

**HOW DO SPEECH AND LANGUAGE
THERAPISTS DEVELOP COMPETENCE TO
WORK WITH CHILDREN WITH AUTISM
SPECTRUM DISORDERS?**

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Summary

Speech and language therapists (SLTs) have a unique role in identifying and supporting children with autism spectrum disorders (ASD). Previous research outside the UK indicated that SLTs reported minimal training with this client group and knowledge of autism was lacking. In the light of adult learning theories identifying the key components of competence as knowledge, skills and experience, this research investigates how SLTs develop competence to work with children with ASD in the UK.

This multi-phased mixed-methods research was designed in three sequential phases from different perspectives. Phase 1 consists of two parts: a comparative study of guidance of regulating bodies for pre-registration SLT training, and a search of autism content in training courses for SLTs across the UK. In Phase 2 semi-structured interviews were conducted with seven experienced specialist SLTs (experts) to investigate their views of how their own competence developed and how they support junior colleagues. Phase 3, utilising an online questionnaire including both open and closed questions, gathered the views of 119 newly qualified practitioners (NQPs) about their training.

The results of the research showed that whilst awareness of the features of autism was generally reported to be included in pre-registration courses, the views of experts and NQPs were that training in the practical skills of assessment and treatment interventions was lacking and experience of working directly with children with ASD was limited, despite NQPs reporting that they were frequently required to work with this client group early on in their first posts and that they lacked confidence to do so. Recommendations are proposed to address the issues raised including revising the course content, improving the consistency and quality of continuing professional development through the use of a competency framework, thinking creatively about clinical placements, designing novel qualifications and developing an apprenticeship model of training.

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This work is dedicated to Aurelia Rose, the next chapter...

CHAPTER 1

Introduction and Background Context

The title of this thesis is 'how do speech and language therapists develop competence to work with children with autism spectrum disorders?' Previous research outside the UK indicated that SLTs reported minimal training with this client group and knowledge of autism was found to be lacking. In light of the unique role that speech and language therapists (SLTs) have in identifying and supporting children with autism spectrum disorders (ASD), this research addresses this important question from multiple perspectives.

An exploration of adult learning theories (reported in Chapter 2) highlights the essential components of training that are required for the development of competence, namely knowledge, skills and experience. In the light of this understanding of how competence is developed, this multi-phased mixed-methods research was designed in three sequential phases. Phase 1 consists of two parts; a comparative study of guidance of regulating bodies for pre-registration SLT training, and a review of the curriculum content of training courses for SLTs across the UK. In Phase 2 semi-structured interviews were conducted with experienced specialist SLTs, henceforth referred to as 'experts', to investigate their views of how their own competence developed and how they support junior colleagues. Phase 3 utilised an online questionnaire, including both open and closed questions, to gather the views of NQPs about their training.

The results of the research showed that whilst awareness of the features of autism was generally reported to be included in pre-registration courses, the views of experts and NQPs were that training in the practical skills of assessment and intervention was lacking and experience of working directly with children with ASD was limited. NQPs reported that they were frequently required to work with this client group early on in their first posts and as a result felt lacking in confidence.

The conclusion from the research indicates that changes to the training courses for SLTs should be considered, in accordance with what is known about how

competence is developed, to address the balance between knowledge, skills and experience. The importance of reflection on experiences as a conscious meta-cognitive process to embed knowledge is highlighted. As knowledge changes over time, so does competence, and this highlights the importance of continuing professional development to ensure that the practitioner remains competent.

In this introductory chapter, I outline the background factors which provide the context for why this question is important. I include information about autism spectrum disorders and the evidence for the increase in the prevalence of the disorder. I also provide information about speech and language therapy, how the profession has developed, the roles it performs and the training received. I provide an explanation as to why the research focuses on the area of working specifically with children with autism spectrum disorder (ASD) rather than adults. The chapter concludes with a statement of the rationale, aims and outline of the study.

1.1 Background information

1.1.1 Information about autism spectrum disorders

Autism is described on the UK's National Autistic Society website (NAS 2020a) as 'a lifelong, developmental disability that affects how a person communicates with and relates to other people, and how they experience the world around them'. Autism is described as a neuro-developmental condition but, as there are currently no known biological markers for autism, the diagnosis is carried out by observation of certain behaviours.

The National Autistic Society's synthesis of the presentation of autism is based on the set of criteria published by the two main international diagnostic systems used globally which describe these behaviours. Both of these systems, the tenth edition of the International Classification of Disorders (ICD-10), published by the World Health Organisation (WHO 1992), and the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (APA 2013), describe the need for abnormal functioning to be observed in the areas of social-communication and restricted, repetitive behaviour in order for a diagnosis to be given.

Definitions and diagnostic criteria for autism have evolved since the disorder was first identified in the 1940s by Kanner (1943) and by Asperger (1944) as described by Frith (1991). Different terms have been used, reflecting the different autism profiles presented by individuals and the different diagnostic systems used. Autism has long been recognised as a spectrum disorder due to the variability in presentation (Wing and Gould 1979; Wing 1997). Terms associated with the disorder include autism, autism spectrum disorder (ASD), autism spectrum condition (ASC), atypical autism, classic autism, Kanner autism, pervasive developmental disorder (PDD), high-functioning autism (HFA), Asperger syndrome and pathological demand avoidance (PDA). In addition, the variability in the presentation of autism is also frequently affected by co-morbidities such as learning disabilities, mental health issues and/or other neuro-developmental disorders (NAS 2020b).

