of content for WR

Chapters two, three and four largely focussed on the process of reflection undertaken by SLP students. This was primarily in response to evidence that suggests assessment of process rather than content of RP, aims to ensure students feel safe to share content that is important to them and, for example, will not be judged on their assumptions and bias. Furthermore, this focus aimed to mitigate student report of writing reflections for marks only (Bourner, 2003; Cook et al., 2019; Dunne et al., 2019; Plack et al., 2005). SLPs in chapter five were able to clearly articulate the content that they reflected on or triggered them to reflect. This knowledge is useful to share with SLP students, to highlight the different experiences that SLP reflect on. In support of providing students with education surrounding topics of reflection, a future direction of this thesis will re-examine the WR data utilised in chapter two and three through a content analysis lens as well as conduct interviews with past of present SLP students. Such investigations have been completed with nursing, medical students and revealed topics of uncertainty and acceptance of this over time, communication and collaboration with colleagues, clinical knowledge and skill development, and examination of feelings (McNeill et al., 2010; Naber et al., 2014; Nevalainen et al., 2010).

Preliminary examination into the content of SLP student WR undertaken by the candidate (See page v: Cook & Tillard, 2019) suggests this could be a useful future direction. Re-examining the content discussed in WR may create further safety for SLP students by normalising and sharing the content discussed. Additionally, this will contribute to suggestions that RP process and content needs to be discussed by SLP, educators and students in order to normalise its inclusion beyond the student experience (Dunne et al., 2021; Walsh & Mann, 2015).
6.3.4 Tools for RP activities

The thesis has presented a number of different assessment tools for RP, as well as highlighted reflective questioning tools and a purposeful and structured framework for engaging SLP students in RP activities alongside their clinical placements. Chapter five highlighted that SLPS in the workplace were largely utilising the same tools and questions first introduced by their university program. While for some, this was identified as being related to time constraints and familiarity, an opportunity exists for introducing SLP to RP tools and activities that meet their workplace needs and differing levels of experience.

Finally, examining tools for RP for SLP students and practicing SLP in the context of the newly established Professional Standard – Reflective Practice is a future recommendation. The Professional Standards have been adopted in Australia and replace the CBOS (Speech Pathology Australia, 2011, 2020). This change to Professional Standards and inclusion of a standard dedicated to reflective practice, signals the pivotal role, that associations such as SPA believe RP plays in supporting effective practice as an SLP. To date, the NZSTA has not yet officially adopted the Professional Standards, however, the candidate’s clinical program is informally looking that the differences a possible adoption of the Professional Standards may lead to for clinical education assessment practices, which include RP. Furthermore, examination of any future RP activities and education practises through the Professional Standards lens is a further useful direction to maximise the generalisability and future proofing of the RP education tools.


6.4 CONCLUSIONS

This thesis provides empirical research in support of engaging SLP students in RP activities across SLP clinical education programs. This body of work, specific to SLP, adds to and extends the existing RP evidence for medical, nursing, and allied health clinical programs. Together, this thesis provides evidence that: (1) SLP students demonstrate enhancements in WRP skill as clinical experience increases; (2) SLP students value and perceive that RP supports their clinical practice more as their clinical experience increases; and (3) practicing SLPs not only use and value RP as part of their clinical practice, but perceive their needs surrounding clinical practice change as their clinical experience increases. Furthermore, this thesis has provided a platform for the refining the tools utilised to assess, develop, and support the engagement of SLP students and clinicians in RP activities. Ultimately, it is hoped these studies, and the future directions generated as a result of this thesis, will contribute to the scholarship of teaching and learning to support the use of RP activities with SLP students and clinicians.
REFERENCES


McAllister (Eds.), *Qualitative Research in Communication Disorders. An introduction for students and clinicians* (pp. 193–212). J & R Press Ltd.


**APPENDIX A: CODING SCHEMA FOR WRITTEN REFLECTIVE PRACTICE, MODIFIED FROM PACK ET AL. (2005)**

(*FIRST MODIFICATION FOR COOK ET AL. 2019, SECOND MODIFICATION BY COOK, MESSICK AND MCAULIFFE 2020*)

