Impressions of a Multiple Station Speech and Language Therapy Admissions Interview

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Abstract

Interviews are commonly used as part of the admissions process into selected entry university programmes to assist the selection committee to ascertain applicants' personal qualities such as their communication skills. There are no published studies on the effectiveness of interviews for selecting applicants into speech and language therapy programmes. Concerns have been raised in other disciplines, however, regarding the value of interviews due to questions about their reliability and validity. Eva, Rosenfeld, Reiter, and Norman (2004) developed a reliable and valid interview assessment process for admission into a medical school. The process is the multiple mini-interview (MMI) consisting of short stations.

A Speech and Language Therapy Multiple Mini-Interview (SLTMMI) was developed. This involved adapting Eva et al.'s (2004) MMI for the speech and language therapy context, that is, each station was developed to assess one or more of the personal attributes or skills required for the speech and language therapy profession. The research study investigated the SLTMMI's potential acceptability for use as an admissions interview process for the Bachelor of Speech and Language Therapy (BSLT) programme at Massey University.

The participants for this study were some of the student applicants for the 2013 Year 1 BSLT programme and some of the interviewers. Questionnaires were used to gather information on the participants' experiences. In addition, all of the deidentified student applicants' scoresheets were examined to evaluate the potential value of each station and the strength of the relationship between stations.

This research study represents the first step in the process of developing an improved admissions interview process for the BSLT programme at Massey University. The findings of the study have already led to refinements of the SLTMMI and will lead to further research into its reliability and its predictive validity for academic and clinical competence.

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Chapter One: Introduction

Most undergraduate speech and language therapy programmes consist of four years of full-time study. Typically they include a selected entry process. Student applicants must meet the appropriate prerequisite standards to be eligible for consideration. Generally, there are more applicants than places therefore entry can be competitive. Appropriate selection is essential for the student applicants, the staff, the university, and the profession. The selection process progresses the applicants and staff into an educational relationship which can either be pleasant or unsatisfactory. The aim of the selection process is to select applicants who are capable, likely to endure the intensity of the study workload and who will have made an appropriate career choice. Further, the intention is to ensure admission will only be granted to those applicants who will become competent and ethical clinicians (Bore, Munro, & Powis, 2009).

The admissions process must therefore, be carefully considered. It needs to be honest and fair. Selection processes that are possibly biased, lax or non-transparent can defeat their purpose and result in a misuse of all of the participants' time (O'Neill, Korsholm, Wallstedt, Eika, & Hartvigsen, 2009). Other professions such as medicine, allied health, and teaching have also deliberated over these selected entry admission issues. The eligibility criteria for admission into these programmes usually include academic achievements and one or more measures of the applicants' non-cognitive attributes, such as interpersonal skills and character. Academic achievements are relatively easily measured – transcripts, awards, grades, etc. Referee reports may provide descriptions of applicants' personal qualities, however, it is the issue of measuring the suitability of applicants' non-cognitive attributes, which poses the greatest challenge for staff in professional programmes.

Interviews are a commonly used method for selecting applicants, though many authors agree there is debate over their value, particularly in regards to their reliability and

validity. Research suggests that the interview format and design are key to the quality of the interview process. In 2004, Eva, Rosenfeld, Reiter, and Norman, published their findings of their development of an improved interview format, the multiple mini-interview (MMI), which consisted of multiple stations.

Rationale and Purpose of the Study

There has been no published studies of the effectiveness of interviews in selecting applicants into speech and language therapy programmes. Shapiro, Ogletree, and Brotherton (2002) examined speech and language therapy students who demonstrated marginal abilities. They reported that the most common strategy used by programmes to prevent marginal student performance was robust pre-enrolment procedures. They also found that those programmes that had difficulty identifying these students at the pre-enrolment stage, indicated that two of the factors contributing to this were that they did not interview the students and/or their admission requirements were inadequate.

My interest in undertaking this study relates to the use of interviews to assess applicants' non-cognitive attributes. In particular, the Bachelor of Speech and Language Therapy (BSLT) programme at Massey University had historically used a traditional interview format that had never been formally evaluated. This study aimed to address this issue and to begin to develop an appropriate interview process based on the recommendations of the literature reviewed.

Eva et al. (2004) considered four aspects, "reliability, validity, feasibility and the acceptability" (p. 320) to determine the efficacy of their MMI. The reliability and validity of the MMI has since been tested and affirmed by Eva et al. and others (e.g., Eva et al., 2009; O'Brien, Harvey, Shannon, Lewis, & Valencia, 2011). There has been no investigation of the use of an MMI outside medicine. This study evaluated the value of an SLTMMI based on its

practicability and acceptability from the student applicants' and the interviewers' perspectives and explored the value of the individual stations to the overall SLTMMI.

This study provides an introduction to the complexity of the issues involved in admission interviews and may provide a possible solution to the challenges speech and language therapy programmes face in selecting appropriate applicants. In addition, the findings from this study will provide a foundation for further development of an SLTMMI for the Massey University Speech and Language Therapy programme and initiate future research, for example the predictive validity of the SLTMMI for academic and clinical performance.

Overview of the Thesis

Chapter One has provided an introduction to the research carried out for this thesis, including some insight into the foundation and reasons for this research study. Chapter Two reviews the relevant literature on the strengths and weaknesses of the current processes used for measuring and evaluating essential non-cognitive attributes in applicants. The use of interviews is reviewed in depth, and then finally the MMI process (Eva et al., 2004) is introduced and discussed.

Chapter Three outlines the methodology used in this study, beginning with an overview of the development of the SLTMMI and then outlining the process used for its evaluation. This chapter describes the participants, the setting, and the approaches used to gather and analyse the data. The ethical considerations that were undertaken for this study are also described.

Chapter Four presents the results identified following the analysis of the data. These results are presented as they relate to the evaluation of the SLTMMI and begin with the participants' perspectives and conclude with an examination of the SLTMMI's stations.

Chapter Five provides a discussion of the study's primary findings and compares these to the relevant research reviewed in Chapter Two. Similarities and differences are highlighted whilst the value of the findings to the current literature on this topic is also discussed.

The value of this study is explored further in Chapter Six following an initial outline of the study's limitations. The key findings related to the research questions are summarised, clinical implications are discussed, and considerations for further research are identified.

Chapter 2: Literature Review

This chapter reviews the research that provides the background to some of the processes that selected entry programmes use to ensure appropriate applicants are selected following their admissions processes. The research specifically relates to assessing and evaluating the non-cognitive attributes of applicants. These essential non-cognitive attributes are described, as well as the current practices for measuring and evaluating these qualities in applicants. The strengths and weaknesses of these practices are considered. Following a discussion of the value of one of these processes, the admissions interview, the multiple mini-interview process (MMI) (Eva, Rosenfeld, Reiter, & Norman, 2004) is presented.

An automated database search was conducted to locate recent and relevant information on admission interviews using key words such as *clinical education, admissions criteria, admission interview,* and *interpersonal skills*. There was little published literature in the speech and language therapy field, therefore other professional training programmes were examined: medicine, nursing, psychology, physiotherapy, occupational therapy, teaching, and human resources. Medicine yielded the greatest amount of literature followed by nursing education. The majority of the relevant literature was found in electronic articles. Some useful evidence was also sourced from editorials.

Non-cognitive Attributes

In addition to theoretical knowledge, speech and language therapists need to demonstrate other non-academic competencies to ensure a high standard of client care and service is provided. For example, speech and language therapists are required to think effectively, problem solve holistically, work collaboratively, communicate well, self-evaluate and be successful organisers of their time and workloads (The Speech Pathology of Australia [SPA], 2011). Lambe and Bristow (2010) investigated the general core attributes of good

doctors and identified a range of similar qualities: “good communication and listening skills, recognition that the patient is the primary concern, compassion, and honesty” (p. 329).

The days of the impersonal ‘doctor-with-no-people-skills’ are reducing. Appropriate non-cognitive attributes are necessary for professional practice (McGaghie, 1990). Many authors have identified important personal qualities and behaviours of good doctors and have attempted to evaluate these as part of the admissions process (Albanese, Snow, Skochelak, Hugett, & Farrel, 2003; Courneya et al., 2005; Groves, O’Rourke, & Alexander, 2003; Lambe & Bristow, 2010; Lemay, Lockyer, Colin, & Brownell, 2007; Peskun, Detsky, & Shandling, 2007; Poole et al., 2012). The most common personal qualities identified were “compassion, coping capabilities, decision-making, interprofessional relations, realistic self-appraisal, sensitivity in interpersonal relations, and staying power – physical and motivational” (Albanese et al., 2003, p. 317). Groves et al. (2003) also included reasoning skills as an essential quality as they believe these are central to competency development. Maturity and having a broad background are two additional qualities evaluated by the School of Medicine at Auckland University (Poole et al., 2012).

Eva et al. (2004) described two types of students 1) “the bookworm” and 2) “the butterfly” (p. 768). The “bookworm” is the studious ‘A’ student who has difficulty communicating with patients; “the butterfly” has excellent interpersonal skills but lacks synthesised theoretical knowledge. Both of these types of students will experience difficulties in becoming successful practitioners. Siu and Reiter (2009) noted that 92% of the issues brought before three medical boards were for transgressions of professional behaviour. Admission committees have a responsibility to choose well and are considered by Spooner (1990) to be the “gatekeepers of the profession” (p. 184). Peskun et al. (2007), examining medical school admission criteria, argued for the inclusion of non-cognitive assessment procedures having tested their worth in providing additional valuable predictive information.

Likewise those involved in nursing education recognise the need for evaluating non-cognitive attributes. For example, Rosenberg, Parraud, and Willis (2007) identified six non-cognitive attributes ("compassion, integrity, altruism, motivation, interpersonal skills, respect") and possibly two emotional intelligence qualities ("empathy, self-awareness", p. 414) they considered were essential qualities to support health science students to succeed as students and as professionals.

Non-cognitive attribute evaluation. Albanese et al. (2003) and others (Basco, Lancaster, Gilbert, Carey, & Blue, 2006; Dowell et al., 2011; Eva et al., 2009; Kulatunga-Moruzi & Norman, 2002; Urlings-Strop, Stijnen, Themmen, & Splinter, 2009; Wilson, Roberts, Flynn, & Griffin, 2012) acknowledged that these qualities are complex and difficult to measure. Some non-cognitive attributes may also be contextual in nature (Albanese et al., 2003; Benbassat & Baumol, 2007). That is the notion that personality traits can be context specific and therefore what may be demonstrated in one instance may be absent in another. Other concerns include the stability of the attributes over a long period, for example, from student to professional and whether any non-cognitive attributes are teachable (Albanese et al.; Crampton, 2012; Lambe & Bristow, 2010). Albanese et al. and others (McAllister, Lincoln, Ferguson, & McAllister, 2011) proposed that the non-cognitive attributes related to competency progress are developmental in nature and should be evaluated on a continuum.

Siu and Reiter (2009) argued that the need to evaluate applicants' non-cognitive characteristics has been well established and therefore any inquiry should now consider the appropriate methods for assessment. Unfortunately, the issue of evaluation is contentious and some common methods are considered to have limited value. The assessment process needs to be sufficiently robust to distinguish appropriate applicants from those who are potentially unsuitable for the demands of the study or the profession. Yates and James (2006) identified 13% of students had experienced difficulties with the course of study over five cohorts of medical students, resulting in withdrawals, terminations and suspensions of study.

Siu and Reiter (2009) compiled an overview of strong and weak measures of evaluation. The degree of success of the measurement was the method's ability to predict future performance in medical schools, which included academic as well as clinical performance. In their overview, Siu and Reiter, identified five widely used methods: non-standardised interviews, references, personal statements, personality testing, and emotional intelligence quotients.

Siu and Reiter (2009) supported others' views that these traditional methods for obtaining information about applicants' non-cognitive attributes actually provide very little useful comparative information across the applicants (Albanese et al., 2003; Benbassat & Baumol, 2007; Bore, Munro, & Powis, 2009; Poole et al., 2012; Vargo, Madill, & Davidson, 1986). Further, they found that the information is usually (if not always) subjective, for example, applicants will choose referees who are likely to provide good recommendations.

Likewise, Siu and Reiter (2009) and others (Bore et al., 2009; Wilson et al., 2012) suggested that personality testing yields unsatisfactory predictive information on two counts. They reported that: 1) personality tests are not sufficiently sensitive to differentiate among medical student applicants, and 2) as with personal statements, test-takers will respond according to the most appropriate answer rather than expose any unsuitable personality traits. Siu and Reiter uncovered the same failings of tests of emotional intelligence.

Siu and Reiter (2009) also reviewed the value of written and video-based situational judgement tests. They discussed the findings of Lievens and Sackett (2006) who examined the predictive validity of these tests for future performance at medical school. Though Lievens and Sackett found that video situational judgement tests were more highly predictable for non-cognitive attributes than the written format, they admitted there are some limitations to their preliminary findings. Their study consisted of 99.5% White medical students and occurred over two separate occasions with different student cohorts. In 2000 one student cohort was presented with a video-based format of the situational judgement test and

in 2003 another student cohort was presented with the test in written format. Their findings were limited to this single study. Therefore Siu and Reiter did not consider there was sufficient evidence to recommend the use of either written or video-based situational judgement tests.

Finally, Siu and Reiter (2009) suggested that personal interviews, of the behavioural and situational type that are commonly used as part of job applications, are of little discriminatory value for medical school admissions. These types of interviews are reasonably powerful in discriminating appropriate candidates from a pool of applicants from the general population. Human resource staff and managers commonly use interviews for personnel evaluations (Edwards, Johnson, & Molidor, 1990). However, as the pool of interviewees becomes narrower as is the case with medical school applicants, behavioural or situational interviews are less discriminating.

Interviews. The next section discusses the value of interviews as part of an admissions selection process for professional programmes and presents a specific interview format, the multiple mini-interview (MMI) (Eva et al., 2004). This review of the strengths and weaknesses of interviews provides the background for the development of the MMI, which in turn provides the context for this study.

Interviews vary in their formats from one-to-one, group (multiple interviewees at one time), a board or a panel of interviewers. Other formats are combinations of these, for example, a one-to-one interview followed by a panel interview. There are three types of interviews, categorised according to the structure to be adhered to by the interviewer: *unstructured* (minimal guidelines), *semi-structured* (some guidelines with scoring procedures), and *structured* (includes degrees of standardisation).

Strengths. Gorman, Mongiatti, and Poole (2008) from the School of Medicine in Auckland, are strong advocates for the use of personal interviews as part of the selection process. They asserted that the interview process provides one of their medical school's links

to the profession and the community through their involvement in the interview. They reported that “New Zealand doctors are interested in being part of the process that determines the future profession” (p. 622). They believe the interview contributes to the face validity of the admissions selection process.

Taylor (1990) stated that the foremost function of interviews is to ensure inappropriate applicants are not selected for admission. The interview is a mechanism for sorting the “bad buggers” (Gorman et al., 2008, p. 622) from the good. This view is also supported by Wright and Bradley (2010) who discussed the possibility that “the interview may be useful in refusing admission to applicants that cause professional concern” (p. 1074). Wilson, Donnelly, Chur-Hansen, & Turnbull (2009) are adamant that for programmes who offer limited numbers of places, it is essential that applicants who are offered admission are the most likely to complete the course. Similarly, Rosenberg et al. (2007) considered they have a professional duty to both the nursing profession and to the students to identify unsuitable applicants.

Specifically designed interviews can sort a group of candidates who are more homogenous, that is a short-listed group of similar applicants (Edwards et al., 1990). By asking the right types of questions, the information gathered can discriminate those who are considered to have the greater potential to be appropriate students for a programme and also competent practitioners. In this way, the interview process serves a gate-keeping function.

Another ‘service’ the interview provides is the opportunity to “clarify items on the application” (Basco et al., 2006, p. 153) to obtain further information about the applicants. In fact, some authors stated that the justification for conducting interviews must be to obtain exclusive and supplementary information (Alkhateeb, Latif, & Easton, 2009; Morris, 1999). Edwards et al. agreed stating that the most important purpose of the interview is to “gather information about the candidate that would be difficult or impossible to obtain by any other means” (1990, p. 168). Questions about extra-curricular activities, such as part-time work

expectations the applicant has, are important to ask according to Wells (2003), who considered financial pressures to be one of the reasons nursing students struggle to achieve well during their training and therefore a factor in attrition rates. Likewise, there is the benefit of gathering additional information that supports an applicant's 'right fit' with an individual university's programme (Rosenfeld, Reiter, Trinh, & Eva, 2008), for example, their values, their life or work experiences.