Repeated revisions of the DSM and ICD manuals have seen the terminology converging and the term 'autism spectrum disorder' is now commonly used to refer to the presentation observed across the whole range of neuro-developmental disorders which include features in the two broad domains of social communication and repetitive/restricted behaviours (APA 2013). The terms 'autism' and 'autism spectrum disorders' (or ASD) are, therefore, both used in this thesis and were included as search terms for the literature review.

Evidence for an increase in the prevalence of autism

Prevalence estimates for autism spectrum disorders have shown a steady increase over the past four decades (Baron-Cohen et al. 2009). In 1978 a study by Rutter gave an estimate of 4 per 10,000 individuals with autism in the population which remained the consensus until the 1990s (Baird et al. 2006).

Baird et al.'s (2006) study sampled a population cohort of children in the South Thames area aged 9-10. By this age it is likely that the majority of cases would have already come to the attention of health and education services, which may not be the case with studies looking at younger children. Their study showed that

the prevalence of autism and related ASDs was substantially greater than previously recognised. They found a total prevalence rate of 116.1 per 10,000 for all ASDs.

Baird et al. (2006) point out that this rate was an estimate that was extrapolated; they did not screen the whole population in the area. This may mean that some children were missed. They state that:

‘The Office for National Statistics (ONS) 2005 child and adolescent mental health survey indicated that 97% of children with an ASD had a statement. Thus the current prevalence estimate should be regarded as a minimum figure.’ (p. 214)

Baron-Cohen et al. (2009) carried out a comprehensive study of 5-9 year olds in Cambridgeshire. They found a prevalence rate of 157 per 10,000. They also maintained that this figure may be a conservative estimate as many high functioning individuals may not have their difficulties recognised until they reach secondary school. They counter this argument by pointing out that Cambridgeshire is not a nationally representative population since it has ‘a higher proportion of higher social classes’ (p. 507). They suggest that parents of children with known or suspected ASD may migrate to areas where services are available. They point to the close parallel with the Baird et al. figure (2006) which suggests that regional differences may be minimal.

Whilst there may be a true increase in the prevalence of ASD, several factors have been proposed to explain this substantial increase including improved recognition and detection, an increase in diagnostic services, the changing diagnostic criteria, different diagnostic methods, different methods used in research, different ages of cohorts studied, intelligence quotient (IQ) exclusion criteria, and an evolving understanding that autism can co-occur with other conditions (Baird et al. 2006; Baron-Cohen et al. 2009).

There is a general consensus in the literature, however, that there is a real increase in the number of children diagnosed with autism. The National Institute

for Clinical Excellence reported a figure of ‘at least 1% of children’ (NICE 2011, p. 3). This figure, which may be considered conservative when taking into account the studies carried out by Baird et al (2006) and Baron-Cohen et al. (2009), was more recently reiterated by the National Autism Project (Iemmi et al. 2017).

Debates about the nature and diagnosis of ASD and the implications for SLTs

The changing diagnostic criteria is a reflection of the continuing debate about the nature of autism. Current narratives around autism and neurodiversity are that rather than having a brain disorder individuals have ‘differences’ in thinking and behaviour (Silberman 2017; Sonuga-Barke and Thapar 2021). Neurodevelopmental conditions are highly heterogeneous, are not categorical and have many overlaps. Co-morbidities are common (Sonuga-Barke and Thapar 2021). Questions about the validity of the diagnoses are also raised, with autism being described as a ‘social construct’, especially with respect to the term Asperger’s Syndrome (Molloy and Vasil 2002; Elliman 2011).

There are debates about the usefulness of diagnosis to the individual. Wilson (2016) describes the diagnosis of autism as a ‘package deal’ that comes with both benefits, such as access to support, and risks, for examples of stigma or reduced self esteem.

The role with which SLTs have been assigned, to identify features which may lead to a diagnosis of autism, comes with challenges. The diagnostic criteria include ‘qualitative impairments’ in social communication which SLTs are expected to identify. These are not absolutes and may be subtle and/or open to interpretation. The current diagnostic classification of ASD treats it as a discrete condition, whereas it is part of a wider spectrum of neurodevelopmental atypicality (Mandy 2018). This reconceptualisation of autism has implications for the role of SLTs. There is a difference between a diagnostic assessment, where identifying differences in communication abilities may determine whether a child fulfils criteria for a diagnosis of autism, and an assessment of the impact of those difficulties which will determine whether the child requires SLT intervention. These two different types of assessments require very different skills. Whilst SLTs may have

a unique contribution to the diagnosis of autism our primary responsibility is to identify any social communication difficulties which are impacting on the child's functioning, whether or not a child has a diagnosis of autism, and seek to ameliorate this impact, either by making changes to the environment or by supporting the child to use new skills to overcome the impact, such as providing them with an alternative means of communication. Whether the child has a diagnosis of autism or not does not change this.

1.1.2 The profession of speech and language therapy

Historical perspective

The Comité Permanent de Liaison des Orthophonistes-Logopèdes de l'UE, in its report on SLT Education in Europe (CPLOL 2013), explains that speech and language therapy as a profession has existed in some form as long as difficulties with communication have been recognised. One of the earliest interventions described was that of Demosthenes, born in Greece in 384BC, using pebbles to overcome a speech problem (CPLOL 2013).