<table>
<thead>
<tr>
<th>No.</th>
<th>Element (code)</th>
<th>Description of breadth elements</th>
<th>Key words/Phrases</th>
<th>Sentence example</th>
<th>What it is not</th>
<th>Co-occurring elements</th>
<th>Guiding question where element may be identified</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Returns to the experience (RETURN)</td>
<td>Describes the experience. Narrative retell/replay of the session. (“in some detail” Plack et al. 2005.)</td>
<td>“Today’s session”</td>
<td>“Today we did x, y, z today”</td>
<td>Listing items with no description of event</td>
<td>All can co-occur</td>
<td>What was your overall impression of the session?</td>
</tr>
<tr>
<td>2</td>
<td>Attends to feelings (ATTEND)</td>
<td>Acknowledges and begins to work with feelings. Needs to do more than state an emotion or feeling – give the why – some discussion of impact of emotion on situation (Plack et al. 2005).</td>
<td>Emotions e.g. nervous, sad, happy, excited, Feelings – Tired, shy, interest</td>
<td>“I felt sad because…” “I felt nervous because…”</td>
<td>“I was nervous for this session” – no why given.</td>
<td>All can co-occur</td>
<td>What emotions can you remember feeling during the session? Did you observe or think about client emotions or behaviors during the session? What were your thoughts and feelings at the time of the incident?</td>
</tr>
<tr>
<td>3</td>
<td>Reflect on</td>
<td>Occurs after the action has been completed.</td>
<td>&quot;Learnt/learning&quot;</td>
<td>“I did x,y,z and from this I learnt…”</td>
<td>Describing the event</td>
<td>Must co-occur with either:</td>
<td>What things went well during the session and what did you</td>
</tr>
</tbody>
</table>

**Breadth** = made up of reflective practice elements that can be identified at the word, sentence or paragraph level. Elements are organized by level of RP with 1 = lowest level of RP.
<table>
<thead>
<tr>
<th></th>
<th>Reflect for action (RFA)</th>
<th>action (ROA)</th>
<th></th>
</tr>
</thead>
</table>
| 4 | Occurs before being faced with the situation; begins to plan for the future. | “Next time/session”  
“I should have”  
“in the future”  
“I will” | “I did x, y, z and next time I will…” |
|   | Describing the event | Or  
Only describing what learnt (with no description of the event) | Must co-occur with either: return, attend |
<p>|   | What things went well during the session and what did you learn from these? | What things went wrong during the session and what did you learn from these? | What things went well during the session and what did you learn from these? |
|   | What have you learned e.g. about yourself, relationship with others, the SLP task, organizational policies and procedures? | What have you learned e.g. about yourself, relationship with others, the SLP task, organizational policies and procedures? | What do you need to learn or find out about before the next session? |
|   | What future learning needs have you identified as a result of this incident? How might this be achieved? | What future learning needs have you identified as a result of this incident? How might this be achieved? |</p>
<table>
<thead>
<tr>
<th></th>
<th>Process (PROC)</th>
<th>Describes the strategies/clinical techniques used or available for use and the impact/ or reason for use.</th>
<th>Cues or strategies e.g. stopwatch, cheat sheet, role play, questioning techniques</th>
<th>“I used x cues to ...” “I reminded the patient to use his loud voice” “I could have used my information sheet to…”</th>
<th>Listing strategies/clinical techniques with no explanation of the why/what used for. General mention of &quot;strategies&quot; or &quot;processes&quot; - need to be specific.</th>
<th>Can co-occur with all other codes. This is a sig. correlation between premise and process co-occurring.</th>
<th>What things went wrong during the session and what did you learn from these? Did you observe or think about client emotions or behaviors during the session? Did the session follow your plan? Why or why not? What do you need to learn or find out about before the next session? What are the areas you feel you need to develop further about yourself and your communication?</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Reflect in action (RIA)</td>
<td>Occurs while in the midst of an action; on the spot decisions or experiment. The impact of the change will be described. <em>Distinguishing feature: the immediate significance for action. Ask yourself: did they make a difference to the</em></td>
<td>“During” “Change” “In the middle/moment” “and this meant:”</td>
<td>“In the moment I changed…” “I decided to change xx during the session as… or...the result was”</td>
<td>Describing what learnt (ROA) Describing what to do next time (RFA)</td>
<td>Must co-occur with either: Return, attend</td>
<td>What things went wrong during the session and what did you learn from these? What things went well during the session and what did you learn from these?</td>
</tr>
<tr>
<td>7</td>
<td>Content (CON)</td>
<td>situation at hand? (Schon 1987). Explores the experience from another perspective (beyond description) - for example patient, client, family or supervisor. New understanding of an event. (Updated from Plack et al. 2005, similar to Hill et al., 2012 definition.)</td>
<td>“point of view” “different beliefs” “Another way I could look at this is…” “From my client’s/supervisor/physio’s point of view…” &quot;I think the patient felt…this was because… The result was/this meant I needed to…* A statement of emotions/feelings and the impact this had (attend) E.g. “I thought about how I would feel if I had 5 students observing me and know that I wouldn’t like it at all!”</td>
<td>Can co-occur: Return likely as they describe the situation Re-evaluate</td>
<td>What things went wrong during the session and what did you learn from these? Did the session follow your plan? Why or why not? What were the responses of the other key people to this incident? If not known, what do you think they might have been?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 8 | Re-evaluates (RE-EVAL) | Reappraises the situation vis-à-vis past experiences. New understanding of an event. | “last time/patient...this time” "I could have...this would have" “In the past I have done x, I used this again and the result was…” "I used my previous knowledge from clinical notes at this hospital to help orientate myself on how to set these Stating textbooks, clinical notes, lecture notes e.g. “I used my lecture notes to help me know what to expect” – needs to be specific and give the comparison from | Can co-occur: Return likely as they describe the situation Content. | What theoretical knowledge did you use or could have used during this session? What past experiences did you use or could have used during this session? Are there ways in which this incident has led (or might lead to) changes in how you think,
|   | 9 | Premise (PREM) | Recognizes and explores own assumptions, values, beliefs and biases. | “my opinion” “my family values” “assumption” “belief” “before I met the patient I thought...instead” | “I had thought all clients/parents would want to… As this is the way I would do it... however now I can see another side/understand why this is important for them which is…” | Description of the assumption/value/bias/belief given – no change/confirmation of perspective given | Can co-occur: Return likely as they describe the situation. This is a sig. correlation between premise and process co-occurring. | feel or act in particular situations? What are your thoughts and feelings now about this incident? What theory (or theories) has (or might have) helped develop your understanding about some aspect of this incident? What emotions can you remember feeling during the session? What impact do you feel your own assumptions, values, beliefs or biases may have had on the session or observation? What are your thoughts and feelings now about this incident? What are the values and ethical issues which are highlighted by this incident? |
## APPENDIX B. GUIDING QUESTIONS UTILISED FOR WRP