Further, the interview provides the opportunity for applicants who have weaker academic profiles to exhibit their strong and highly desirable personal qualities raising their ranking amongst other applicants. These applicants' personal qualities may outweigh their weaker academic profiles (Albanese et al., 2003).

Perhaps a most interesting benefit of the interview process proposed by Gorman et al. (2008) and that has not been documented elsewhere in the literature reviewed, is the opportunity that an applicant can 'blame' the interview process for their non-acceptance into a programme. That is, the applicant can use the interview to either disclose they do not wish to be accepted or sabotage the process to ensure they are not. In this way, the interview enables the applicant to 'save face'.

Another feature of interviews is their possible capacity to predict clinical performance. There is little conclusive evidence for this yet, however, Goho and Blackman (2006) conducted a meta-analysis of the effectiveness of selection interviews. They examined 20 studies from a variety of different health education disciplines and a variety of different countries. They found that although interview data yielded very little predictive ability for academic performance, it was able to moderately predict clinical performance.

The interview can function as a two-way process as the applicants also have the opportunity to seek additional information about the course, the workload, clinical placement structure, and meet the staff. When students are informed and have a clear understanding of

what is involved, Benbassat and Baumol (2007) believe they are less likely to lose motivation and withdraw from the programme later.

When interviews are carried out on campuses, university programmes can take these occasions to market their programmes, highlight their strengths and 'showcase' their facilities. Marketing is particularly important for those programmes that are 'competing' for the best applicants. Rosenfeld et al. (2008) and others (Edwards et al., 1990; Lumb, Homer, & Miller, 2010; Morris, 1999; Taylor, 1990), identified this function of the interview as performing a recruitment opportunity. Potential applicants visit either before or on their interview day to familiarise themselves with the environment, collect or drop off required information, or to compare one programme with another.

The issue of personal engagement is another positive feature of the interview. The interview can demonstrate to applicants that the programme considers meeting applicants important and of value (Albanese et al., 2003). Fraser (2012) concluded that the personal engagement with applicants that the interview provides not only enables applicants to advocate for themselves as they compete for limited number of spaces at the School of Medicine in Auckland, but this process is also a point of difference for their School compared with the Dunedin School of Medicine.

Limitations. However, even with the benefits of interviews highlighted above, many programmes are not convinced of their use. The most common concerns relate to reliability and objectivity (bias), the time and cost involved, and the uncertainty about their predictive validity. The admissions processes into selected entry programmes have become multifarious in their attempts to address these legitimate concerns.

Many authors agree that the arguments supporting and refuting the validity and reliability of the interview are inconclusive (Albanese et al., 2003; Helmes & Pachana, 2008; Lemay et al., 2007; Morris, 1999). Others state that the arguments are contentious and divisive (Ehrenfeld & Tabak, 2000).

In their summary of a review of these issues, Benbassat and Baumol (2007) concluded that despite the interviewers' best intentions, applicants' ratings can be biased either resulting in admission due to kindness or rejection due to harshness. Benbassat and Baumol found that the two most common causes for bias were based on applicants' gender and the amount of background information the interviewers knew about the applicants. Other reasons for bias effects included "age, race, and physical and mental disabilities" (Goho & Blackman, 2006, p. 336). Similarly Lumb et al. (2010) identified these concerns of bias in their study of a physiotherapy admissions interview process: 1) the disadvantages experienced by minority groups at the interview stage, and 2) the effect of the interviewer's own gender on interviewers' judgements. They reported that female staff were more likely to rate physiotherapy applicants of any gender more highly than male staff.

Goho and Blackman (2006) and Morris (1999) investigated the impact of first impressions on interviewers. They found that interviewers can be inclined to base judgements on applicants' appearances. These authors also suggested the order in which the applicants were interviewed may have a positive or negative effect.

Another finding related to the quality of the applicants as a pool. Gorman et al. noticed that the short-listing process can "compress the cohort in terms of both academic grades and personal qualities" (2008, p. 622). Judgements of applicants may be blurred as applicants are compared to the previous stronger or weaker applicants, rather than judged solely on an individual basis against a predetermined measure.

Interviews have also been criticised for their potential for lack of consistency amongst the interviewers' judgements, the inter-rater reliability. This issue was identified by Moran (2008) in her investigation of teacher education tutors' perceptions of the selection process.

A further major criticism of interviews is their cost in time and money. As already mentioned interviewers are usually faculty staff and for some programmes, community stakeholders may be involved. In addition to this, the cost increases as the number of

applicants and/or the length of the interview increases (Albanese et al., 2003). Considering the pitfalls of interviews, it could be argued that interviewers and applicants could use their time more productively (Bore et al., 2009).

Taylor (1990) calculated the average cost to the university per interview and also to the applicants. The universities' greatest costs are the faculties' hourly rates based on their salaries and lost productivity; the costs to the applicants include their time off work/school, travel and often accommodation as selected entry programmes are not offered at all universities (Morris, 1999; Taylor). Teacher education staff reported that interviews are very "time-consuming" (Moran, 2008).

The issue of the predictive validity of interviews is not definitive and requires further substantial research. Ferguson, James and Madeley (2002), in their systematic review of the literature of factors that were possible predictors of success at medical school, concluded that strategic learning styles, white ethnicity, and being female were identified as the most likely indicators for successful performance at medical school. They also concluded that long term cohorts and case-control studies are needed for any further conclusive evidence of these and other factors, including the use of interviews.

Similarly, Benbassat and Baumol (2007) also reviewed studies supporting and refuting the validity of interviews. They concluded that most studies reported no predictive validity of admissions interviews but recommended that the applicants be admitted on "past academic achievements only, by the use of a lottery amongst all eligible applicants, or a combination of these two" (p. 519). However, in addition to this, they also recommended that applicants must be supported to make an informed decision on applying to medical school. As discussed above, this can be efficiently and suitably achieved through an interview.

Spooner expressed an interesting criticism of interviews. He was concerned at the possibility of cohorts of "clones" (1990, p. 187) if all applicants were asked the same questions and evaluated according to set criteria. Another possible minor issue of interviews

is the coaching of applicants on certain behaviours and responses to possible interview questions (Albanese et al., 2003). Wilson et al. called this phenomenon "faking good" (2012, p. 3).

The format or design of the interview can also present issues, for example, one format may cause the applicants to be more anxious than others. Albanese et al. (2003) found that applicants often dislike panel interviews, particularly female and African American applicants.

Management of limitations. Despite the reasonably strong arguments against using interviews as part of an admission process, some selected entry programmes are preferring to seek to minimise or manage the issues rather than eliminate interviews altogether (as other programmes have done). The preference for managing the issues is due the potential benefits of interviewing applicants outweighing abandoning the process and resorting to such means as open entry (where 'natural' self-selection occurs usually after the first set of assessments) or the use of a lottery system (ballot).

To effectively manage the inherent issues of reliability and validity of the interview process, a number of strategies are required. Campion, Palmer, and Campion (1998), from the business management and psychology fields, respectively, identified 15 features that they believed should be included in interviews to minimise all possible issues. They conceded a minimum set of six components as essential, though these may vary according to the specific context of the interview. The six are: "base questions on a job analysis, ask the same questions of each candidate, use better types of questions, rate each answer or use multiple scales, use detailed and anchored rating scales, and provide extensive interview training" (p. 82).

Campion et al. (1998) also considered six aspects of reliability in reviewing their format: test-retest reliability, interrater reliability, candidate consistency, interviewer–candidate interaction, internal consistency, and interrater agreement. They also critiqued their

format for three features of validity, “job relatedness, reduced deficiency (extent to which the interview minimises the omission of relevant information), and reduced contamination (extent to which the interview prevents irrelevant information from entering the process” (p. 78).

The field of medicine and allied health has heeded this advice. Some programmes in medicine and nursing education have since modified their admissions processes to include more structure such as the use of a standard set of questions, a scoring scale and training for interviewers (Albanese et al., 2003; Alkhateeb et al., 2009; Axelson & Krieter, 2009; Blouin, 2010; Bore et al., 2009; Courneya et al., 2005; Ehrenfeld & Tabak, 2000; Eva et al., 2004; Harris & Owen, 2007; Helmes & Pachana, 2008; Lambe & Bristow, 2011; Lemay et al., 2006; O’Brien et al., 2011; Poole et al., 2012; Rosenfeld et al., 2006; Taylor, 1990; Wilson et al., 2009). Other known allied health disciplines that are reviewing and revamping their interview processes are physiotherapy and psychology (Helmes & Pachana, 2008; Morris, 1999). These authors are leading the charge in developing more reliable interview processes.

McCallum, Donaldson, and Lafferty (2006) developed an interview scoresheet for applicants into nursing education. The scoresheet consisted of a Likert scale for rating the applicants during their semi-structured interview and also included their application information (references and educational qualifications). Two interviewers independently rated each applicant. Their findings supported the use of the scoresheet, concluding it was reliable and valid. Rosenberg et al. (2007) found that their structured interview format enabled them to identify those applicants who had good applications but were less likely to succeed in their nursing programme. This supports the review of interviews by Morris, whose finding was concise: “the content and format of the interview needs to be carefully designed and structured to improve its reliability and validity and minimise subjectivity” (1999, p. 480).

The increased structure of the interview will also increase its predictive validity (Goho & Blackman, 2006). Lambe and Bristow (2011) used a structured interview format for their admissions process and also found that the increased structure of the interview, along with the use of trained interviewers increased the predictive validity with respect to medical student performance.

Other authors used a combination of approaches to facilitate good interrater reliability. Blouin (2010) developed and trialled a structured interview instrument consisting of questions that related to seven presented scenarios specific to emergency medicine. The questions were standardised to ensure the same questions were asked of the applicants, the same type of information was gathered and the interview panel of three were trained on the interview process (the questions and the rating). Courneya et al. (2005) chose a semi-structured panel interview over their former unstructured one-to-one interview format having found interrater reliability was better for the semi-structured panel interviews. Alkhateeb et al. (2009) designed a semi-structured interview tool and similar to Blouin, included interviewer training and a scoring rubric in their procedure. Their findings reported "good to excellent" (p. 7) interrater agreement.

The structured interview format also helps to manage bias. As recommended by Campion et al. (1998), the interview should consist of a standard set of questions, scoring sheets, training of the interviewers and the rateable behaviours should be constrained to only those that are observable during the interview process. To further minimise bias, some programmes have applied some of Campion et al.'s other recommendations. These include interviewing applicants without any prior knowledge of their background (Alkhateeb et al., 2009; Blouin, 2010; Lemay et al., 2007; Lumb et al., 2010), increasing the number of interviewers per applicant, and ensuring no conferring with other interviewers whilst evaluating applicants' responses (Alkhateeb et al., 2009; Blouin, 2010; Poole et al., 2012).

Often the time and cost issues of interviewing are managed by short-listing the original pool of applicants, so that only those who have met initial criteria, usually academic qualifications, proceed to the interview stage. Alkhateeb et al. (2009) believed the time and effort involved in using a more structured process is justified due to the valuable additional information gained about the applicants. Rosenberg et al. (2007) and Wilson et al. (2009) felt so strongly about the importance of selecting the most suitable applicants for their nursing programmes that the issues of time and cost were superseded. They believed that unnecessary costs and further disappointment for the students were reduced if any unsuitable applicants were identified by the interview process and were not offered admission.

The issue of minority groups and increased access to selected entry programmes has been managed in various ways, interestingly, none of these by modifying the interview format or process. The School of Medicine in Auckland conducts a separate admission process (the Maori and Pacific Admissions Scheme) for Maori and Pasifika applicants, which also consists of a set numbers of places (Gorman et al., 2008). To obtain a more balanced cohort, other programmes use a random selection process (Lewis & Smith, 2002), a weighted ballot system, or a lottery (Benbassat & Baumol, 2007). Moran (2008) suggested that reserved places could be held for applicants to increase the diversity of teachers in the hopes of meeting the needs of diverse learners. The admissions criteria could be relaxed and some discretion applied to ensure quotas were filled.

Summary. Interviews range in format and type. Interviews serve the purpose of gathering information, clarifying information, and verifying information for both the interviewers and the applicants. Eva et al. (2009) stated that interviews have the capacity to enable applicants to demonstrate both their knowledge and communication skills simultaneously ("cognitive and non-cognitive qualities together" p. 774).

The merits of the interview includes its capacity to gather additional required information about the applicants. The weakness of the interview relates to concerns over

reliability and validity. Attempts at addressing these weaknesses have been explored. Reliability is improved as the structure and the process increases in standardisation.

Standardisation procedures provide comparable data from the group of applicants. The data can then be more easily analysed resulting in well-justified decisions about the applicants' suitability for acceptance (or rejection).

Campion et al. concluded that for applicant selection purposes, structured interviews are "superior to unstructured interviews" (1998, p. 82). They also advised that the essence of the structure can be maintained even if there is variety in the structure. Lastly, they concluded that structured interviews are not difficult to develop leaving few arguments for not using these types of interview formats.

The Multiple Mini-interview (MMI)

Recognising the need for a structured interview format to satisfactorily evaluate medical student applicants' non-cognitive attributes, Eva and his colleagues (Rosenfeld, Reiter, and Norman) at McMaster University, Ontario, developed the multiple mini-interview (MMI) (2004). The MMI fulfils the 'criteria' established by Campion et al. (1998) for a reliable and valid interview assessment tool. Siu and Reiter (2009), in their overview of medical school admissions procedures cited small preliminary studies that showed the promise and potential of this process. Poole et al. (2012) praised the value of the MMI due to its capacity to assess a wide range of applicants' personal qualities and increased validity over other interview formats.

The MMI involves short objective structured clinical exam (OSCE)-style stations. Therefore, the MMI is also referred to as the admissions OSCE. The process requires the applicants to pass through a series of stations. Each station, lasting a few minutes, consists of a different scenario-based task or question designed to assess one or more non-cognitive attributes such as interpersonal skills or professionalism. Careful designing ensures each

station avoids requisite clinical knowledge. All interviewers are trained and use scoresheets to rate the applicants' responses. One interviewer per station independently rates all the applicants' behaviours and responses of those who pass through that station. Consequently, multiple interviewers rate all applicants and for consistency, the same interviewer rates all the applicants at one station. Eva et al. (2009) suggested that in fact this feature (multiple interviewers per multiple stations) reduces the probability of measurement error more than by increasing the number of interviewers per interview.

There is flexibility in the process as additional or replacement stations can be developed from one year to the next. This flexibility can also enable a 'bank' of stations created over time, making it more difficult for the applicants to prepare or rehearse based on previous years' applicant interviews. While the McMaster MMI is designed to measure such skills as insight into ethical issues, communication, and collaboration, Eva et al. (2009) suggest that the MMI stations can be modified to evaluate different non-cognitive attributes depending on what is more appropriate for the purpose. Axelson and Krieter (2009) agree that the MMI process can be adapted to suit any selected entry programme.

Eva et al. (2004) assert that this approach reduces the amount of resources needed, including interviewers' time. Rosenfeld et al. (2008) confirmed this assertion following 5 years of using this process. They believe the MMI is more time efficient due to the quality and the amount of the information gathered by all the interviewers. Harris and Owen (2007) agree that the MMI is an efficient process. Their results indicated that they required "fewer interviewers, was more economical, and was logistically simpler" (p. 241) than their previous interview format.

Bore et al. (2009) suggest the MMI can be extended to evaluating applicants at all stages of the application process, starting with the initial contact and involving administration staff as possible raters as well. For example, interpersonal skills, professionalism and punctuality can be observed and rated and added to the pool of multiple opportunities of

demonstration of these behaviours. Similarly, additional opportunities for observation of applicants' behaviours include whilst waiting for their interviews, during refreshment breaks, and campus tours (Albanese et al., 2003).