McGovern (1994) traced modern SLT in the UK back to the eighteenth century. Practitioners emerged across Europe from different professional backgrounds from education and medicine such as elocutionists, neurologists and hearing specialists (Hunt 1857; van Thal 1945; Rockey 1980). The physician John Wyllie wrote, lectured on and treated 'the various defects of speech which are usually in this country classed together as stammering' (Coleman 1895; MacMahon 1983). By the end of the nineteenth century, therefore, there was across Europe and beyond, a body of knowledge and a small number of practitioners involved in the study and remediation of communication difficulties. In the early twentieth century the main focus for many early European SLTs was speech disorders, particularly for those practitioners coming from an education background, but very soon voice problems, acquired and developmental language disorders and dyslexia were also of interest.

Practitioners began to group together into professional bodies. The International Association of Logopedics and Phoniatics (IALP) was established in Vienna in

1924, and is the oldest international organisation bringing SLTs across the globe together. The EU-wide organisation, Comité Permanent de Liaison des Orthophonistes-Logopèdes de l'UE (CPLLOL), was founded on 6th March 1988 as a result of increased collaboration of European SLT professional associations. SLT as an organised profession is therefore relatively new, growing up over the 20th century.

The development of the profession in the UK

The SLT profession in the UK today can be traced to the 19th century. The publication of John Wyllie's book 'The Disorders of Speech' in 1894 is credited with bringing widespread publicity to the emerging field (RCSLT 2020a). SLTs practicing at the beginning of the 20th century were largely self-taught and came from two main groups; those interested in oratory, who worked as elocutionists with a focus on speech correction, and medical practitioners with an interest in speech disorders resulting from organic causes. Formal training was introduced gradually and from 1945, with the establishment of the College of Speech Therapists, a UK-wide three-year qualification became established at educational institutions across the UK. Early SLTs mainly worked in voluntary or private practice. Two professional organisations were formed in the 1930s, representing the two main types of SLTs at the time. The Association of Speech Therapists represented those focused on speech and dramatic arts, while the British Society of Speech Therapists represented the medical groups of SLTs. Although they held differing views on the role of speech and language therapy, these two bodies both held competent practice at the core of their professional identity, and they amalgamated after the Second World War. The College of Speech Therapists (CST) was established in 1945. It was renamed the College of Speech and Language Therapists in 1991, and in 1995 it was awarded the Royal title, becoming the Royal College of Speech and Language Therapists (RCSLT).

Speech and language therapy practice has changed significantly since the early days of the 20th century, largely due to the application of new evidence in disciplines that underpin it, including medicine, psychology and linguistics. External societal changes, such as government policy on health and education

and developments in technology, have also contributed to the radical development of the profession. Early client groups for speech and language therapy in the UK included people who stammer, people with aphasia and children with cleft lip and palate. The number of client groups and clinical areas covered by SLTs has increased over the decades and continues to expand. Clinical areas today include aphasia, cerebral palsy, cleft lip and palate, dementia, developmental language disorder, dysarthria, dysfluency, dysphagia, head and neck cancer, voice and autism spectrum disorder (RCSLT 2020a). It could be argued that this expansive evolution in the service has necessitated significant changes in the training required in order to ensure that SLTs are competent to provide expected services. Whether this has been successfully achieved is explored in this research.

Titles – an explanation of current usage

In the UK the terms ‘Speech Therapist’ and ‘Speech and Language Therapist’ are designated titles protected by law. Anyone who uses one of these titles must be registered with the Health and Care Professions Council (HCPC 2020). In 1990, ‘speech therapists’ changed their name and title to ‘speech and language therapists’ in order to more accurately reflect their role. The recommended abbreviation for ‘Speech and Language Therapy’ or ‘Speech and Language Therapist’ is SLT.

Across Europe, partners have agreed that the term used to describe the profession should be the English language term ‘speech and language therapist’, and SLT to be the acronym; however, the professional is still more commonly known as a ‘logopaedist’ in Europe generally, and in France the term ‘orthophoniste’ is used (CPLOL 2013). The terms ‘Speech-language pathology’ and ‘Speech-language pathologist’ are used in the USA, abbreviated to SLP. SLP is used in this thesis in reference to practice in the USA.

The role of the speech and language therapist

The role of the SLT is succinctly described by HCPC on their website (2020) - 'A speech and language therapist assesses, treats and helps to prevent speech, language and swallowing difficulties'.

The Royal College of Speech and Language Therapists (RCSLT) is the professional body for SLTs in the UK. Its website states that:

'Speech and language therapy provides treatment, support and care for children and adults who have difficulties with communication, or with eating, drinking and swallowing.' (RCSLT 2020b)

CPLOL states that the speech and language therapist is the professional responsible for the prevention, assessment, treatment and scientific study of human communication and associated disorders. The SLT works with all disorders of voice, speech and spoken and written language, regardless of aetiology, in children, adolescents, adults and the elderly. The SLT also works with disorders of swallowing in people of all ages (CPLOL 2013).

The American Speech-Language-Hearing Association (ASHA) is the body that provides certification for speech-language pathologists in the USA. Being 'certified' means holding the Certificate of Clinical Competence (CCC-SLP) (ASHA 2017). ASHA states that the role of the SLP is 'to prevent, assess, diagnose, and treat speech, language, social communication, cognitive-communication, and swallowing disorders in children and adults'.