<table>
<thead>
<tr>
<th>Set 1</th>
<th>Set 2</th>
<th>Set 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What happened?</strong>&lt;br&gt;Brief summary of what you did, what you talked about, any new experiences</td>
<td>What was your overall impression of the session?<em>&lt;br&gt;What things went well during the session and what did you learn from these?</em>&lt;br&gt;What things went wrong during the session and what did you learn from these?<em>&lt;br&gt;What emotions can you remember feeling during the session?</em>&lt;br&gt;What did you observe or think about client emotions or behaviours during the session?<em>&lt;br&gt;Did the session follow your plan? Why or why not?</em>&lt;br&gt;What theoretical knowledge did you use or could have used during this session?<em>&lt;br&gt;What past experiences did you use or could have used during this session?</em>&lt;br&gt;What do you need to learn or find out about before the next session?<em>&lt;br&gt;What impact do you feel your own assumptions, values, beliefs or biases may have had on the session or observation?</em>**&lt;br&gt;*McAllister &amp; Lincoln (2004) ** Plack et al. (2005)</td>
<td><strong>Account of the incident</strong>&lt;br&gt;What happened, where and when; who was involved?&lt;br&gt;What was your role/involvement in the incident?&lt;br&gt;What was the context of this incident, e.g. previous involvement of yourself or workplace staff with this client/client group?&lt;br&gt;What was the purpose and focus of your contact/intervention at this point?&lt;br&gt;<strong>Initial response to the incident</strong>&lt;br&gt;What were your thoughts and feelings at the time of the incident?&lt;br&gt;What were the responses of the other key people to this incident? If not known, what do you think they might have been?&lt;br&gt;<strong>Issues and dilemmas highlighted by this incident</strong>&lt;br&gt;What practice dilemmas were identified as a result of this incident?&lt;br&gt;What are the values and ethical issues which are highlighted by this incident?&lt;br&gt;Are there any implications for your collaborations with any of the following?&lt;br&gt;Clients, Their family members, Peers, Supervisors, SLP clinicians, Inter-disciplinary team members&lt;br&gt;<strong>Learning</strong>&lt;br&gt;What have you learned e.g. about yourself, relationship with others, the SLP task, organisational policies and procedures?&lt;br&gt;What theory (or theories) has (or might have) helped develop your understanding about some aspect of this incident?</td>
</tr>
<tr>
<td>Question</td>
<td>Answer</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>What future learning needs have you identified as a result of this</td>
<td></td>
<td></td>
</tr>
<tr>
<td>incident? How might this be achieved?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What were the outcomes for the various participants?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there ways in which this incident has led (or might lead to)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>changes in how you think, feel or act in particular situations?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What are your thoughts and feelings now about this incident?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Crisp et al., 2005)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### APPENDIX C. CLINICAL EDUCATION PROGRAM OF LEARNING FOR REFLECTIVE PRACTICE BY YEAR GROUP AND SEMESTER
(X INDICATES TYPE OF RP ACTIVITY COMPLETED)