Across the globe, the use of an OSCE-type interview process or an MMI is gaining momentum. Since the initial development in Canada was reported in 2004, similar formats have been trialled and reviewed for medical school admissions also in Canada by Lemay et al. (2007) and Rosenfeld et al. (2006), in the United States of America by Basco et al., (2006), the United Kingdom by O'Brien et al. (2011), in Australia by Harris and Owen, (2007), and only proposed at this stage in New Zealand by Poole et al. (2012). The key information from these studies is presented in Table 1 below (p. 22).

Table 1

Key Findings of Other Studies Using MMI Format

Authors	Year	Key findings
Basco et al.	2006	Only a small though significant correlation was found between the interview and later performance on the 4th Year clinical practice exam.
Harris and Owen	2007	The MMI was more cost effective and simpler than their previous format. The interviewers and applicants enjoyed the process.
Lemay et al.	2007	The MMI is a valid and reliable approach for admission interviews. It is an improvement over their previous processes. The MMI can assess non-cognitive attributes and can discriminate between non-cognitive attributes at different stations.
O'Brien et al.	2011	The MMI is reliable, valid, feasible, internally consistent, and acceptable for both applicants and interviewers.
Rosenfeld et al.	2006	The MMI is feasible as it more cost efficient

Conclusion

The literature suggests the interview is still the best and most preferred method to assess and evaluate applicants' non-cognitive attributes. The traditional interview has acknowledged weaknesses and improvements have been made by some authors to attempt to address these, rather than eliminate the interview altogether (as has been the decision by others). The MMI, initially designed by Eva et al. (2004) and since used by a few others, is receiving positive reviews as a potential interview format that combines the strengths of the interview process and manages the weaknesses.

This study explored the development and evaluation of an SLTMMI for the purposes of the Bachelor of Speech and Language Therapy (BSLT) programme at Massey University. The study's research questions, the development of the SLTMMI and the methodology for its evaluation are presented in the following chapter. The contribution of the findings will provide further evidence for the value of the use of admissions interviews for selected entry

programmes, specifically supporting the use of an MMI. Further, the findings will provide a preliminary understanding of the benefits of an MMI for speech and language therapy programmes.

Chapter 3: Methodology

This chapter begins with the identification of the study's research questions. Next the development of the speech and language therapy multiple mini-interview (SLTMMI) is outlined and the study's setting is described. Following this, the research design, explaining the two parts of the study (Part A and Part B) is presented. For both parts of the study, the participants and the methods used for data gathering and analysis are described. Finally, the ethical considerations and their management conclude this chapter.

Research Questions

The aim of this study was to trial and evaluate an SLTMMI format for the purposes of improving the admissions interview process for the Bachelor of Speech and Language Therapy (BSLT) programme at Massey University. The research questions guiding this study were as follows:

1) **Is the SLTMMI perceived as acceptable for use as an admissions interview procedure for entry into the BSLT programme at Massey University?**

   This question seeks to evaluate the SLTMMI in terms of understanding the participants' perspectives regarding the entire interview process and also some of its features.

2) **What is the value of each of the stations included in the SLTMMI?**

   This question seeks to evaluate the quality of the SLTMMI's stations in regards to their contribution and will inform its further development.

SLTMMI Development

The SLTMMI's development was modelled on the multiple mini-interview (MMI) process (Eva et al., 2004). The procedures remained almost identical, however the content of the stations were constructed to elicit responses appropriate for SLT (see Appendix A for the full SLTMMI). The eight stations of the SLTMMI were designed to measure non-cognitive attributes of prospective speech and language therapists. The focus of the MMI and the SLTMMI are contrasted in Table 2 (below).

Table 2

MMI and SLTMMI Stations' Focus Areas

MMI	SLTMMI
Critical thinking (medical scenario)	Insight and problem identification (speech and language therapy)
Ethical decision making (medical scenario)	Ethical decision making (speech and language therapy scenario)
Communication skills (verbal)	Communication skills (verbal and written, involved actors)
Knowledge of the health care system	Knowledge of speech and language therapy

The content of the SLTMMI's eight stations are summarised in Table 3 (p. 27). Four of the stations were designed specifically to elicit communication skills. These included a role-play scenario (Station 3), the adult and child interactions (Stations 6 and 7), and the written exercise (Station 8). The written exercise also enabled the applicants to demonstrate their insights through their written reflections. The applicants' problem identification skills were targeted in the clinical placement station (Station 5) and the family friend scenario (Station 1). The family friend scenario also required the applicants to identify any =ethical issues in the scenario. Finally, the two standard interview questions (Stations 2 and 4) enabled the applicants to demonstrate their motivation, commitment, and level of awareness

of the BSLT degree at Massey University. They were required to give reasons for applying to the programme and to describe their knowledge and understanding of the role of a speech and language therapist (SLT).

Procedures. This section describes the setting for the SLTMMI. It also outlines the actors who were involved, the training the interviewers received, and the format and scoring procedures employed.

Setting. The SLTMMI process (and all data collection) took place in the Massey University Speech and Language Therapy Clinic. This facility is a campus-based clinic purposefully designed as a teaching clinic that provides services to adults and children in the community. The Clinic has a Waiting Room, clinic rooms with adjoining observation rooms, and a student workroom. Each clinic room was set up as a station. Observation rooms were used for each of the stations involving actors (Station 6, child, and Station 7, adult).

Actors. Actors participated in the child and adult interactions for two stations (Station 6 and Station 7, respectively). The actors were recruited through personal contacts of our staff to fulfil these roles. The children were typically developing pre-schoolers. The adults were elderly and had mild-moderate communication disorders. Multiple actors were recruited to create a pool to manage absences. They were rostered on for half days only to reduce the risk of loss of interest or fatigue.

An *Information Sheet (Actor)* (see Appendix B) was sent to the actors (or to their parents in the case of the children) informing them of the study's aims and of their voluntary participation in the SLTMMI only. The actors were not research participants. Their involvement required some minor briefing just prior to the interviews, outlining that their participation consisted of responding to the applicants' conversational interactions, as and if they so wished. There were no other requirements.

Table 3

SLTMMI Stations

Station	Content
1	Scenario: Family friend The applicants are asked to consider the ethical problems of being asked to provide speech and language therapy intervention whilst still a student.
2	Standard interview question 1 The applicants are asked to describe their reasons for wanting to be a speech and language therapist.
3	Scenario: Parking garage The applicants are required to role-play a scenario of having been observed damaging a colleague's expensive car whilst reversing, then being informed that the colleague is expecting their visit. The applicants must role-play how they would manage resolving this issue.
4	Standard interview question 2 The applicants are asked to describe their experiences, and the insights gained from these experiences that lead them to believe they would be a good speech and language therapist.
5	Clinical placements question Two different approaches to arranging clinical placements are outlined to the applicants. The applicants are asked to identify and discuss the advantages and disadvantages of both approaches.
6	Actor: Child interaction Preschool child – the applicants are invited to interact, engage, and play with the child using any of the materials available in the station room.
7	Actor: Adult interaction Adult – the applicants are invited to engage and interact with the person using any of the materials available in the station room.
8	Written exercise and reflection Questions: The applicants are required to answer questions eliciting their understanding and use of English grammar. Reflections: The applicants are asked to reflect on their interactions with the adult and child, discussing what went well and what they would change if they were to do it again.

The actors' briefing consisted of:

1. Introduced myself (my role as a SLT staff member)
2. Briefly informed them about the SLTMMI interview process as it related to their stations
3. Informed them that different applicants would be talking with them, one at a time, and they could respond as they wished. There were no other requirements.

Interviewer training. The interviewers in Eva et al.'s study (2004) reported that they would have liked more preparation in the form of training. Therefore, in response to this, and in accordance with several other interview formats (e.g., Harris & Owen, 2007), the interviewers received training on the SLTMMI process. In particular, the training involved explanations of the stations and their scoring procedures. Information was provided on the intent of the assigned station; examples of appropriate and inappropriate applicants' responses and the use of the 7-point Likert rating scale on the stations' scoresheets (see Appendix C for an example station scoresheet). The descriptors enabled the interviewers to assign values to the applicants' responses.

The interviewers were provided with no background information on the applicants. This was an attempt to minimise bias as suggested by Alkhateeb et al. (2009), Blouin (2010), Lemay et al. (2007), and Lumb et al. (2010).

Organisation. In ideal circumstances, each interviewer would have remained at the one station for the entire interview process; however, two of the staff worked part-time so this could not be sustained. Therefore, seven interviewers rated all of the applicants at one station only whilst one interviewer rated applicants at two different stations replacing two staff members on separate days.

The applicants passed through Stations 1 – 7 in the same sequence leaving Station 8 as the final station no matter which station they started and finished with. Station 8 was a written exercise which also included a self-reflection requiring the applicants to write about their interactions with the actors. This station had a longer time limit so it was practical that

this station was last and that all of applicants started and finished this station at approximately the same time. A staff member directed the applicants' start and movement through the stations. Two enrolled student volunteers were on hand and available for any assistance required, for example, assisting with the actors.

The entire SLTMMI process lasted approximately 2 hours, starting with a 5 minute briefing and concluding with Station 8 that was a maximum of 45 minutes (applicants could finish earlier if they wished.) Stations 1 – 7 took a maximum of 8 minutes with a 2 minute break between each station to proceed to the next. The station's scenario and questions were available on the door of each station. The applicants could use the 2 minute break to familiarise themselves and prepare for the next station before entry. The same station information was also available on a laminated card on the table in the station room.

Scoring. Each station had a scoresheet that matched only that station. At the end of the allotted 8 minutes, whilst the applicants moved to the next station, each interviewer rated the applicant's performance. The immediate rating by each interviewer per station inhibited any discussion between interviewers further reducing bias and increasing the SLTMMI's potential reliability.

The stations' scoresheets yielded a score on a 7-point Likert rating scale; one score per applicant per station. The scores for each station was out of 7: 1-3 = *Poor*; 4-6 = *Satisfactory*; 7 = *Excellent* (see Appendix C for an example of a station scoresheet.) At the end of each interviewing cycle (all of the applicants had passed through all eight stations), the interviewers convened as a group to collate the applicants' station scores into one summary scoresheet per applicant. The scores were totalled, giving each applicant an overall score, which then determined their eligibility for admission. A score of 4 on each station was considered the minimum of *Satisfactory*. There were eight stations, so all of the applicants who scored 32 or over were offered a place in the BSLT programme; conversely all of the applicants who scored 31 or below were not.

Finally, the interviewers also reviewed the applicants' references and personal statements. This latter information contributed to support the decision of an offer of a place (or not) in the BSLT programme for 2013. This information was not scored, nor did it affect any of the final decisions.

Design of the Study

This study was the first step in evaluating the SLTMMI. The study design was an intrinsic case study, a pre-experimental design, in that there was no control group (Springer, 2010). This approach was well suited for this study as it provided the opportunity to gain an understanding of two groups of participants' perspectives though appreciating generalisations could not be made from the findings.

This study evaluated the SLTMMI in terms of its acceptability for future use and in terms of the value of the stations. Therefore the investigation consisted of two parts: Part A and Part B. Part A gathered the data for Research Question 1 and some aspects of Question 2; Part B gathered the data for the Research Question 2 only (refer Table 4, p. 31). The data collection for both parts took place during the BSLT programme 2013 Year 1 admission interview process. This section describes each part of the study beginning with Part A.

Table 4

Data Collection Methods

Research Questions	Collection Method
Q1. Is the SLTMMI perceived as acceptable for use as an admissions interview procedure for entry into the BSLT programme?	
Accurate portrayal	Part A: Questionnaires
Anxiety	
Procedures	
Benefits	
Improvements	
Q2. What is the value of each of the stations included in the SLTMI?	
Requirement of specialised knowledge	Part A: Questionnaires
Difficulty of the stations	Part A: Perceived - questionnaires Part B: Actual – station scoresheets
Weaknesses	Part A: Perceived – questionnaires
Discriminating between applicants	Part B: Station scoresheets
Relationships between the stations	Part B: Station scoresheets

Part A

This part of the study investigated Research Question 1, investigating the SLTMMI's acceptability in terms of understanding the participants' perspectives regarding the entire interview and also some of its aspects (Research Questions 1 and 2). This section outlines Part A's participants and the methods used for gathering the data and its analysis.

Participants. At their SLTMMI interview briefings, all of the applicants and the interviewers were informed about this study and directed to the relevant *Information Sheets* (*Students* or *Interviewers*) (see Appendices D and E) and the questionnaires *Post-interview Questionnaire* (*Students* or *Interviewers*) (see Appendices F and G). They were verbally informed that if they agreed to participate, they should insert the completed questionnaire in

the locked box provided. Part A's participants consisted of those applicants and interviewers who volunteered to take part. Table 5 below (p. 32) outlines each of their briefings.

Applicants. All of the applicants were incoming undergraduates who met the academic criteria for entry into the BSLT programme. Of the 43 who attended the interviews, 28 completed the questionnaire. These applicants participated in this study anonymously. There was no information collected regarding their age, gender, ethnicity, or previous education.

Interviewers. The interviewers were eight staff from the BSLT programme who had previous experience in admission interviews due to their academic roles, however, the extent of their experience was not determined for the purposes of this study. Of the eight interviewers, five completed the questionnaire. All interviewers participated in the study anonymously. There was no information collected regarding their age, gender, or ethnicity.

Table 5

Outline of Participants' Briefing

Information
To the applicants 1. Introduced myself (my role as a SLT staff member, the purpose of this research) 2. Informed them about the SLTMMI interview process 3. Invited their voluntary anonymous participation in this research, which involved their completing a questionnaire to provide feedback on the interview process
To the interviewers 1. Informed them about purpose of the research 2. Invited their voluntary anonymous participation in this research, which involved their completing a questionnaire to provide feedback on the interview process

Data Collection Measures. All of the applicants and interviewers were reminded of their invitation to complete the questionnaire immediately following the interview process - the applicants at the conclusion of their SLTMMI experience as they submitted their

responses to Station 8, and the interviewers at the end of the total interview process. The content of the questionnaires is outlined in Table 6, (p. 44).

Each questionnaire was a close replication of those used in Eva et al. (2004). Some modifications were needed to reconcile with the SLTMMI process. The questionnaires consisted of questions requiring a rating response from 1 – 7 (Likert scale) and yielded quantifiable data on aspects of the interview and of the process as whole. The applicants' questionnaire consisted of five questions of this type; the interviewers' questionnaire contained four. The applicants' questionnaires also included three additional questions, using a 7-point Likert scale per question, for each of the eight stations. This provided a further set of quantitative data on the applicants' perceptions of three aspects of each of the eight stations: their perceptions of the requirement of specific knowledge of the station, their perceptions of the difficulty of the station, and their perceptions of the time available for the station.

In addition to these, three open-ended questions provided an opportunity for the participants to offer their opinions and suggestions of their insights of SLTMMI's advantages and weaknesses as well as their recommendations for future improvements.

Table 6

Questionnaire Questions

Students' questionnaire	Interviewers' questionnaire
Likert scale questions	
1. Do you believe that you were able to present an accurate portrayal of your ability?	1. Do you believe that you were able to develop an accurate portrayal of the student applicants' abilities at your interview station?
2. Compared to a more traditional interview*, do you think the SLT MMI would cause student applicants more or less anxiety? (*Interview involving two interviewers only)	2. Compared to a more traditional interview*, do you think the SLT MMI would be more or less difficult to administer (from the point of view of an interviewer)? (*Interview involving two interviewers only)
3. Would the use of the SLT MMI stop future students from applying to Massey University's Speech and Language Therapy programme?	
4. Were the instructions given before the SLT MMI adequate to prepare you for the experience?	3. Was the briefing provided before the SLT MMI adequate to prepare you for the experience?
5. Were the instructions given before each station clear enough?	4. Were the instructions given to the student applicants before your station clear enough?
Three questions for each station:	
1. Do you think this station required specialised knowledge?	
2. How difficult was this station?	
3. Was the time available for this station appropriate?	
Open-ended questions (both questionnaires	
1. What do you believe to be the greatest benefits of using the SLT MMI?	
2. Are there any improvements you would like to see made to the SLT MMI?	
3. What do you believe to be the greatest weaknesses of the SLT MMI?	