There appears to be a general consensus regarding the definition and roles of SLTs/SLPs as relating to the assessment and treatment (in its broadest sense) of individuals with communication and/or swallowing difficulties. As the roles of SLTs in the UK and SLPs in the USA are broadly equivalent, research which includes an investigation into the training of SLPs in the USA is likely to provide information which will be applicable to the UK context.

Current SLT education

SLT education has taken the profession from well-intentioned and intuitive support offered by professionals from a variety of related fields to a scientific discipline analysing communication breakdown and offering evidence-based therapeutic interventions. The profession draws upon knowledge from education, linguistics, biomedical and behavioural sciences, applying this to the core discipline of SLT. The influence of the different cultures, education and health systems are still reflected in the focus and perspectives of SLT education programmes.

SLT education has now developed into profession-specific, specialised educational programmes of study with practical clinical education normally integrated with the academic study. In the UK, full-time undergraduate SLT programmes are 3 or 4 years. In many countries the medical model is prominent in the general framework, procedure of investigation and terminology, whereas the approach to interventions is more influenced by behavioural/cognitive, neuro-psychological and socio-linguistic models. The theoretical framework which is most prominent also varies depending on the area of practice; for example, research and practice in swallowing and voice disorders and cleft lip and palate are more likely to be oriented towards medicine, stuttering towards psychology, aphasia towards neuropsychology and developmental language disorders and dyslexia towards linguistics and cognitive science (CPLOL 2013).

International guidelines for the pre-registration education of SLTs were published by Cheng et al. (2010) which state that competencies underpin the occupational standards set by an accreditation body, that competency based assessments can be used to evaluate clinical training, that competencies involve a holistic view of a student's functioning and that competency is not so concerned with what students know but how they use what they know. The implication of this final point is that the assessment of the application of knowledge to practice is vitally important.

Competency based occupational standards have been implemented in Australia (Ferguson 2006). Speech Pathology Australia developed competency-based occupational standards in response to a national government initiative across all

professions and these standards have formed the basis for the accreditation process of speech pathology education programmes in Australia since 1994.

The focus on children with ASD

The focus of this research is specifically on the training that SLTs have to work with children rather than on adults because most communication difficulties in individuals with ASD will be identified and addressed in childhood.

As communication difficulties are one of the defining features of autism (WHO 1992; APA 2013), speech and language therapists have a unique role in identifying the social and communication characteristics indicating that a child may have autism, providing information for the multi-disciplinary diagnostic process and supporting individuals to develop effective communication skills (RCSLT 2020c). The defining features of autism may present in a wide variety of ways. Some children may present as non-verbal whilst other children may have more subtle differences in the way they communicate, such as difficulties with having a conversation or with understanding and using non-verbal communication. Early intervention has long been known to be crucial in improving the prognosis for individuals with ASD (Jordan 1995; Rogers 1996; McConachie and Diggle 2007; Bradshaw et al. 2015).

Autism is a lifelong condition and individuals with ASD will have ongoing communication difficulties which persist into adulthood which may require the need for SLT but these individuals are most likely to have learning difficulties. Intellectual disability, defined as having an IQ below 70, occurs in approximately 50% of young people with autism (NICE 2011). Those SLTs working with adults with ASD, therefore, are most likely to be working in services for adults with learning disability, whereas SLTs working with children with ASD are more likely to encounter the broader spectrum of presentation. Whilst it is recognised that there are individuals who may not present for diagnosis until adulthood, there is no evidence to suggest that SLTs carrying out diagnostic assessments on adults require special skills over and above those required by SLTs working with children.

1.2 Rationale, aims and outline of the study

1.2.1 Rationale for the study

In the last 30 years there has been a shift in the educational provision offered to children with additional learning needs. Historically, children who were given a diagnosis of 'autism' were generally placed in special schools and consequently would have received support from more experienced 'specialist' SLTs. A study in England found that 70% of children with a diagnosis of autism are educated in mainstream schools (DfE 2017). With changing terminology, a broadening of the criteria for a diagnosis, the number of children diagnosed and the establishment of the right for parents to request children with additional learning needs to attend mainstream schools, non-specialist SLTs (often referred to as 'community' or 'generalist' SLTs) are now more likely to encounter children with autism on their caseloads. This means that the requisite knowledge and skills previously 'held' by specialist SLTs are now needed by generalist SLTs. Children with ASD require a different approach to service delivery from other client groups, incorporating a move away from direct intervention to a more facilitative, coaching style of support for parents and education staff. This change in role has also required a reconfiguring of professional identity from 'expert', where there is a perceived expectation to 'fix' the child's impairment, to 'enabler', where the goal is to support others to facilitate the child's development (Gascoigne 2006).

The rationale for this study, therefore, has arisen due to concerns about the competence of SLTs in the light of this expanded remit, and the increase in the number of children with autism requiring services. Subsequently there has also been an increase in the expectations of the parents of these children which can cause conflict and stress on all sides. SLTs need to feel confident in their knowledge and skills. This issue needs to be fully understood so that, if necessary, changes can be made to support the development of the competence of SLTs and, therefore, improve the support that children with ASD (and their families) receive.