<table>
<thead>
<tr>
<th>Professional year</th>
<th>First Semester</th>
<th>Second Semester</th>
<th>Third/ Final Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One</td>
<td>Two</td>
<td>One</td>
</tr>
<tr>
<td></td>
<td>Two</td>
<td></td>
<td>Two</td>
</tr>
</tbody>
</table>

#### Reflective practice (RP) education

<table>
<thead>
<tr>
<th>Activity</th>
<th>First Semester</th>
<th>Second Semester</th>
<th>Third/ Final Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full class teaching: group reflections (what went well, what was surprising, what would you do next time), dialogic teaching, Journal article discussion: topic RP</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Mentoring / Peer learning</td>
<td>Mentee</td>
<td></td>
<td>Mentor</td>
</tr>
<tr>
<td>Reflective discussions with Clinical Educator pre and/or post clinical interactions (small group or one-on-one)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Verbal RP group. 1 per week. 50-minute duration</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Written RP. 1 per week. Formative feedback given</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Written RP: Assessment. Summative feedback given.</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Type and sequence of Questions utilised for written RP*</td>
<td>Set 1</td>
<td>Set 2</td>
<td>Set 2, 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Set 2, 3</td>
<td>Set 2</td>
</tr>
</tbody>
</table>

#### Clinical practice requirements**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>First Semester</th>
<th>Second Semester</th>
<th>Third/ Final Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation placement</td>
<td>12 weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part time placement</td>
<td>12 weeks 6 weeks 12 weeks</td>
<td>12 weeks 6 weeks</td>
<td></td>
</tr>
<tr>
<td>Block placement: full time</td>
<td>5 weeks</td>
<td></td>
<td>12 weeks</td>
</tr>
</tbody>
</table>

*See Appendix B for full list of questions utilised as part of standard practice for the clinical education program
An observation placement is one whereby students are not actively involved in SLP, a part-time placement is completed in conjunction with academic teaching requirements, a block placement is a full-time placement (i.e. 40 hours per week) with no academic teaching requirements (McAllister et al., 2013b).
APPENDIX D. THE REFLECTIVE PRACTICE QUESTIONNAIRE  
(Priddis & Rogers, 2018; Rogers et al., 2019)

The response scale for items is: Not at all, Slightly, Somewhat, Moderately, Very much, Extremely.

Please rate your level of agreement for the 40 statements.

1. When reflecting with others about my clinical work I become aware of things I had not previously considered.

2. I have all the experience I require to effectively interact with clients

3. After interacting with clients I spend time thinking about what was said and done.

4. Sometimes after interacting with a client I feel exhausted.

5. I think I still have a lot of things to learn in order to improve my ability to work with clients.

6. I think I am good at creating a safe environment so that my clients feel comfortable enough to share information with me.

7. I think about my strengths for working with clients.

8. Sometimes I am unsure if my planning for clients is the best possible way to proceed.

9. During interactions with clients I recognize when my pre-existing beliefs are influencing the interaction.

10. My clinical work provides me with a lot of fulfilment.

11. I feel confident sharing my formulations with clients.
12. When reflecting with others about my work I develop new perspectives.

13. I think about my weaknesses for working with clients.

14. During interactions with clients I consider how my personal thoughts and feelings are influencing the interaction.

15. Sometimes I find interacting with clients to be stressful.

16. After interacting with clients I wonder about the client’s experience of the interaction.

17. I have all the practical skills I require to effectively interact with clients.

18. My clinical work means more to me than simply earning money.

19. I would like to learn new skills in order to improve my ability to work with clients.

20. Sometimes I am unsure if I am interpreting my clients’ needs correctly.

21. I am good at providing clear messages to my clients.

22. I have learnt everything I need to know in order to effectively interact with clients.

23. I think about how I might improve my ability to work with clients.

24. After interacting with clients I wonder about my own experience of the interaction.

25. I enjoy my clinical work.

26. During interactions with patients I recognize when my client’s pre-existing beliefs are influencing the interaction.

27. Sometimes I am unsure how to handle the needs of clients.

28. There are times when I feel distressed after communicating with clients.

29. I find that reflecting with others about my clinical work helps me to work out problems I might be having.
30. I desire more knowledge to improve my ability to work with clients.