Analysis of data. The questionnaires yielded two types of data: quantitative and qualitative as illustrated in Table 4 (p. 31) investigating Research Question 1 and some aspects of Research Question 2. The quantitative questionnaire data were analysed with descriptive statistics. The qualitative data that involved the participants' responses to the three open-ended questions were examined for common themes.

Traditionally, Likert data have been considered as ordinal data and have been analysed using nonparametric statistics; however, some scholars have disagreed with this view and have applied parametric measures (de Winter & Dodou, 2012). The other studies that reported on the MMI (Eva et al., 2004; Eva et al, 2009; Harris & Owen, 2007; Lemay et al., 2007; O'Brien et al., 2011) used parametric measures only. For consistency with these studies, parametric statistics were used.

Part B

Participants and data collection. Part B consisted of the data yielded from all of the applicants' summary scoresheets (n = 43) (refer Table 4, p. 31). The applicants' summary scoresheets created at the end of each interview cycle were deidentified by a staff administrator before being submitted to the researcher. These data sets were used to evaluate the potential value of each station, their ability to discriminate between the applicants, the strength of the relationships between them, and their internal consistency.

Analysis of data. The same six descriptive statistics were calculated for the scoresheet data: mean, standard deviation, median, range, and the minimum and maximum scores. The non-parametric statistics were also used to generate boxplot graphs to provide a visual representation of the data.

Following this, the station performance of the subset of applicants (n = 11) who were excluded was examined (i.e., those applicants who did not obtain the total score required to gain entry into the programme). This involved looking at the descriptive statistics for each

station for this subgroup as well as calculating the number of applicants who scored below *4* on each station. Boxplots were also generated for this data.

A series of *t*-tests were calculated to compare the accepted and excluded applicants' scores at each of the eight stations. The Bonferroni correction was applied during this analysis to reduce the chance of Type I errors as the *t*-tests were being performed simultaneously.

Pearson correlation coefficients were calculated to examine: 1) the relationships between the station scores and the overall scores, and 2) the relationships between the stations. Finally, Cronbach's alpha analyses were applied to investigate the internal consistency of the stations.

Ethical Considerations

Ethical approval was sought from the Massey University Human Ethics Committee on two occasions as they related to Parts A and B. An initial application was completed and approved late 2012 (MUHECN 12/079) for Part A (see Appendix H). Additional ethical approval consisting of the all of the applicants' scoresheets for Part B was sought and approved in May 2013 (see Appendix I).

All participants were informed of the purposes of the study, what was involved, the level of their involvement, how their confidentiality would be maintained, what would happen with the results, and what they could do if they had any concerns or complaints. The participants provided voluntary consent for their participation by way of their submitted questionnaires. They were informed of the length of time any data would be kept and where it would be stored. Each participant was informed in writing as well as verbally, and had the opportunity to ask questions for additional information. The management of the additional ethical issues are outlined below.

Applicants. It was stressed in writing and verbally that their participation would not in any way influence their chances of being offered a place in the BSLT programme.

Actors. Actors were required for two stations – Station 6 (Adult) and Station 7 (Child). The level of vulnerability to the actors was minimal. Having a pool of actors assisted with the management of potential issues such as loss of interest, fatigue or absence. The actors were provided with appropriate refreshments and breaks to enable their optimal involvement and comfort.

The adult actors had mild-moderate communication disorders, however, they were able to understand all that was involved and their requested involvement. The adult actors were capable of providing full written consent. The children's parents provided written consent for their participation (Appendices J for the actors' consent forms).

Each of the actors was given a voucher as a 'thank you' gift for their involvement. Their level of participation at the station involved freewill, that is, the actors were invited to respond to the applicants' conversation or play initiations. They were informed that they did not have to respond if they did not wish to. An interviewer observed their interaction through the one-way mirror and was available to provide assistance at any time.

Conclusion

This chapter has introduced the research questions and the methodology that was used for this study. The research questions guided the investigation process resulting in a design that enabled an examination of the participants' perspectives and the value of the stations. The design consisted of Part A (the questionnaires) and Part B (the station scoresheets). Key ethical considerations were considered. The results and findings of this investigation are presented in the next two chapters, beginning with the results of Part A's and B's analysis in Chapter 4. These results come together in Chapter 5 as the primary findings of the two research questions are discussed.

Chapter Four: Results

This chapter presents the results from Part A and Part B of the study. Firstly, the results documenting the participants' views of the SLTMMI are outlined (Part A). These results consist of the applicants' and the interviewers' responses to the questionnaires including their responses to the Likert ratings and to the open-ended questions.

The data examining the potential value of the stations are presented next (Part B). These data are the deidentified scoresheets for all of the applicants at each of the eight stations. A subset of data representing those applicants who were not accepted into the Bachelor of Speech and Language Therapy (BSLT) programme due to their poor performance in the interview process are also explored. Two sets of correlational results are then presented: 1) correlations examining the relationship between station scores and performance overall and 2) correlations examining the relationship between each of the stations. Finally the results on the internal consistency of the stations are presented.

Part A: Questionnaires

Applicants' responses. Over half of the applicants interviewed (28/43 = 65%) completed the questionnaires. Descriptive analysis of the applicants' ratings and their responses to the open-ended questions are presented in this section. Tables 7 to 10 (pp. 39-43) present the applicants' perceptions of the interview in terms of the mean, standard deviation, median, range, the minimum and the maximum. The descriptors for the ratings used in the questionnaires are indicated below in italics.

Perceptions of the interview process. The applicants' experiences of the interview process overall are presented in Table 7 (p. 39). Though there was a wide range of feelings, as a whole, the applicants reported feeling positively about the interview process. The means were at the upper end of the rating scale, ranging from 5.61 to 6.57. The applicants indicated

that they were able to present themselves well, they believed they felt less nervous compared to a traditional interview, and they felt that the briefing and the instructions for each station were clear. The majority of the applicants also felt that the SLTMMI interview process would not put prospective applicants off applying to the BSLT programme (reversed $M = 6.07$, *definitely not*).

Table 7

Applicants' Perceptions of the SLTMMI

Question	*M*	*SD*	Median	Range	Min	Max
1. Do you believe you were able to present an accurate portrayal of your ability?	6.00	.72	6	2	5	7
2. Compared to a more traditional interview, do you think the SLTMMI would cause student applicants more or less anxiety?	5.61	1.60	6	6	1	7
3. Would the SLTMMI stop future students from applying to Massey University's SLT Programme? (ratings reversed)	6.07	1.09	7	3	4	7
4. Were the instructions given before the SLTMMI adequate to prepare you for the experience?	6.18	1.09	7	4	3	7
5. Were the instructions given before each station clear enough?	6.57	.69	7	2	5	7

Note. The descriptors for Questions 1, 3, 4, and 5 were from: *definitely not* (score 1) to *definitely* (score 7); score 4 was directly in the middle of the two. The descriptors for Question 2 were from: *a lot more* (score 1) *to a lot less* (score 7); score 4 was directly in the middle of the two.

Most of these questions yielded small ranges except for Question 2, which compared the perceived anxiety of the SLTMMI with a more traditional interview process. This question produced a broad range of responses. Though the mean of 5.61 was towards the less

anxious end of the continuum, almost one third (8/28 = 29%) of the applicants perceived the SLTMMI would cause more anxiety for applicants than a traditional interview process.

Perceptions of aspects of the interview. Next descriptive analysis of the applicants' ratings were used to investigate their perceptions of three aspects of the interview process: 1) the requirement of specialised knowledge, 2) the difficulty of the stations, and 3) the time available for each station. These results are presented in Tables 8, 9, and 10 (pp. 40-43).

There was a wide amount of variability amongst the applicants' perceptions of the requirement of specialised knowledge for the stations, with the standard deviations ranging from 1.34 to 1.96. However, the trend based on the mean ratings was that most stations (five of the eight) were considered to require either *none* or *very little* specialised knowledge (*M* ranged from 2.04 to 3.15). These five stations were: Station 2 (standard interview question 1), Station 3 (parking garage), Station 5 (clinical placements), Station 6 (child), and Station 7 (adult). Based on the applicants' mean ratings, Stations 1, 4, and 8 (family friend, standard interview question 2, and the written exercise) were considered to require a certain amount (*somewhat*) of specialised knowledge (refer to Table 8, p. 40).

Table 8

Applicants' Perceptions of the Requirement of Specialised Knowledge

Station	*M*	*SD*	Median	Range	Min	Max
1. Family friend	3.93	1.41	4	6	1	7
2. Why do you want to be a speech language therapist?	2.69	1.81	2	6	1	7
3. Parking garage	3.15	1.94	3	5	1	6
4. What experiences have you had that lead you to believe you would be a good speech language therapist?	3.62	1.96	4	6	1	7
5. Clinical placements	3.15	1.59	3	5	1	6
6. Child	2.22	1.42	2	5	1	6
7. Adult	2.04	1.34	1	4	1	5
8. Written exercise	3.16	1.46	4	5	1	6

Note. The descriptors for this question were from: *none* (score 1) *to a lot* (score 7); score 4 was directly in the middle of the two.

The results of the perceived difficulty of the stations are presented in Table 9 (p. 42). There was a wide range of perceived difficulty for two of the stations: Station 1 (family friend) and Station 3 (parking garage). The mean ratings for these two stations (3.85 and 3.68) indicated that most of the applicants considered these two stations to be moderately difficult (directly in between *easy* and *very difficult*). The other six stations were perceived by most of the applicants as being *easy* or *somewhat easy* (*M* ranged from 2.04 to 3.54).

Table 9

Applicants' Perceived Difficulty of the Stations

Station	*M*	*SD*	Median	Range	Min	Max
1. Family friend	3.85	1.17	4	6	1	7
2. Why do you want to be a speech language therapist?	2.21	1.20	2	4	1	5
3. Parking garage	3.68	1.77	4	6	1	7
4. What experiences have you had that lead you to believe you would be a good speech language therapist?	2.50	1.43	3	4	1	5
5. Clinical placements	3.14	1.27	3	4	1	5
6. Child	2.25	1.30	2	4	1	5
7. Adult	2.04	1.20	1	4	1	5
8. Written exercise	3.54	1.07	3	4	1	5

Note. The descriptors for this question were from: *easy* (score 1) to *very difficult* (score 7); score 4 was directly in the middle of the two.

The applicants' perceptions of the time available for each station are presented in Table 10 (p. 43). All but one of the stations were considered by most of the applicants as being *well timed*, with only Station 3 (parking garage) producing a mean over 4 (M = 4.25, SD = .70). However, the applicants reported variable ratings for two of the stations. The applicants perceived Station 1 (family friend) as being from *too little time* to *almost too much time* (M = 3.96, SD = .92). Similarly Station 6 (child) was considered as being from *too little time* to *too much time* (M = 3.71, SD = 1.21).

Table 10

Applicants' Feedback of the Time Available For the Stations

Station	*M*	*SD*	Median	Range	Min	Max
1. Family friend	3.96	.92	4	5	1	6
2. Why do you want to be a speech language therapist?	3.82	.77	4	4	1	5
3. Parking garage	4.25	.70	4	4	3	7
4. What experiences have you had that lead you to believe you would be a good speech language therapist?	3.86	.76	4	4	1	5
5. Clinical placements	3.96	.51	4	3	2	5
6. Child	3.71	1.21	4	6	1	7
7. Adult	3.79	.74	4	4	1	5
8. Written exercise	4.12	.59	4	3	3	6

Note. The descriptors for this question were from: *too little time* (score 1) to *too much time* (score 7); score 4 was directly in the middle of the two.

Applicants' reported benefits, weaknesses, suggestions for improvements. Next the applicants' responses to the open-ended questions were examined for common themes relating to the benefits of the SLTMMI, the weaknesses, and suggestions for improvements. These are presented in Tables 11, 12, and 13 (pp. 44-46).

The applicants' comments regarding the greatest benefits of the SLTMMI are presented in Table 11 (p. 44). Four main themes emerged. A number of the applicants stated that it was an advantage to get to meet all of the staff. They felt the interview process was fairer, less overwhelming, and more relaxed. One applicant had gained a greater understanding of the programme.

Table 11

Applicants' Reported Greatest Benefits

Themes	Comments
Get to meet all staff	Get to meet all the staff individually Get to meet different people Met a variety of staff Being able to interact with different people Allows you to meet everyone in a friendly & relaxed environment Good meeting all staff
Fairer	Many people makes the evaluation fairer Multiple people will judge your suitability & in different situations All staff getting a better idea of the student than just 2 Better chance to show self [if] 1 station didn't go well, you can recover on the next
Less overwhelming	Not overwhelming – just one interviewer at time Chance to think about questions beforehand Focus on one question at a time
Eases anxiety	Eases nerves Less anxiety, more relaxed feel, gaps between stations was nice to relax Don't have to think about all questions at once If you feel nervous about one question, you could recover before the next station Having time between stations reduced anxiety Seems less formal Allowed you to be yourself Less intimidating than meeting with 2 people Able to talk more freely with one 1-1 is easier & less frightening Helped me to feel comfortable
Greater understanding of the programme	Gained a greater knowledge of what is expected & experiencing some if it yourself

The applicants' comments regarding the greatest weaknesses of the SLTMMI are presented in Table 12 (p. 45). Only three themes emerged. Three applicants reported that they felt that one of the stations (Station 3, parking garage) was poor or "strange". One applicant

stated that a weakness of the process was that it was unexpected. The most common weakness was related to the timing of the stations.

Table 12

Applicants' Reported Greatest Weaknesses

Themes	Comments
Particular station	The car garage Some of the questions were a bit strange – car garage I think the garage needed to be explained
Unfamiliar	Caught me off guard – wasn't expecting it
Time per station	Maybe time at each station [?] Quite hard to keep your train of thought when moving between stations Not enough time at the station Time at the stations – #6 could be longer because it takes a child time to feel comfortable talking to you

The applicants offered three main suggestions for improvements to the SLTMMI, as presented in Table 13 (p. 46). The two most common recommendations were for more time at the stations and for more explanation for Station 3 (parking garage). One applicant suggested applicants should be told about the interview process beforehand.

Table 13

Applicants' Suggestions For Improvements

Themes	Comments
More time per station	More time at the stations More time to read the questions at the stations I felt rushed at some of the stations – more time would be nice
Particular station	The garage station needed more explanation More instructions on the garage station, that it is a role play The garage station should have been clearer that it was a role-play Have more direction with the child & the adult
More preparation	Be informed ahead of time that many different questions would be asked

Interviewers' Responses. Just over half of the interviewers (5/8 = 63%) completed the questionnaires. Descriptive analysis of the interviewers' ratings and their responses to the open-ended questions are presented in this section. Table 14 (p. 47) records the interviewers' perceptions of the interview in terms of the mean, standard deviation, median, the range, the minimum and the maximum. Again italics have been used below to indicate the descriptors for the ratings used in the questionnaires.

Perceptions of the interview process. On the whole, the interviewers were positive about the process. The means of their responses to all four of the questions were over 5.20. The interviewers indicated that they believed they were able to develop an accurate portrayal of the applicants' abilities; that this process was less difficult to administer compared to a standard interview; and that their briefing, and the instructions provided for each station were clear. There was a broader range of views for Question 2 (M = 5.40, SD = 1.52). One interviewer felt that the SLTMMI would be *a little more difficult* to administer than a more traditional interview.

Table 14

Interviewers' Perceptions of the SLTMMI

Question	*M*	*SD*	Median	Range	Min	Max
1. Do you believe you were able to develop an accurate portrayal of the student applicants' abilities?	5.60	.55	6	1	5	6
2. Compared to a more traditional interview, do you think the SLTMMI would be more or less difficult to administer?	5.40	1.52	6	4	3	7
3. Was the briefing provided before the SLTMMI adequate to prepare you for the experience?	6.25	.96	6.5	2	5	7
4. Were the instructions given to the student applicants before each station clear enough?	5.20	.84	5	2	4	6

*Note. T*he descriptors for four questions 1, 3, 4, and 5 were from: *definitely not* (score 1) to *definitely* (score 7); score 4 was directly in the middle of the two. The descriptors for Question 2 were from: *a lot more* (score 1) *to a lot less* (score 7); score 4 was directly in the middle of the two.