This concern is borne out in my own experience as a paediatric speech and language therapist. I began to specialise in working with children with ASD in

1998. Part of my role at that time was to provide advice for more junior or non-specialist SLT colleagues in relation to assessment or management. The numbers of children being diagnosed steadily increased and more and more children with a diagnosis of autism or ASD were being placed in mainstream educational settings. I began to have concerns about the competence that SLTs have to work with this client group.

1.2.2 Aims

The aim of the research is to answer the overarching research question ‘How do speech and language therapists develop competence to work with children with autism spectrum disorders?’

In order to answer this question, key sub-questions are investigated in this research; namely:

- How do adult learners develop competence? (Chapter 2)
- What does previous research say about how SLTs develop competence to work with children with ASD? (Chapter 3)
- What do regulators expect of SLTs in relation to ASD? (Chapter 5, part 1)
- Is ASD included in SLT training courses? (Chapter 5, part 2)
- How have expert SLTs developed competence to work with children with ASD and what are their views about the training provided currently? (Chapter 6)
- What do NQPs say about the training received to work with children with ASD? (Chapter 7)

1.2.3 Thesis outline

The structure of the thesis follows the chronology of the research. Following this introductory chapter (Chapter 1), an exploration into adult learning theories and their relevance to the development of competence is outlined in Chapter 2. A literature review of previous research and current knowledge related to the competence of SLTs is outlined in Chapter 3, which informs the methodology and research design outlined in Chapter 4. The multi-phased research is presented in the next three chapters. Phase 1 of the research is an analysis of the current

curriculum and training guidance available online (Chapter 5). Chapter 6 outlines Phase 2 of the research in which a series of in-depth interviews with autism specialist SLTs was conducted. The findings from these interviews support the development of the research carried out in Phase 3, an online questionnaire survey, which is outlined in Chapter 7. Finally a discussion is presented of findings and recommendations in Chapter 8.

Chapter 2, which now follows, is an investigation into various theories related to adult learning and how these relate to the development of competence. Elements of training, including direct teaching, the role of experience, and how these are integrated to develop competence, are reviewed.

CHAPTER 2

Adult Learning Theories and the Development of Competence

In order to address the overarching question of this thesis, it is first necessary to consider 'how do adult learners develop competence?' by investigating adult learning theories in relation to the development of professional competence in general. This background chapter is relevant because it is important to be able to identify what theories of learning might underpin the methods recommended for the training of speech and language therapists, and to compare this with the training that is reported to be provided and to the research that has been carried out in relation to the competence of SLTs to work with children with ASD which is outlined in the literature review in Chapter 3. This will also help with understanding and interpreting the findings from the primary research.

In this chapter, therefore, I provide a brief overview of the various adult learning theories and how these have evolved over time. I will then focus on three key areas in more depth; hierarchical models of learning, experiential and reflective learning cycles and the importance of the social context in learning. I conclude the chapter with an explanation of how learning theories apply to the development of competence with particular relevance to the training of speech and language therapists.

2.1 Brief overview of learning theories

Taylor and Hamdy (2013) explain that adult learning theories have emerged from several educational, social, philosophical and psychological theories. Two categories of learning theories are 'behaviourism' and 'constructivism'. Behaviourist theories of learning propose that a stimulus in the environment leads to a change in behaviour and is dependent on the idea that knowledge is transmitted from the teacher to the learner whose role is as a passive, empty vessel. Thorndike (1911) posited that learning occurred if it had a positive effect on the individual and repetition embedded this learning. Skinner (1954) strengthened this behaviourist view by demonstrating that some forms of learning occurred as a response to a simple stimulus (the stimulus-response paradigm), where rewards

could be used to reinforce desired behaviours, for example, if a particular action is rewarded with a piece of food then that action will be repeated. The foundations of Skinner's theories came from experiments with animals. Behaviourist approaches to learning have been critiqued, for example, Chomsky (1975) commented that the Skinnerian view did not explain the learning of higher order skills such as language learning and proposed that the human brain is programmed to acquire such higher level skills and these are developed and modified by experience.

Conversely, constructivism states that learning is a process of constructing new knowledge built on the foundations of what is already known and the role of the teacher is as a facilitator of the learning. The following constructivist approaches focus on the development of the learner and their role in the learning process.

Cognitive learning theories focus on mental and psychological processes rather than behaviour (Piaget 1952; Bruner 1966; Ausubel 1968; Gagne et al. 1992). Piaget (1952) constructed a developmental model based on cognitive processes that are acquired in stages through childhood. Whilst Piaget's work centred on children, Knowles (1980) considered that adults learn in different ways and he coined the term 'andragogy' to differentiate adult learning from 'pedagogy'. Knowles's ideas concurred with humanistic learning theories which emphasised the importance of the development of the learner as an individual with the potential for self-actualisation, self-direction and motivation (Taylor and Hamdy 2013), which could be viewed as the ultimate goals of the hierarchical and cyclical models of learning described below.

Self-directed learning implies that adult learners have the ability to apply meta-cognitive approaches to their own learning, for example, to consider why learning is needed, to be self-motivated and to have the ability to reflect on experiences to derive learning. Reflective models of learning focus on the use of reflection as a learning tool and the development of a competent learner and a professional practitioner. The ability to understand different learning approaches and one's own learning preferences and styles is also a key aspect of adult learning theories and this view may be seen as the ultimate goal of adult education which emphasises autonomy and individual freedom in learning; however, there are views about the

extent to which self-directed learning, where the learner takes responsibility for their own learning, rather than directed self-learning, is achievable (Norman 1999; Hoban et al. 2005). In reality a combination of both will be in evidence for an individual learner.