31. Sometimes I am unsure that I properly understand the needs of clients.

32. I have all the theoretical knowledge I require to effectively interact with clients.

33. After interacting with clients I think about how things went during the interaction.

34. I am good at listening to my clients with genuine curiosity.

35. During interactions with clients I consider how their personal thoughts and feelings are influencing the interaction.

36. I critically evaluate the strategies and techniques I use in my work with clients.

37. There are times when I find myself wishing that I did not have to go to my clinical placement.

38. I gain new insights when reflecting with others about my clinical work.

39. The pressure to meet the needs of my clients can sometimes feel overwhelming.

40. I desire more experience to improve my ability to work with clients.
APPENDIX E. INTERVIEW TOPICS AND SAMPLE QUESTIONS

Discussion topics for reflective practice in the workplace:

- Experiences of reflective practice
- Emotions/feelings that arise from engaging in reflective practice
- Uses and modes of reflective practice
- Perceived value, prioritisation and barriers to reflective practice
- Resources used
- Comparison of RP in the workplace to student learning and RP
- Supervising students and reflective practice

Opening statement:

- Tell me about your experiences using reflective practice in the workplace

Sample questions to prompt discussion topics if not heard during discussion:

- How do you engage in reflective practice in the workplace?
- What do you use reflective practice for?
- What have you figured out for yourself about how best to engage in reflective practice in the workplace?
- What about [mode of reflection]? Tell me about your workplace experiences with this
- What stops you from engaging in RP in the workplace?
- Let’s dream a little, what would you need to overcome the barriers?
- Now let’s compare to when you were studying – can you think back to how/where/when you engaged in reflective practice?
- What about when you have SLP students with you, how do you engage in RP then?
### Appendix F. Coding dictionary for Reflective practice in the workplace

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How I reflect</td>
<td>Differing ways/modes people complete RP e.g. verbal, peer, groups writing, clinical notes, “solo”/alone/ in head, driving, formal (supervision) and informal (coffee chat), talking about the structure of their RP, timing and frequency of RP</td>
</tr>
<tr>
<td>2</td>
<td>Relationships are important for RP</td>
<td>Discussion about the people they’re talking to being important in some way e.g. who’s safe to talk to, friend, know their role, doesn’t have to be an SLP – who they are reflecting with, leadership influence, seeing others model RP</td>
</tr>
<tr>
<td>3</td>
<td>Uses of RP</td>
<td>Uses, value, focus/topics for engaging in RP. Descriptions of what people are using RP for e.g. benefits, different perspectives, better for client, am i making a difference, future planning, personalised therapy for client, celebrating wins, problem solving, or using emotions to initiate reflection e.g. feeling stressed/frustrated. Things people talk about/reflect on e.g. working with families, cultural safety, content matters, questions ask self to focus, “complex clients”</td>
</tr>
<tr>
<td>4</td>
<td>Resources and Professional development (PD)</td>
<td>Any mention of resources used for RP, tools / PD used to develop own or others skills in RP</td>
</tr>
<tr>
<td>5</td>
<td>Quote</td>
<td>Anything you think might be a good quote for publication</td>
</tr>
<tr>
<td>6</td>
<td>Barriers to engaging in RP (and any facilitators)</td>
<td>Things that people describe as stopping them from engaging in RP e.g., time, client comes first, organisation/service not supporting it, leader not supporting it, expectation but no time given or not protected, not a safe space. Stories might include how they overcome the barriers or how they could overcome the barriers e.g. what I do vs suggestions I have</td>
</tr>
<tr>
<td>7</td>
<td>Change in RP</td>
<td>Discussion of how they previously used RP e.g., when starting out compared to now, or different workplaces. RP over time as a professional or between student to professional, or how supporting others to engage in RP as student/supervisor. changes due to COVID-19</td>
</tr>
<tr>
<td></td>
<td>Characteristics</td>
<td>How one’s personality/characteristics/emotions/feelings impact their ability to reflect from a positive or negative standpoint e.g., I’m a reflective person</td>
</tr>
<tr>
<td>---</td>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 9 | Feedback on Reflective practice questions (RPQ) | Feedback on the 3 sets of RP questions that are shared  
Child codes:  
   a. RPQ Feedback – what I do  
   b. RPQ Feedback – suggestions I have but not really things I do |
| 10 | Feedback on RP teaching content | Feedback on the RP teaching content that is shared  
Child codes:  
   c. RPT Feedback – what I do  
   d. RPT Feedback – suggestions I have but not really things I do |
| 11 | Miscellaneous code | Comments that might be useful, but don’t fit anywhere else yet |