Interviewers' reported benefits, weaknesses, suggestions for improvements.

Common themes were drawn from the interviewers' responses to the open-ended questions on the questionnaire. Each of these relate to the benefits and weaknesses of the SLTMMI and suggestions for improvements.

The interviewers' comments regarding the greatest benefits of the SLTMMI are presented in Table 15 (p. 48). Only three themes emerged. Most of the interviewers stated that it was an advantage for all of the staff to get to meet all of the applicants; they felt the interview process was fairer; and that it was simpler to administer than a standard interview process.

Table 15

Interviewers' Reported Greatest Benefits

Themes	Comments
Meeting all students	Meeting all the applicants Staff got to see all students Opportunity for all students to interact with all different staff
Fairer and more comprehensive	Gave all applicants an equality in presenting themselves Each station is a comprehensive assessment of applicants' skills in one or two quality areas Less likelihood for bias using the rating scale & descriptors More in depth appreciation of the students' skills e.g., their interpersonal and thinking skills Decreases the chance that they will do/say what they think you want to hear
Simpler	Only needing to focus on one quality area, e.g. engagement skills with a child Focus on one question only The rating scale & descriptors was very helpful

Only two comments on the greatest weaknesses of the SLTMMI were reported by two interviewers. One reported that they felt the process "could be stressful for students". Another interviewer stated that a weakness of the process was being certain that the station design would serve the intended purpose of eliciting the required information.

Two themes for improvements to the SLTMMI were offered by three interviewers. One suggestion was to video the applicants during the interview process to improve the reliability of the interviewers' ratings. The other suggestions related to the stations. One interviewer reported that the rating descriptors for Station 4 (standard interview question 2) could be clearer; another stated that some stations appeared to elicit the same information, and another interviewer felt that the "face validity of the stations" needed to be increased.

Part B: Station Scoresheets

This set of data consisted of the applicants' (n = 43) scores on the stations, obtained from the deidentified scoresheets. A subset of data was also extracted consisting of those applicants who were excluded from admission into the BSLT programme due to their poor performance on the interview (n = 11). The cut off measure for exclusion was explained in the preceding chapter and is repeated here. As there were eight stations and the maximum score on a station was 7; a score of 4 was considered the minimum of *Satisfactory*. All applicants who scored a total of 32 or over were accepted into the BSLT programme. Conversely, applicants who scored 31 or below were not accepted. The results presented in Part B examine the patterns of performance across the stations and the value of the individual stations in terms of their contribution to the overall interview process.

Applicants' scores. The applicants' scores on the stations are depicted in Table 16 (p. 50) as well as in a box plot chart (Figure 1, p. 51). The box plot provides a visual illustration of all of the scores across the stations. The mean scores for half of the stations ranged from 5.14 to 4.84 (median = 5); the mean scores for the other half of the stations ranged from 3.98 to 4.65 (median = 4). Station 5 (clinical placements) was the only station that produced the full range of scores from 1 to 7. The most common range of scores (from 2 to 7) was produced on half of the stations. All but one of the stations produced highest scores of 7; that station was Station 8 (written exercise) which produced a highest score of 6.

Table 16

Frequencies of All Applicants Stations' Scores

Station	*M*	*SD*	Median	Range	Min	Max
1. Family friend	4.37	1.13	4	5	2	7
2. Why do you want to be a speech language therapist?	5.14	1.32	5	5	2	7
3. Parking garage	4.58	.88	4	4	3	7
4. What experiences have you had that lead you to believe you would be a good speech language therapist?	5.00	1.16	5	4	3	7
5. Clinical placements	5.00	1.53	5	6	1	7
6. Child	4.84	1.21	5	5	2	7
7. Adult	4.65	1.40	4	5	2	7
8. Written exercise	3.98	1.01	4	4	2	6

Figure 1 (p. 51) depicts the applicants' scores, clearly showing the central tendencies, the spread, and the outliers. Outlying values are values that are outside the data set because they differ considerably from the rest of that data. These values are identified as either *outside* or *far out* values. *Outside* values are one step either above the 75th percentile or one step below the 25th percentile. *Far out* values are two steps either above the 75th percentile or below the 25th percentile (Pallant, 2010).

Two stations (Station 3, parking garage and Station 8, written exercise) produced outlying values. Two stations produced the majority of their scores on or above their median (Station 3, parking garage and Station 7, adult). Only Station 8 (written exercise) produced the majority of its scores on or below its median. Station 3 (parking garage) produced three outside values at 7. Station 8 (written exercise) produced 11 outlying values (25%); six

outside values both above and below the median (three values at a score of 2 and three at a score of 5) and five far out values at 6.

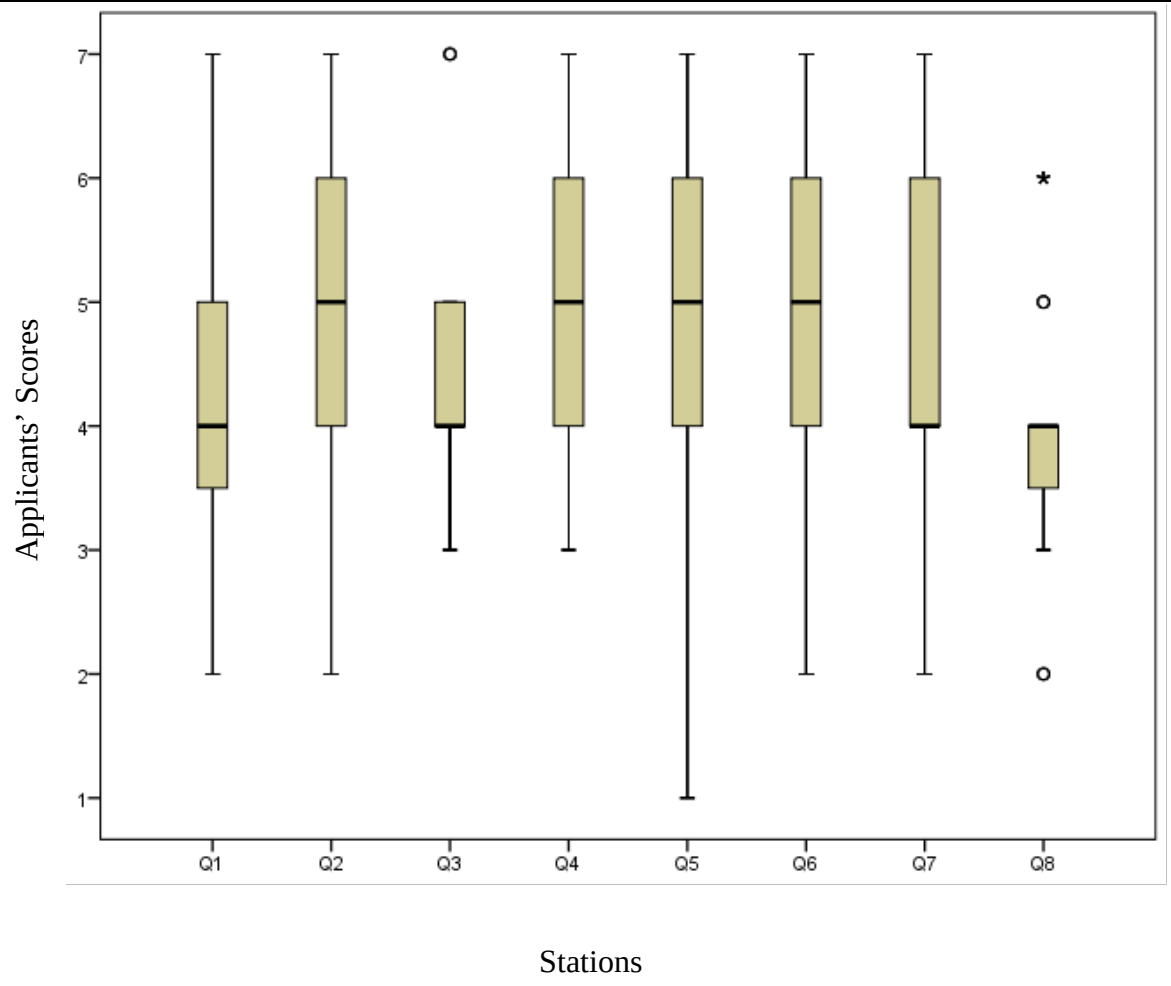

Figure 1. All applicants' scores on all stations. The spread of the scores is demonstrated by the full length of the whiskers. The median is the solid line in the box. The outliers are represented by ^{o} (outside values) and * (far out values).

Excluded applicants' scores. The 11 excluded applicants' scores for the individual stations are presented in the box plot chart in Figure 2 (p. 52). Six of the stations' median scores were at 4, with the majority of the applicants scoring on or below the median on these stations. The other two stations' medians were at 3. Most of the stations' scores fell within a range of scores from 2 to 5 and only one station (Station 6, child) produced a wider range of scores from 2 to 6. The most common lowest score was 2.

Three stations produced outlying values. Station 3 (parking garage) produced two far out values both above and below the median; one at a score of 3 and one at a score of 5. Likewise Station 5 (clinical placements) produced two far out values both above and below the median; one at a score of 1 and one at a score of 6. Station 4 (standard interview question 2) had an outside value at 6.

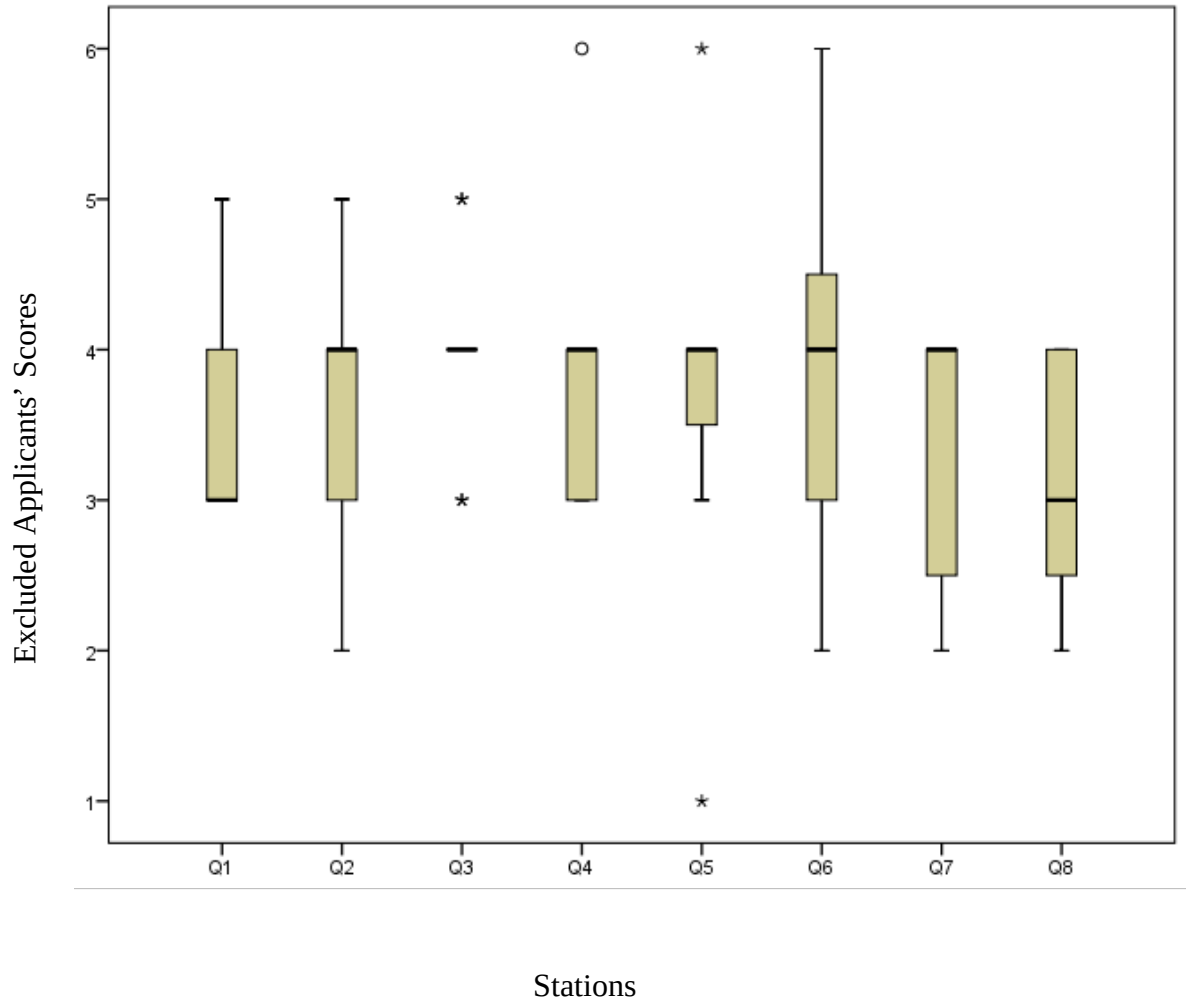

Figure 2. Excluded applicants' scores on all stations. The spread of the scores is demonstrated by the full length of the whiskers. The median is the solid line in the box. The outliers are represented by ^{o} (outside values) and * (far out values).

Next, the excluded applicants' scores were examined to determine how many applicants scored below 4 per station (below *Satisfactory*). These results are presented in the histogram chart in Figure 3 (p. 53). Stations 1 and 8 (family friend and written exercise)

were the most difficult stations for over half of the excluded applicants (with six applicants, 55%, obtaining scores below 4). In contrast, Station 3 (parking garage) was only difficult for two of the applicants (18%, obtaining scores below 4).

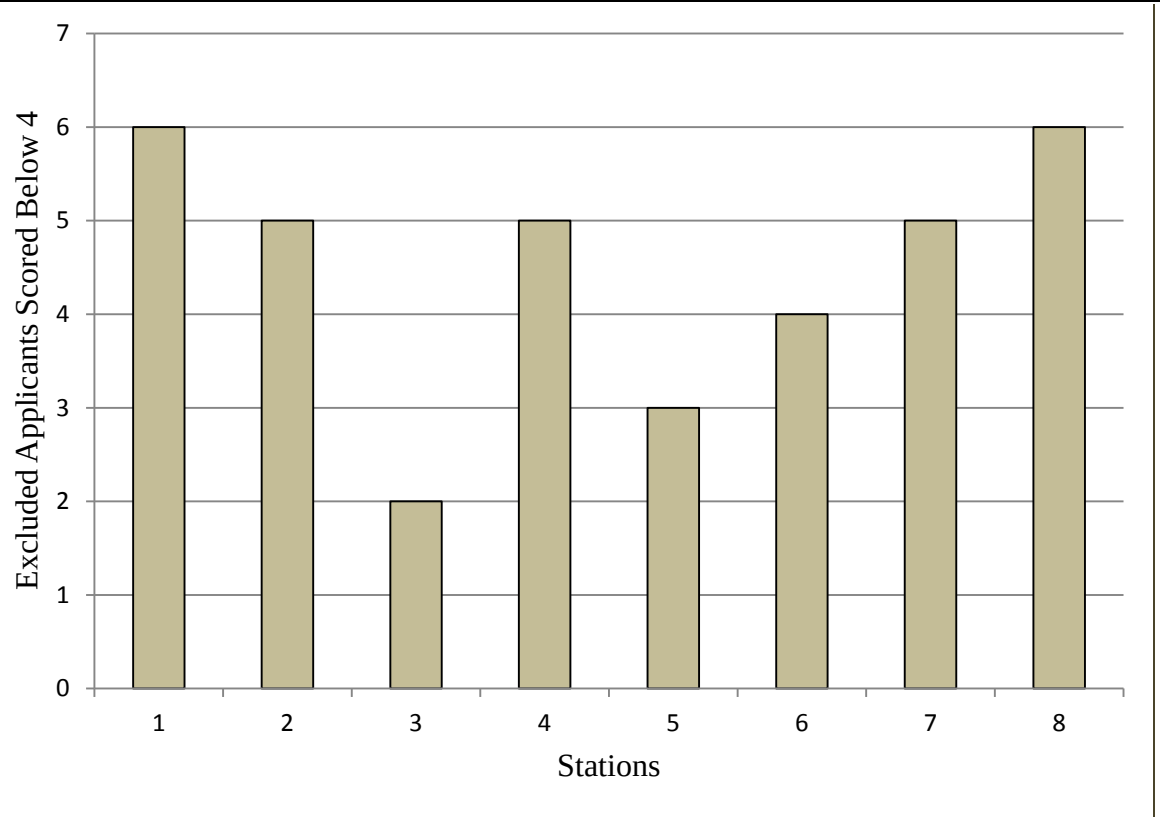

Figure 3. Number of excluded applicants who scored below 4 per station.