Transformative learning theories derive from the idea of challenging the learner's beliefs and assumptions by critical reflection. Mezirow (1978) introduced the concept of transformative learning to the field of adult education which he defines as 'an approach to teaching based on promoting change, where educators challenge learners to critically question and assess the integrity of their deeply held assumptions about how they relate to the world around them' (p. xi). Although reflective learning, critical reflective learning and transformative learning are often used interchangeably, transformative learning implies change. Mezirow (2000) elaborated on the significance of pre-existing knowledge on future learning potential and the need for learners to participate in constructive discourse in order to make use of their experiences. This idea is particularly relevant to the field of adult learning where previous knowledge and experiences may be reflected on, challenged and re-framed.

These approaches have overlaps and influences on each other and can be viewed as explanations of individual aspects of learning theories, for example, transformative learning involves reflection, humanistic learning theory emphasises the importance of self-direction. I will, therefore, focus in more depth in three key areas of learning theories with particular relevance to the training of speech and language therapists: hierarchical learning models, experiential learning and social learning.

2.2 Hierarchical learning models

Lifelong learning was the focus of work by Bloom and Krathwohl who, after eight years of work with the American Psychological Association, in 1956, published what became widely known as 'Bloom's Taxonomy'. Their intention was to develop a method of classification of thinking behaviours that were considered important for the processes of learning throughout the lifespan. The resultant

classification system is a hierarchical multi-tiered model of classifying thinking according to six cognitive levels of complexity whereby each level is achieved cumulatively (see Figure 2.1). Hierarchical learning models are of particular relevance to professions such as speech and language therapy where, not only knowledge and skills are taught, but in order to develop competence it is necessary for the individual to learn how to use that knowledge and apply it in increasingly new and creative ways. Undergraduate training programmes, therefore, need to include a focus on learning how to learn and to applying knowledge.

The popularity and eminence of Bloom's Taxonomy has increased since it was first published. It has now been translated into 22 languages and is one of the most frequently cited references in relation to the field of adult education (Anderson and Sosniak 1994). It was originally developed as a framework to support measuring students' ability. Due to its long history and popularity it has been reinterpreted and modified in a variety of ways. The Revised Bloom's Taxonomy (RBT) was published by Anderson and Krathwohl in 2001 with the hope of adding relevance for 21st century students who can use it as a personal guide to the development of their own learning. This revision included changes in terminology, structure and emphasis (see Figure 2.2). The changes from the use of nouns to verbs enabled there to be a focus on the learner's abilities and actions in the learning process. The hierarchical framework consists of six categories which require achievement before the next, more complex level can be achieved (Forehand 2010).

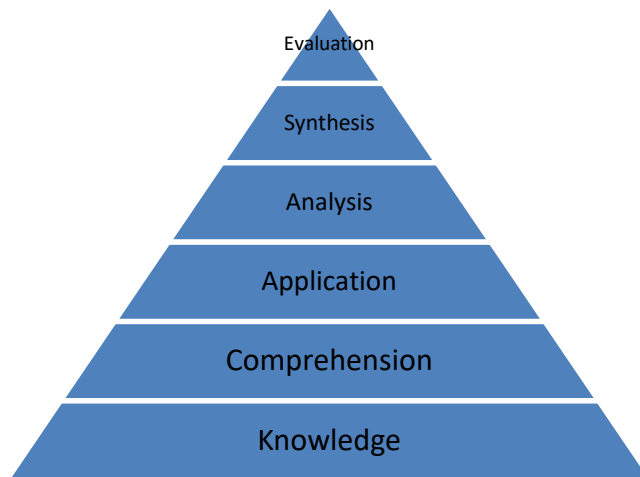


Fig. 2.1 Bloom's Taxonomy

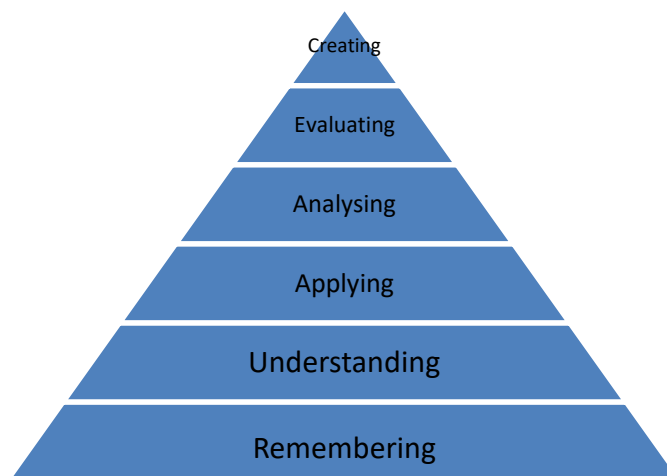


Fig. 2.2 Revised Bloom's Taxonomy

2.3 Experiential learning and reflective learning cycles

Experiential learning theories propose that knowledge is constructed in the person who knows it; hence the philosophical principle underpinning experiential learning is 'constructivism' (Yardley et al. 2012). Experiential learning focuses on the creation, facilitation, organisation and access to experiences to facilitate learning. Yardley et al. (2012) emphasise the importance of this approach for the development of skills and competences in context.

One of the earliest proponents of the importance of experience in learning was John Dewey (1938). He believed that active engagement and interaction with surroundings helped learners develop applied rather than abstract knowledge

(Yardley et al. 2012). Aspects of Dewey's ideas are seen in Schön's work on reflective practice (1983, 1987) discussed later.

Kolb and Kolb (2006) proposed that interest in experiential learning emerged in response to the significant change in education from a behaviourist teacher-centred, knowledge-transfer approach to a constructivist focus on the learner as an active participant in the learning process. This shift was prompted by 'an increased sense of urgency for improvement in learning in higher education' (p. 46) and a growing body of evidence pointing to the limitations of traditional teacher-led pedagogy in fostering the capacity for students to become independent learners.

Kolb (1984) developed a four-stage cyclical model to illustrate experiential learning (see Figure 2.3). Kolb proposed that the cycle begins with a concrete experience upon which the learner reflects. Through this process of reflection, abstract concepts are formulated and generalisations are developed. This understanding is then tested in new situations with further concrete experiences and the cycle continues. The process is portrayed as 'an idealised learning cycle where the learner 'touches all the bases' – experiencing, reflecting, thinking and acting – in a recursive process that is responsive to the learning situation and what is being learned' (Kolb and Kolb 2009, p. 44). Yardley et al. (2012) stress the importance of learners being supported in every stage of the cycle as without guidance learners may not be able to make sense of their experiences.

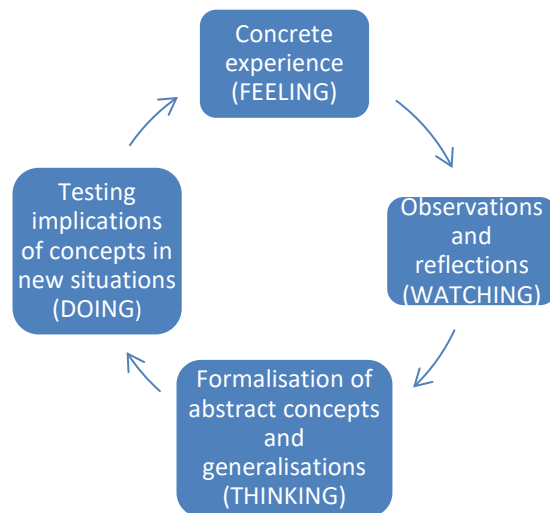


Fig. 2.3 The Kolb Cycle

Kolb's theoretical model of learning has been criticised as 'simplistic' (Jarvis 1987; Rowland 2000) or 'formulaic' (Marsick and Watkins 1990), as it has been argued that whilst the separate elements of the cycle may be relevant, learning is in practice much more fragmented and chaotic (Schlesinger 1996).

It could be argued that these hierarchical and cyclical models of learning are representations of different types or styles of learning being integrated together. Kolb (1984) is also well known for his work on 'learning styles' and his proposal that learners have different strengths and preferences which map on to the different quadrants of the theoretical cycle. He suggested that 'Activists' feel and do, 'Reflectors' feel and watch, 'Theorists' watch and think and 'Pragmatists' think and do. Newble and colleagues (Newble and Clarke 1986; Newble and Entwistle 1986) also posited that there are several learning styles and that learners have different learning preferences; however, there is debate about how fixed or flexible and dependent on context these might be (Coffield et al. 2004).

Kolb and Kolb (2006) recognise that there is evidence to suggest that learners shift their learning strategies to match the demands of a particular discipline. Moon (2004) suggests that learners develop an understanding of the nature of the learning process and their conceptions of any learning task itself and adapt by using 'surface' or 'deep' learning as required, where surface learning is intended to

absorb only as much information as is required for the task at hand by memorising without necessarily having a 'deep' understanding of it. In practice, both types of learning are, therefore, likely to be employed at different times.

In order to fully develop a deep understanding of one's experiences a deliberate process of reflection is required. Taylor and Hamdy (2013) credit John Dewey (1933) with being the originator of the term 'reflective learning' which draws on elements of adult learning, instructional design, experiential learning and the social sciences (Castelli 2011) and is, therefore, considered a multi-faceted learning theory. Reflection models are based on the premise that reflection leads to action and then change (Taylor and Hamdy 2013). Reflection is a key part of Kolb's experiential learning cycle.

The idea of reflective practice was developed initially with respect to medical training (Schön 1983, 1987) and is now increasingly being applied across professions (Anderson et al. 2004; Moon 2004; Archer 2012). Reflective practice emphasises the use of reflection in professional or other complex activities as a means of coping with situations that are ill-structured and/or unpredictable. Moon (2004) describes reflection as 'akin to thinking' (p. 82) and 'a process of re-organizing knowledge and emotional orientations in order to achieve further insights' (p. 82). Russell (2005) emphasises the importance of explicit instruction rather than simply advocating the use of reflective practice. The deliberate practice of using reflection as a tool to develop knowledge and skills is considered a key method in helping students to develop autonomous learning (Duvivier et al. 2011).