Comparing accepted and excluded applicants' scores. A series of *t*-tests were conducted to compare the accepted and excluded applicants' scores across the eight stations. The results are shown in Table 17 (p. 54). Allowing for family-wise error rate, using a Bonferroni correction ($p = .05/8 = .006$), the *t*-tests showed significant differences between the accepted and excluded groups of applicants for all stations except Stations 1 and 3. The mean difference scores and the *p* values show the gap between the accepted and excluded applicants more clearly, particularly for these two stations. Station 3 was not quite significant at .009; its mean difference score was smaller than Station 1's and there was less variance between the means of the accepted and excluded applicants.

Table 17

Comparison of the Accepted and Excluded Applicants Stations' Scores

	Accepted		Excluded		Diff	*t*(41)	*p*	*d*
Station	*M*	*SD*	*M*	*SD*				
1.	4.63	1.13	3.64	.81	.99	2.67	.011	.933
2.	5.69	.97	3.55	.82	2.14	6.58**	.000	2.29
3.	4.78	.87	4.00	.63	.78	2.73	.009	.953
4.	5.44	.88	3.73	.91	1.71	3.64**	.000	1.93
5.	5.44	1.39	3.73	1.19	1.71	3.64**	.001	1.27
6.	5.16	1.08	3.91	1.14	1.25	3.26**	.002	1.14
7.	5.13	1.21	3.27	.91	1.85	4.63**	.000	1.63
8.	4.25	.92	3.18	.87	1.07	3.37**	.002	1.18
Total	5.07	.60	3.63	.34	11.53	7.45**	.000	2.63

Note. ** $p < .006$

Correlations. Pearson's correlations were calculated to investigate the relationships between individual station scores and overall performance, and to examine the relationships among stations. All stations except one station (Station 3) were significantly correlated with the total scores at the $p = < 0.01$ level (Table 18, p. 55). Station 3 was significantly correlated at the $p = < 0.05$ level. Station 7 was the strongest correlated station ($r = 0.84$) and Station 3 was the weakest correlated station ($r = 0.42$).

Table 18

Correlations Between the Stations and the Overall Scores

Station	Correlation Coefficient
1. Family friend	.61**
2. Why do you want to be a speech language therapist?	.77**
3. Parking garage	.42*
4. What experiences have you had that lead you to believe you would be a good speech language therapist?	.77**
5. Clinical placements	.66**
6. Child	.66**
7. Adult	.84**
8. Written exercise	.73**

Note. * $p < .05$. ** $p < 0.01$.

The correlations between the stations are presented in Table 19 (p. 56). Station 3 is the only station that was not significantly correlated with any other station and demonstrated the weakest relationship with Station 6 ($r = 0.07$). Excluding Station 3, the weakest and strongest correlations that were significant were Station 8 with Station 1 ($r = .30$), and Station 8 with Station 7 ($r = .74$).

Table 19

Correlations Between the Stations' Scores

	Correlation Coefficients per Station							
Stations	S1	S2	S3	S4	S5	S6	S7	S8
1. Family friend	-							
2. Why do you want to be an SLT?	.43**	-						
3. Parking garage	.26	.32	-					
4. What experiences have you had that lead you to believe you would be a good SLT	.45**	.63**	.16	-				
5. Clinical placements	.36*	.31*	.18*	.47**	-			
6. Child	.25	.55**	.07	.46**	.23	-		
7. Adult	.37*	.60**	.31	.53**	.47**	.57**	-	
8. Written exercise	.30*	.36*	.20*	.49**	.43**	.48**	.74**	-

Note. * $p < .05$. ** $p < 0.01$.

Reliability of the stations' scores. The internal consistency of the stations was analysed. The Cronbach α coefficient was 0.84 indicating 'good' reliability. A follow up analysis indicated that removing Station 3 resulted in the Cronbach coefficient improving to 0.85 (Table 20, p. 57). In contrast, removing Station 7 reduced the Cronbach coefficient to 0.79.

Table 20

Internal Consistency if Station Deleted

Station	Cronbach's Alpha
1. Family friend	.83
2. Why do you want to be a speech language therapist	.81
3. Parking garage	.85
4. What experiences have you had that lead you to believe you would be a good speech language therapist	.81
5. Clinical placements	.83
6. Child	.82
7. Adult	.79
8. Written exercise	.81

Conclusion

In summary, this chapter presents the findings of this study in relation to the participants' perceptions of the SLTMMI and the value of each of its stations. These results were produced from the analyses of the applicants' and the interviewers' responses to the questionnaires (Part A) and from all of the applicants stations' score sheets (Part B). These findings will be discussed in the next chapter as they relate to the Research Questions 1 and 2 and will be linked to relevant literature reviewed in Chapter 2.

Chapter 5: Discussion

This study was an initial investigation into the acceptability of an innovative admissions interview format for the Bachelor of Speech and Language Therapy (BSLT) programme at Massey University. The study involved the development and then the evaluation of the Speech and Language Therapy Multiple Mini-Interview (SLTMMI). The SLTMMI consisted of eight individual stations that measured non-cognitive attributes, such as applicants' communication skills. The data collection from both parts of the investigation took place during the BSLT programme 2013 Year 1 admission interview process.

In this chapter, the key findings are discussed alongside their significance to some of the literature reviewed in Chapter Two. The discussion brings together the results from Part A (questionnaire data) and Part B (station scoresheet data) to address the two research questions:

1. Is the SLTMMI an acceptable interview format as an admissions interview process for the BSLT Programme at Massey University?
2. What is the value of each station to the SLTMMI?

The chapter begins with the primary findings of the examination into the acceptability of the SLTMMI from the applicants' and the interviewers' perspectives, exploring aspects of the interview process and procedure. The second section discusses the value of the stations' contributions to the interview process. This has been considered from a combination of data sources: the participants' perceptions, the relationships between the stations, and the relationships between the station scores and overall performance. Table 21 (p. 59) links the data sources to the two research questions.

Table 21

Data Sources For the Evaluation of the SLTMMI

Aspect	Data source
Q1. Is the SLTMMI perceived as acceptable for use as an admissions interview procedure for entry into the BSLT Programme?	
Accurate portrayal of applicants	Questionnaires
Anxiety producing	Questionnaires
Overall process & procedures	Questionnaires
Perceived benefits	Questionnaires
Suggested improvements	Questionnaires
Q2. What is the value of each of the stations included in the SLTMMI?	
Requirement of specialised knowledge	Perceived – questionnaires
Difficulty of the stations	Perceived – questionnaires; actual – station scoresheets
Perceived weaknesses	Perceived – questionnaires
Relationships between station scores & overall performance	Station scoresheets
Relationships between the stations	Station scoresheets

Evaluation of the SLTMMI

Acceptable admissions procedure. The participants' perceptions were explored to determine the acceptability of the SLTMMI as an interview procedure. This relates to Research Question 1. The responses to the questionnaires were examined and the key findings are discussed in this first section.

Accurate portrayal. Generally the applicants reported favourably on their experiences of the interview process, consistent with participants in other similar studies (Eva et al., 2004; Harris & Owen, 2007; O'Brien et al., 2011). The applicants indicated that they felt that the SLTMMI enabled them to portray themselves accurately to the interviewers. Likewise, the majority of the interviewers also reported positively on the SLTMMI as a whole and indicated that the interview was a successful process for the applicants to accurately present themselves.

***Anxiety*.** Many of the applicants believed that the SLTMMI process was fairer than a more traditional interview and would not be a barrier to other prospective applicants applying to the BSLT Programme at Massey University. Though there were some applicants who perceived the SLTMMI would cause a degree of anxiety, on the whole most felt that it would cause less anxiety than a more traditional interview format. These findings (fairer process, not an obstacle for future applicants and less anxiety) are consistent with the findings of Eva et al. (2004), Harris and Owen (2007), Lemay et al., (2007), and O'Brien et al. (2011).

***Procedures*.** The majority of the applicants reported that the instructions preceding the interview were adequate and those preceding each station were clear. Likewise the interviewers felt that their briefing and the instructions provided at each station for the applicants were clear.

The interviewers highly valued their preparation and training and indicated the SLTMMI was not difficult to administer. As mentioned in the Chapter 3 Methodology, this interviewer training aspect of Eva et al.'s (2004) study was identified by the interviewers as being weak and was therefore modified for this study.

Overwhelmingly, most of the applicants felt that all of the stations were well timed at 8 minutes. The feedback from this study differed from the findings of Eva et al. (2004). In Eva et al.'s study, some participants reported the MMI stations should be extended from 8 to 10 minutes.

Benefits. The applicants made many more positive comments in relation to the SLTMMI than they did negative, supporting the acceptability of this interview procedure from their perspective. The greatest reported benefits were that the SLTMMI was "less overwhelming" and "less intimidating" and that the process was considered fairer than a traditional interview. One applicant felt that "multiple people will judge your suitability and in different situations" whilst another applicant reported that "you have a better chance to show yourself if one station didn't go well; you can recover on the next". Comments like

these were the most consistently reported and were similar to the comments obtained in Eva et al. (2004), Harris and Owen (2007), Lemay et al. (2007), and O'Brien et al. (2011). An interesting and unexpected benefit of the SLTMMI was some of the applicants' regard for meeting all of the staff, for example, one applicant stated that the SLTMMI "allows you to meet everyone in a friendly and relaxed environment".

Some of the interviewers reported on more than one strength of the SLTMMI. Three main strengths were identified, two of which were similar to those identified by the applicants. Most of the interviewers also indicated that the SLTMMI was fair and comprehensive. Comments such as, "[it] gave all applicants an equality in presenting themselves", "each station is a comprehensive assessment of the applicants' skills in one or two quality areas", and "[there is] less likelihood of bias using a rating scale and descriptors" were three examples of the interviewers' responses. The second strength was the possibility for the staff to meet all of the applicants. This complemented the strength identified by some of the applicants.

Finally, some of the interviewers' stated that the SLTMMI's greatest strength was that it was simpler, "you could focus on just one question only". This response is similar to one of the findings of Eva et al.'s (2004) study in which some of the interviewers reported that their consistency of scoring at their station increased as they became more aware of the responses to expect.

Improvements. Though most of the participants reported favourably on the SLTMMI, the findings also highlighted some issues that could be addressed for immediate improvements to the process and/or have implications for future research. The three most immediate issues raised were the level of the anxiety felt by some applicants and the SLTMMI's reliability and validity.

The perception that the SLTMMI would cause some anxiety was indicated by approximately one third of the applicants and also one interviewer who commented that the

SLTMMI could be stressful for applicants. This issue could be addressed by notifying the applicants about the interview procedure ahead of time. This was suggested by one of the applicants, who also stated it was “unexpected”. A possible investigation into the aspects of the SLTMMI that cause anxiety could also be considered for future research.

Other issues related to the reliability and validity of the SLTMMI, raised by two of the interviewers. One interviewer suggested the use of “video to analyse the prompts we provided”, which would influence the SLTMMI’s reliability. A second interviewer cautioned that there is “a need to ensure the station tasks elicit the types of responses they are intended to elicit”. This aspect refers to the SLTMMI’s construct validity which is another potential area for future research.

Summary. The discussion in this section has focussed on the primary findings as they relate to Research Question 1. The findings address the evaluation of the SLTMMI from the participants’ perspectives in regards to their perceptions of five key aspects of the interview process. The findings provide valuable evidence for the use of the SLTMMI. Both the applicants and the interviewers indicated that it is an acceptable interview process and highlighted benefits to using this procedure over a traditional format. However both groups of participants identified some issues and suggestions for potential changes to the SLTMMI and/or future research. The next section discusses the value and significance of the SLTMMI stations.

The value of the SLTMMI stations. The examination of the individual stations contributes to the overall evaluation of the SLTMMI. This relates to Research Question 2. The value of individual stations was assessed through a variety of data sources including the participants’ perceptions, the relationships between the stations and the relationships between the station scores and overall performance (see Table 21 for the outline of these aspects and the data sources, p. 59). These findings are discussed below as they address different aspects

relating to Research Question 2 and are then merged as a summary for each of the stations. The ratings' descriptors on the questionnaires are conveyed in italics.

Requirement of specialised knowledge. It is preferable that stations do not require specialised knowledge as this would disadvantage some applicants. Specialised knowledge refers to specific speech and language academic or practice knowledge. On the other hand, general knowledge of the roles of a speech and language therapist (SLT) would be considered an indication of an applicant's interest and motivation. This knowledge refers to Station 2 (standard interview question 1, reasons for being an SLT) and Station 4 (standard interview question 2, explanation of why the applicant believes they would be a good SLT).

On the whole, most of the applicants indicated that no station required *a lot* of specialised knowledge. Just over half of the stations (five of the eight) were considered by the majority of applicants to require little specialised knowledge. These stations (2, 3, 5, 6, and 7) involved questions on the applicants' reasons for wanting to be an SLT, the role-play scenario of the parking garage, the clinical placement station, and the stations involving interactions with the adult and the child.

On the other hand, the majority of the applicants had mixed views about the requirement of specialised knowledge on the other three stations. This view appears reasonable as one of the stations, Station 1 (family friend), asked the applicants about the ethical issues of a student providing SLT to a family friend; not a question that the applicants may have considered before.

Station 4 asked the applicants to describe the experiences that had led them to believe that they would be a good SLT. This could be difficult for those applicants who had had little relevant experience. Greenwood, Wright and Bithell (2006) investigating high school students' perceptions of SLT found that one third of these students knew nothing about speech and language therapy, however, those who had relatives in allied health occupations were more likely to consider speech and language therapy as a career.

Not surprisingly, the third station that was viewed as a station that required some specialised knowledge was Station 8 (written exercise). This station involved the ability to demonstrate some simple English grammar skills as well as some self-reflection skills. The self-reflection section required the applicants to reflect on the quality of their interactions with the adult and the child. This is a reasonably difficult skill as the applicants must attempt to identify at least one example of what they believed went well, what did not go well, and what they could do differently next time. It should be noted that a *Satisfactory* response to this station included any degree of self-reflection (awareness), not a demonstration of critical analysis. In their standardised competency assessment tool for speech and language therapy, McAllister, Lincoln, Ferguson, McAllister (2013) suggest that the ability to self-reflect requires a high level of supervisory support in the initial stages of development, especially as it is relates to the student's own performance and not to the client's.

Difficulty of the stations (perceived and actual). Further explored aspects of the SLTMMI were the applicants' perceived views of the difficulty of the stations and the actual difficulty of the stations justified by the applicants' scores. On the whole, most of the applicants perceived the stations as being reasonably easy, apart from two. These two stations were reported as being only moderately difficult (in the middle of *easy* and *difficult*).

Again, Station 1 (family friend) was indicated to be a moderately difficult station by most of the applicants. As mentioned above, this station was also perceived by some applicants as requiring some specialised knowledge. The station raised an ethical dilemma which may have contributed to the perceived difficulty of the station. Ethical reasoning emerges from our moral reasoning which develops sequentially over time (Kohlberg, 1984). Some applicants may not have recognised the inherent ethical issues in this station's dilemma. Based on the scoresheet data, Station 1 was one of the most difficult stations for most of the excluded applicants (over half of these scored below 4).

The other station that was perceived as moderately difficult was Station 3 (parking garage scenario). This station was confirmed as a difficult station based on the scoresheet data (only three applicants scored over 5). As the station was not identified as requiring specialised knowledge, the difficulty may have been due to other reasons. For example, it could have been due the role-play nature of the station, the stressful nature of the scenario, or due to some uncertainty about the station. A few of the applicants reported that this station could be improved with more explanation.

Station weaknesses. No weaknesses were reported by the interviewers in both Harris and Owen's (2007) or Lemay et al.'s (2007) studies. However, the greatest weaknesses of the SLTMMI considered by the interviewers in this study were interestingly different from Eva et al.'s (2004) and O'Brien et al.'s (2011) studies. Whilst some of interviewers in the other studies found the MMI tiring, boring, or felt they couldn't get a holistic perspective of the applicants, two interviewers in this study identified concerns relating to its reliability and validity (as mentioned above).

Seven applicants reported on the SLTMMI's greatest weaknesses. Over half of these agreed with some of the participants of Eva et al.'s (2004) study, who stated that the stations should be lengthened. In particular, one SLT applicant felt that Station 6, (child), "could be longer because it takes a child time to feel comfortable talking to you". However this feedback was only indicated by four applicants and is not sufficient to outweigh the findings of the majority of the applicants who felt the stations were well-timed as reported above.

Another weakness identified by two of the applicants concerned a particular station, Station 3 (the parking garage). One applicant reported that this station was "a bit strange". The other applicant simply singled this station out as a weakness of the SLTMMI. These comments may be linked to some of the applicants' perceived need for specialised knowledge or the possible difficulty of this station. Nevertheless, these findings contribute to the identification of some issues with this station.

Relationships between station scores & overall performance. The total number of applicants was 43; 11 applicants scored 31 or below and were excluded from admission. Based on the scoresheet data, the majority of the stations produced a wide range of scores from 2 to 7; only Station 5 (clinical placements) produced the full range 1 to 7. Most of the excluded applicants scored 4 or below on all the stations, however the lowest score of these applicants was 2.

Station 2 (standard interview question 1) showed the greatest difference between the accepted and excluded applicants. The mean difference in scores between the two groups was 2.14, ($t(41) = 6.58$, $p = < .006$). This finding is to be anticipated as applicants who indicated suitable reasons for wanting to be an SLT would be rated more highly than those who did not.

Another valuable station was Station 7 (adult). This station demonstrated the strongest relationship to the applicants' overall scores ($r = 0.84$) and contributed the most strongly to the stations' internal consistency. The Cronbach alpha coefficient would reduce from 0.84 to 0.79 if this station was removed.

Station 1 (family friend) showed no statistically significant difference between the two groups of applicants with a mean difference between the two groups of 0.99, ($t(41) = 2.67$, $p = > .006$), confirming less difference between the two groups than occurred with other measures. The other station which was not statistically significant was Station 3 (parking garage) with a mean difference between the accepted and excluded groups of 0.78, ($t(41) = 2.73$, $p. > .006$). A possible explanation is that most of the applicants, including those who were excluded, did reasonably well on this station; only two applicants, who also did poorly overall, struggled with this station. It may be that this station could be removed or replaced. As discussed earlier, it was not well liked by some of the participants. It was indicated as being one of the weaknesses, "was a bit strange" and "needed to be explained". Another reason for removing or replacing this station was that the internal consistency of the stations were improved when this station was removed (from $\alpha = 0.84$ to $\alpha = 0.85$).

Station 8 (written exercise) was not perceived to be difficult by most of the applicants, however, the majority of the applicants and all those who were excluded scored poorly on this station. Station 8 produced the smallest ranges of scores (3 or 4, excluding the outliers). Eight applicants (almost 20%) excelled on this station.

Relationships between the stations. The SLTMMI stations can be grouped into categories of their main focus (see Table 2, the Methodology chapter, p. 25): insight and problem identification (Station 1, 3, 5), communication skills (stations 6, 7, 8), and knowledge of SLT (stations 2 and 4). The correlations within the communication stations were moderate to large (ranging from $r = 0.48$ – $r = 0.74$), as were those within the two knowledge of SLT stations ($r = 0.63$). However, the relationships within the insight and problem identification group were weak (ranging from $r = 0.18$ – $r = 0.36$).

Again Station 3 (parking garage) is noteworthy. Not only was it not significantly correlated to any station within its group, but neither was it significantly correlated to any other station of the SLTMMI (ranging from $r = 0.07$ – $r = 0.31$). Perhaps this station is measuring something different from its intended purpose and from the other stations. These issues could be considered for future investigation and/or the station could be removed (or replaced).

***Summary*.** A summary of the above findings as they relate to each station is presented in Table 22 below (p. 68)

Table 22

Summary of Station Evaluations

Station	Summary
1 (family friend)	Mixed views on the need for specialised knowledge Perceived as moderately difficult Was one of the most difficult for the excluded applicants One of the two least discriminating stations
Station 2 (standard interview question 1)	Perceived as requiring little specialised knowledge Most discriminating station
Station 3 (parking garage)	Perceived as requiring little specialised knowledge Perceived as moderately difficult Was difficult for all but three of the applicants Disliked by a number of the applicants; needed more explanation One of the two least discriminating stations Not strongly correlated to any other station, possibly measuring something different Negative influence on the internal consistency of the stations
Station 4 (standard interview question 2)	Mixed views on the need for specialised knowledge
Station 5 (clinical placements)	Perceived as requiring little specialised knowledge Widest range of scores (full range)
Station 6 (child)	Perceived as requiring little specialised knowledge
Station 7 (adult)	Perceived as requiring little specialised knowledge Positive influence on the internal consistency of the stations
Station 8 (written exercise)	Mixed views on the need for specialised knowledge One of the most difficult stations

Conclusion

This chapter has discussed the key findings of this study with reference to the two research questions. The study has provided useful evidence to support the use of the SLTMMI. However, the findings have also revealed some specific issues that could be addressed to improve it.

Overall, the participants preferred the SLTMMI process over a more traditional interview format. The SLTMMI was considered by most of the participants as fairer, simpler, and a more relaxed interview process. The applicants valued meeting more of the staff; the staff appreciated meeting all of the applicants. Some of the participants indicated that the SLTMMI was more comprehensive than a traditional interview format. Generally, the participants believed that they were able to present an accurate portrayal of themselves and the interviewers agreed. The majority of the applicants indicated that the initial briefing and the instruction procedures for the stations were clear. The interviewers valued their training. The stations were not considered too difficult and their timing worked well. Only three stations were considered by some of the applicants to require some specialised knowledge.

Though it was felt by the majority of the applicants that the SLTMMI would not put other applicants off or be a barrier to applying to the BSLT Programme, there was the perception that the SLTMMI may cause some anxiety. This issue requires some attention, for example, the interview process could be explained in more detail before the day of the interview. Further, the aspects of the SLTMMI that are perceived to cause anxiety could be investigated so that they could be managed more appropriately.

The participants highlighted more benefits to the use of the SLTMMI than weaknesses, however, some areas of improvement were suggested. One interviewer mentioned the need to examine the reliability and validity. The evaluation of the stations revealed additional issues with the stations, for example, particularly Stations 1 and 3. These two stations did not discriminate well between the applicants. Further examination indicated that Station 3 should be removed or replaced.

The following chapter draws conclusions of the study considering these findings in relation to the research questions and existing research. The methodology is reflected on as well as implications for clinical practice. Lastly, further research considerations are presented.

Chapter 6: Conclusion

This chapter presents conclusions of the study's findings and discusses the significance of their contribution to existing research on the use of the multiple mini-interview (MMI) for selected entry programmes. The chapter then outlines the study's limitations reflecting on the methodology. The findings have implications for the future use of the SLTMMI process and these will be presented, followed by some potential directions for further research on this innovative interview process for speech and language therapy.

Purpose and Rationale of the Study

This study has explored the development and value of an innovative admissions procedure modelled on the multiple mini-interview (MMI) (Eva et al., 2004). Following a critical analysis of the value of interview procedures, I concluded that an MMI for speech and language therapy was worth investigating as an improvement to the traditional interview format that was previously used by the Bachelor of Speech and Language Therapy (BSLT) programme at Massey University. This decision was based on the emerging supportive evidence for the MMI process in medicine over the past decade.

One of the strongest arguments for the MMI is its reliability and validity (Eva et al., 2004; Eva et al. 2009; Lemay et al., 2007; O'Brien et al., 2011). The process is also considered to require less resources and is more efficient (Eva et al. 2004; Harris & Owen, 2007; Rosenfeld et al., 2008). The MMI is a simpler process (Harris & Owen, 2007), fairer (Lemay et al., 2007), and an acceptable interview process for both applicants and interviewers (Eva et al.2004; Harris & Owen, 2007; Lemay et al., 2007; O'Brien et al., 2011).

Through a case study and pre-experimental method of investigation, the key findings from this study support the acceptability of the SLTMMI process for the BSLT programme at Massey University. Most of the applicants' and the interviewers' perceptions were positive

and in favour of this process over a traditional format. Furthermore, the investigation into the value of the stations also indicated the SLTMMI has potential as an appropriate admissions interview process. Some issues with both the procedure and the stations have been revealed which can lead to improvements and/or areas for further research.

Further, the efficacy of use of admission interviews for speech and language therapy has not been concluded in the literature, though interviews are commonly used as a means to ensure weak applicants are identified and excluded from entry (Shapiro et al., 2002). This study is the first to introduce and evaluate an MMI for speech and language therapy and contributes to the evidence of support of the MMI as a preferred interview process.

Limitations

The case study approach suited the study's purpose and research questions, however the participants' experiences and views cannot be considered representative of future applicants and interviewers. The findings suggest that the SLTMMI is worth considering as a suitable interview process for our purposes but additional investigations are needed to confirm the degree of its value for future use. Other limitations of the study include potential bias issues, some stations' content, and the use of actors.

Two potential issues of bias included my involvement as the researcher and the applicants who were applying to the BSLT programme as well as participating in this study. My role was limited to the manager of the study and an interviewer only. I was not involved as an interviewer participant. Though I was a colleague of the interviewer participants, their participation was anonymous and there was no discussion about their feedback until after the data had been analysed.

The other potential issue involved the applicants. In participating in the study, the applicants were asked to comment on a process that was also instrumental in their evaluation. To manage this conflict, the applicants were assured that their participation was anonymous

and voluntary. Their responses to the questionnaire could not be linked to their performance during the interview and consequently could not influence their admission into or exclusion from the BSLT Programme.

A third limitation involved the content of the stations. Some of the stations' content had been trialled before as they were replications of our previous format, for example, the two standard interview questions, and the interactions with the adult and the child. However some others were new and potential issues were difficult to predict. The issues with the stations indicated by the participants and the station scoresheet analyses have highlighted some problems with some of these stations' content, particularly Station 3 (parking garage). This station was new and similar to one used by Eva et al. (2004). The findings suggest this is a weak station, adds little value to the SLTMMI, and therefore needs replacing.

Another aspect of the stations' content related to the possible influence of the actors' schedule. The scoring remained the same for these stations, however the variation in the adults and the children over the interview period may have meant the interaction was more difficult or easier for some applicants. As the scoresheets were deidentified, further examination of the variation in actors cannot be examined, but could be considered in future research.

Implications for Clinical Use

This study has argued for the benefits of the use of interviews as part of the admissions procedure for preselected entry programmes and more specifically for the use of the MMI process. Furthermore, this study has provided sufficient justification to pursue the use of the SLTMMI for the BSLT programme at Massey University. This study represents the first step towards future development of the SLTMMI. Some immediate modifications, can be made to address some of the issues the evaluation revealed. These modifications could

include alerting the applicants ahead of time of the SLTMMI process and replacing the content of Station 3.

This study has also affirmed that the SLTMMI exhibits some of the strengths that the interview process provides. Based on these initial findings, the SLTMMI offers the capacity to gather additional information about the applicants and the applicants about the programme. The SLTMMI also provides the opportunity for personal engagement valued by both the applicants and the interviewers, the opportunity for applicants to successfully demonstrate their personal qualities, and an indication that the SLTMMI could successfully discriminate between suitable and non-suitable applicants.

Implications for Further Research

Whilst this study has provided valuable confirmation of the use of the SLTMMI, this was an initial trial and evaluation. The study's findings need to be confirmed to develop assurance of its value. This can be achieved by immediately addressing some of the process and station content issues mentioned above and also through further research.

Some recommendations for further areas of research for the SLTMMI might include an understanding of the anxiety that the SLTMMI may cause some applicants. Though most of the participants indicated that the interview process would not cause any more anxiety than a traditional interview, nevertheless approximately one third of the applicants and one interviewer indicated that it might. This is a reasonable number of participants and sufficient to consider investigating possible reasons these comments were made.

In addition to replacing or modifying Station 3's content, supplemental stations could be developed to enable the establishment of a 'bank' of stations and allow for more than one version of the SLTMMI. As additional versions are developed, the possibility of some applicants having an advantage over others may decrease as the opportunity to prepare for the interview becomes more difficult.

Another investigation may involve investigating the most appropriate measure for the cut off that determines successful entry into the BSLT programme. The cut off on this occasion was set at a total score of 32. This was modelled on our previous interview process, which also used Likert ratings. However, another measure of selection may be fairer, for example, six stations with a minimum of 4.

Other areas of further research include the SLTMMI's psychometric characteristics. The MMI has achieved acceptable levels of reliability and validity (Eva et al., 2009; O'Brien et al, 2011; Rosenfeld et al., 2008). However, no studies have successfully determined an evaluation method that can confidently predict successful clinical performance. A comprehensive longitudinal investigation into the predictive validity of the SLTMMI for successful clinical competency performance would be beneficial. Other useful validity investigations could evaluate the construct validity (the SLTMMI is measuring what intends to measure).

One of the interviewers suggested an additional area for consideration involved the interviewers' interrater reliability. The use of video could enable an examination of the different types of prompts and degrees of support the interviewers provided. The video would also provide the opportunity to carry out checks for consistency of ratings.

Concluding Comments

The aim of the study was to evaluate the use of an SLTMMI as a potentially suitable and appropriate process to measure the non-cognitive attributes of student applicants into the Massey University BSLT programme. The initial findings have confirmed its acceptability and potential as an improved admissions interview process.

This study has been the first investigation into the use of the MMI process for speech and language therapy. In doing so, it has also contributed to the growing evidence for the benefits of the MMI process as an improved admissions interview format.

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Appendices

Appendix A

MASSEY UNIVERSITY

SPEECH AND LANGUAGE THERAPY MULTIPLE MINI-INTERVIEW
Stations

Station 1: Family Friend (Ethical Decision Making)
You are a student in the Bachelor of Speech and Language Therapy Programme. A family friend has a child who has speech difficulties. The family asks you to provide some speech and language therapy intervention to their child.

Consider the ethical problems that this request might pose. Discuss these issues with the interviewer.

Station 2: Standard Interview 1
Why do you want to be a speech and language therapist? Discuss this question with the interviewer. *You will also have the opportunity to ask questions about the SLT profession and our Programme at this Station.*

Station 3: Parking Garage (Communication Skills)
The parking garage at your place of work has assigned parking spots. On leaving your spot, you are observed by the garage attendant as you back into a neighbouring car, an Audi, knocking out its left headlight and denting the left front fender. The garage attendant gives you the name and office number of the owner of the neighbouring car, telling you that he is calling ahead to the car owner, Debbie. The garage attendant tells you that Debbie is expecting your visit.

Enter Debbie's office.

Station 4: Standard Interview 2
What experiences have you had and what insights have you gained that lead you to believe you would be a good speech and language therapist?

Discuss your responses with the interviewer.

Station 5: Clinical Placements (Insight and Problem Identification Skills)
Some professional degree programmes, such as speech and language therapy and nursing, source the clinical placements and allocate the students to the placements. Other programmes, such as physiotherapy, require the students to arrange their own clinical placements.

Consider the issues involved in each of the two approaches. From a student perspective, what are some advantages and disadvantages for both of these approaches?

Discuss the issues with the interviewer.
Station 6: Child (Communication Skills)

Preschool child – you will view a video of a child engaged in a speech and language therapy session. Your task is to observe what the therapist does, how the child responds, and consider yourself in the role of the therapist as you observe. Station 8 will require you to discuss your reflection.

Station 7: Adult (Communication Skills)
Adult – you will view a video of an adult client engaged in a speech and language therapy session. Your task is to observe what the therapist does, how the client responds, and consider yourself in the role of the therapist as you observe. Station 8 will require you to discuss your reflection.

Station 8: Written exercise (Written Communication Skills & Insight)
This station is the final station.
You need to complete:

- Two reflections
- A written exercise

1. **Reflection**

You have just experienced chatting with an unfamiliar adult and child. Consider how you felt the chat went. What went well? What would you change if you were to do it over again?
Write your thoughts on the TWO pages provided (ONE for the adult; ONE for the child).

2. **Written Exercise**

We use language to communicate verbally and in written form. The English language is full of words with different meanings. The questions on the sheet will give you the opportunity to demonstrate your written communication skills. Answer the questions on the sheet.

When you are finished, please hand your sheets to our administration clerk.

Appendix B

MASSEY UNIVERSITY

Information Sheet (Actors)

Speech and Language Therapy Admission Interviews 2013

1) What is the interview process for?
All prospective student applicants into the Massey University Speech and Language Therapy Programme are involved in an interview process as part of their admission into the Programme. The interview process enables us to evaluate applicants' personal qualities and attributes, for example, their interpersonal communication skills.

2) Where do the interviews take place?
The interviews take place at the Massey University Speech and Language Therapy Clinic, Building 92, Wharerata Rd, Albany.

3) How does the interview process involve actors?
Two interview stations require an actor's involvement (one station involves an adult and one station involves a child). Both stations operate in the same way. Each station lasts eight minutes. The actor is situated in a station room (clinic room). A student applicant will enter and will initiate a conversation between the actor and themselves. The actors are only required to respond to the student applicants' conversational interactions if they wish to. In the case of the child actor, the student applicant may also initiate play. In which case, the child is free to engage with the student if they want to. A staff member will be observing the station and indicate when the station is finished. The staff member will also be available to provide any assistance at any time and if the actor were to feel uncomfortable. The interaction between the actor and the student applicant may be video and audio taped. If this occurs, the video and audio recordings will be kept and used only for the purpose of analysis by members of the speech and language therapy staff.

5) How much time will the interview process take?
The entire process occurs over four days, however, actors are invited to attend only when they are available. Regular refreshment breaks will be provided on each interview day.

6) Can I withdraw from this process?
Your involvement in this process is voluntary and you can withdraw at any time.

7) What if I need further information?
If you would like any more information, please feel free to contact me (Yvonne Cope) on 09-414 0800 ext. 41566 or y.cope@massey.ac.nz .

Appendix C

MASSEY UNIVERSITY

SLT MMI | STATION 2 MARKING SHEET

Student Name: _____ Massey ID: _____ Date: _____

Station 2: Standard Interview 1
Why do you want to be a speech and language therapist?
Discuss this question with the interviewer.

Interviewer instructions:
Rate the student's response according to the criteria in the boxes below. The boxes/ratings in between indicate 'in between these' to a lesser/more degree. Add comments to justify your ratings.

Poor			Satisfactory			Excellent
1	2	3	4	5	6	7
• Lacks confidence • Unclear speech • Weak language skills or formulation of response • Weak self identity, does not communicate own qualities appropriate for role • Does not demonstrate motivation			• Reasonably confident • Speech clear • Logical response • Demonstrates satisfactory self identity , communicates own qualities appropriate for role • Demonstrates satisfactory motivation, enthusiasm			• Confident • Clear speech • Cohesive logical response • Demonstrates strong self identity, e.g., able to communicate own appropriateness for role • Demonstrates strong motivation, enthusiasm • Has relevant transferrable skills

Appendix D

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
ALBANY

Impressions of a Multiple Station Speech and Language Therapy Admissions Interview: An Innovative Approach

INFORMATION SHEET (STUDENTS)

Hi, my name is Yvonne Cope. I am a postgraduate student. This project is partial fulfilment of the Degree of Master of Speech and Language Therapy at Massey University, Auckland, under the supervision of Associate Professor, Helen Southwood.

I am interested in developing an improved interview tool for use with students applying for our Speech and Language Therapy Programme. This project is a scoping study to investigate the feasibility and acceptability of the speech and language multiple station interview process (SLT MMI).

All student applicants for the 2013 Bachelor of Speech and Language Therapy degree who will be involved in the interview process are invited to participate.

Project Procedures
Immediately following the interview process, you will be invited to complete a questionnaire. The questionnaire will collect information about your opinions of your experiences of the SLT MMI. Completing the questionnaire should take no longer than 20 minutes. Your participation is voluntary and anonymous. Completed questionnaires can be placed in the collection box on your way out.

The questionnaires will be stored securely at Massey University for a period of no longer than five years following completion of the project. Individual participants will not be identifiable in any reports.

Participants' Rights
You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- Decline to answer any question in the questionnaire;
- Ask any questions about the project at any time during participation;
- Be given access to a summary of the project findings when it is concluded.

Project Contacts
If you would like any more information, please feel free to contact me (Yvonne Cope) on 09 414 0800 x41566 or y.cope@massey.ac.nz .

This project has been reviewed and approved by the Massey University Humans Ethics Committee: Northern, Application MUHEN 12/079. If you have any concerns about the conduct of this research, please contact Dr. Ralph Bathurst, Chair, Massey University Humans Ethics Committee: Northern, telephone 09 414 0800 x43404, email humanethicsnorth@massey.ac.nz

Appendix E

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
ALBANY

Impressions of a Multiple Station Speech and Language Therapy Admissions Interview: An Innovative Approach

INFORMATION SHEET (INTERVIEWERS)

Hi, I am undertaking this project as partial fulfilment of the Degree of Master of Speech and Language Therapy at Massey University, Auckland, under the supervision of Associate Professor, Helen Southwood.

I am interested in developing an improved interview tool for use with students applying for our Speech and Language Therapy Programme. This project is a scoping study to investigate the feasibility and acceptability of the speech and language multiple station interview process (SLT MMI).

All interviewers involved in the interview process of our 2013 Year 1 applicants are invited to participate.

Project Procedures
Immediately following the last student applicant interview, you will be invited to complete a questionnaire. The questionnaire will collect information about your opinions of your experiences of the SLT MMI. Completing the questionnaire should take no longer than 20 minutes. Your participation is voluntary and anonymous. Completed questionnaires can be placed in the collection box in the Waiting Room.

Data Management
The information from the questionnaires will be kept confidential. The questionnaires will be stored securely at Massey University for a period of no longer than five years following completion of the project. Individual participants will not be identifiable in any reports.

Participants' Rights
You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- Decline to answer any particular question in the questionnaire;
- Ask any questions about the project at any time during participation;
- Be given access to a summary of the project findings when it is concluded.

Project Contacts
If you would like any more information, please feel free to contact me (Yvonne Cope) on 09 414 0800 x41566 or y.cope@massey.ac.nz .

This project has been reviewed and approved by the Massey University Humans Ethics Committee: Northern, Application MUHEN 12/079. If you have any concerns about the conduct of this research,

please contact Dr. Ralp Bathhurst, Chair, Massey University Humans Ethics Committee: Northern, telephone 09 414 0800 x43404, email humanethicsnorth@massey.ac.nz

Appendix F

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
ALBANY

Impressions of a Multiple Station Speech and Language Therapy Admissions Interview: An Innovative Approach

POST-INTERVIEW QUESTIONNAIRE (STUDENTS)

Read each question and tick (√) the box that most closely represents your experience of the speech and language therapy multiple station interview process (SLT MMI). You can use the blank boxes in between the boxes with words to indicate "in between these two".

You do NOT have to answer all questions.

This first section relates to the interview process. *You are free to skip any or all questions.*							
Question	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. Do you believe that you were able to present an accurate portrayal of your ability?	Definitely not		Not really		Somewhat		Definitely
2. Compared to a more traditional interview*, do you think the SLT MMI would cause student applicants more or less anxiety? (*Interview involving two interviewers only)	A lot more		A little more		A little less		A lot less
3. Would the use of the SLT MMI stop future students from applying to Massey University's Speech and Language Therapy Programme?	Definitely not		Not really		Somewhat		Definitely
4. Were the instructions given before the SLT MMI adequate to prepare you for the experience?	Definitely not		Not really		Somewhat		Definitely
5. Were the instructions given before each station clear enough?	Definitely not		Not really		Somewhat		Definitely

This section relates to each of the stations. *You are free to skip any or all questions.*							
6. Station 1 (Family friend)							
Do you think this station required specialised knowledge?	None			Somewhat			A lot
How difficult was this station?	Easy		Somewhat easy		Difficult		Very difficult
Was the time available for this station appropriate?	Too little time			Well timed			Too much time
7. Station 2 (Why do you want to be…?)							
Do you think this station required specialised knowledge?	None			Somewhat			A lot
How difficult was this station?	Easy		Somewhat easy		Difficult		Very difficult
Was the time available for this station appropriate?	Too little time			Well timed			Too much time
8. Station 3 (Parking garage)							
Do you think this station required specialised knowledge?	None			Somewhat			A lot
How difficult was this station?	Easy		Somewhat easy		Difficult		Very difficult
Was the time available for this station appropriate?	Too little time			Well timed			Too much time
9. Station 4 (What experiences have you had…?)							
Do you think this station required specialised knowledge?	None			Somewhat			A lot
How difficult was this station?	Easy		Somewhat easy		Difficult		Very difficult
Was the time available for this station appropriate?	Too little time			Well timed			Too much time
10. Station 5 (Clinical placements)							
Do you think this station required specialised knowledge?	None			Somewhat			A lot
How difficult was this station?	Easy		Somewhat easy		Difficult		Very difficult
Was the time available for this station appropriate?	Too little time			Well timed			Too much time

11. Station 6 (Child)							
Do you think this station required specialised knowledge?	None			Somewhat			A lot
How difficult was this station?	Easy		Somewhat easy		Difficult		Very difficult
Was the time available for this station appropriate?	Too little time			Well timed			Too much time
12. Station 7 (Adult)							
Do you think this station required specialised knowledge?	None			Somewhat			A lot
How difficult was this station?	Easy		Somewhat easy		Difficult		Very difficult
Was the time available for this station appropriate?	Too little time			Well timed			Too much time
13. Station 8 (Written reflection)							
Do you think this station required specialised knowledge?	None			Somewhat			A lot
How difficult was this station?	Easy		Somewhat easy		Difficult		Very difficult
Was the time available for this station appropriate?	Too little time			Well timed			Too much time

This last section asks for your views of the SLT MMI as a whole. *You are free to skip any or all questions.*

14. What do you believe to be the greatest benefits of using the SLT MMI?	
15. Are there any improvements you would like to see made to the SLT MMI?	
16. What do you believe to be the greatest weaknesses of the SLT MMI?	

Please post the questionnaire in the collection box provided.
Thanks for your assistance and participation in this research project.

Appendix G

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
ALBANY

Impressions of a Multiple Station Speech and Language Therapy Admissions Interview: An Innovative Approach

POST-INTERVIEW QUESTIONNAIRE (INTERVIEWERS)

Read each question and tick (√) the box that most closely represents your experience of the speech and language therapy multiple station interview process (SLT MMI). You can use the blank boxes in between the boxes with words to indicate "in between these two".

You do NOT have to answer all questions.

This first section relates to the interview process. *You are free to skip any or all questions.*							
Question	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. Do you believe that you were able to develop an accurate portrayal of the student applicants' abilities at your interview station?	Definitely not		Not really		Somewhat		Definitely
2. Compared to a more traditional interview*, do you think the SLT MMI would be more or less difficult to administer (from the point of view of an interviewer)? (*Interview involving two interviewers only)	A lot more		A little more		A little less		A lot less
3. Was the briefing provided before the SLT MMI adequate to prepare you for the experience?	Definitely not		Not really		Somewhat		Definitely
4. Were the instructions given to the student applicants before your station clear enough?	Definitely not		Not really		Somewhat		Definitely

This last section asks for your views of the SLT MMI. *You are free to skip any or all questions.*	
5. What do you believe to be the greatest benefits of using the SLT MMI?	
6. Are there any improvements you would like to see made before to the SLT MMI?	
7. What do you believe to be the greatest weaknesses of the SLT MMI?	

Please post the questionnaire in the collection box in the Clinic Waiting Room.

Thanks for your assistance and participation in this research project.

Appendix H

MASSEY UNIVERSITY
ALBANY

6 December 2012

Yvonne Cope
College of Education
Massey University
Albany

Dear Yvonne

HUMAN ETHICS APPROVAL APPLICATION – MUHECN 12/079
Impressions of a Multiple Station Speech and Language Therapy Admission Interview: An Innovative Approach

Thank you for your application. It has been fully considered, and approved by the Massey University Human Ethics Committee: Northern.

Approval is for three years. If this project has not been completed within three years from the date of this letter, a reapproval must be requested.

If the nature, content, location, procedures or personnel of your approved application change, please advise the Secretary of the Committee.

Yours sincerely

Dr Ralph Bathurst
Chair
Human Ethics Committee: Northern

Te Kunenga ki Pūrehuroa
Research Ethics Office
Private Bag 102 904, Auckland, 0745, New Zealand Telephone +64 9 414 0800 ex 43279 humanethicsnorth@massey.ac.nz

Appendix I

From: Bathurst, Ralph
Sent: Monday, 27 May 2013 11:30 a.m.
To: Cope, Yvonne
Cc: Clendon, Sally; XXXXX
Subject: RE: Appendix to Ethics Approval – MUHEN 12/079

Hi Yvonne

Thanks for this. We will note this variation on your file.

Cheers

Ralph

From: Cope, Yvonne
Sent: Friday, 24 May 2013 3:29 p.m.
To: Bathurst, Ralph
Cc: Clendon, Sally
Subject: Appendix to Ethics Approval – MUHEN 12/079

Dear Ralph

Re: Ethics Approval – MUHEN 12/079
Impressions of a Multiple Station Speech and Language Therapy Admission Interview: An Innovative Approach

I am writing to request ethics approval to use some additional data that was generated as part of the data collection for this current project. I have outlined my reasons and the issues in the letter attached.

Please let me know if there is any further information you require. I look forward to hearing from you.

Nga mihi nui | kind regards
Yvonne

Yvonne Cope
Clinical Director

Speech-Language Therapy | Institute of Education | College of Humanities & Social Sciences |Massey University
Private Bag 102904 | NSMC 0745 | Albany, Auckland | NZ | Ph: +64-9-4140800 x41566

MASSEY UNIVERSITY
INSTITUTE OF EDUCATION
TE KURA O TE MATĀURANGA

Dr. Ralph Bathurst
Chairman
Human Ethics Committee, Northern
Massey University
Albany

21 May 2013

Dear Ralph

Re: Ethics Approval – MUHEN 12/079
Impressions of a Multiple Station Speech and Language Therapy Admission Interview: An Innovative Approach

I have already collected the data for the above research project. The project involved asking staff and prospective students to complete questionnaires about their impressions of a new multiple station interview format that we were trialing for the first time in speech and language therapy. These staff and student questionnaires were anonymous. I am writing to request your approval to use some additional data that was generated as part of the interview process.

When the student applicants were interviewed, they were given a score for each station. Their total score determined their entry or not into our SLT Programme. These score sheets were not part of my original ethics application. This data is useful to my thesis, however.

I would like to apply measurement theory to examine the difficulty of the individual stations and the degree to which each station was effective at differentiating between individuals who were comparatively high overall and individuals who were comparatively low overall. I would also like to compare the actual difficulty level of the stations (deidentified score sheets) with the perceived difficulty level of the stations (anonymous questionnaires). The score sheets will be deidentified by someone other than me. I am requesting to use this additional anonymous data.

Yours sincerely

Yvonne Cope
Student ID: 09138889

Appendix J

Consent Form (Actors)

Speech and Language Therapy Admission Interviews 2013

I _____
agree to my participation in the above named interview process conducted by staff of the Speech and Language Therapy Programme at Massey University.

I have read and fully understand the conditions of my participation outlined on *the Information Sheet (Actors)* and have signed this *Consent Form (Actors)* to indicate my consent.

Signature: _____

Date: _____

Caregiver consent (Child actor)

I _____
agree to my child's participation in the above named interview process conducted by staff of the Speech and Language Therapy Programme at Massey University.

I have read and fully understand the conditions of my child's participation outlined on *the Information Sheet (Actors)* and have signed this *Consent Form (Actors)* to indicate my consent.

Name: _____

Relationship to child:_____

Signature: _____

Date: _____