Drawing on the work of Schön (1983), Knowles et al. (2001) propose that reflection can be 'in action', influencing decisions made during practice, or 'on action', the active processing of experiences after the event. Whilst reflection in action requires the ability to draw on previous experiences in the moment, reflection on action can be more structured and organised. A common method of engaging in reflective practice involves writing a journal about a particular experience or episode of learning. A cyclical six staged structure for reflection, comprising a set of key questions, was posed by Gibbs (1988) to increase the practitioner's movement through awareness of feelings, evaluation/analysis,

conclusion and formulation of an action plan (see Figure 2.4). Keeping a reflective learning diary is recommended by the Royal College of Speech and Language Therapists as a useful way of learning from experiences.

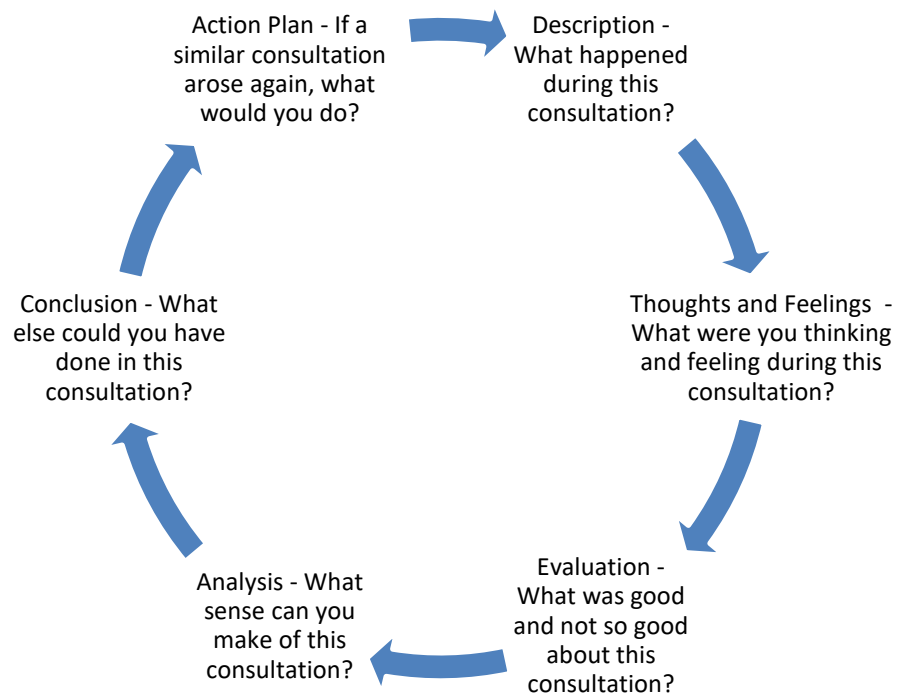


Fig. 2.4 Six stage model of reflection adapted from Gibbs (1988)

2.4 Social theories of learning

Social theories of learning focus on the importance of the social contexts of learning and the development of the learner into a member of a professional community. Socio-cultural theories are rooted in Marxist theory originating in Soviet Russia. Vygotsky (1978) developed theories of social constructivism based on the idea that a learning community supports learning. Yardley et al. (2012) describe social learning theory as a further development on from experiential learning, moving 'the focus away from internalisation to how experience and its learning consequences are essentially located in social milieus' (p. e103).

Vygotsky (1978) developed the idea of the Zone of Proximal Learning whereby new learning is linked to existing knowledge by a process of articulating what is already known and putting new ideas into the context of current understanding.

Wenger (1998) further developed the idea of the importance of social networks in the concept of learning communities or 'communities of practice'. Community of Practice Theory (Lave and Wenger 1991) was also inspired by Marxist theories. They sought to reconceptualise apprenticeships as a communal and negotiated construct rather than an individual process. Wenger (1998) emphasises the importance of 'communities of practice' in guiding and encouraging the learner. Land et al. (2008) and Taylor and Hamdy (2013) consider how becoming a healthcare professional not only demands the acquisition of knowledge and skills but also involves the process of growing into the professional community.

In contrast to experiential learning that is intended, formal or in some way mediated, 'informal learning' is also recognised as an important form of learning. Whilst not a learning theory as such, there is recognition that much learning at work occurs outside formally organised and delivered curricula. In his work on 'Informal Learning in the Workplace', Eraut (2004) contrasts this with formal learning or training and recognises the social significance of learning from other people and in a wide variety of settings. Whilst informal learning may be considered unstructured, unintended and opportunistic, Eraut (2004) recognises that the transfer of knowledge from education to workplace settings is more complex than commonly perceived and he critiques the formal training provided by Higher Education Institutions (HEIs) as failing in their duty to ensure that knowledge imparted will be 'ready to use'.

The importance of learning as being rooted in social activity is emphasised by Knowles et al. (2001) who state that personal reflection can be limited by the learner's own knowledge and understanding and, therefore, sharing experiences publicly may create a forum to facilitate an interchange of views. Johns (1994) proposes that a supervisor can provide a supportive environment to scaffold the learner's reflective practice by formally supporting the process. Yardley et al. (2012) also point out that whilst adult learning principles state that self-directed learning is optimal, research indicates that the influence of experienced practitioners can help learners achieve what they could not achieve alone (Billett 2002; Dornan et al. 2005).

The use of language is a particularly important way in which our development of personal meaning is influenced socially (Moon 2004). The building of meaning occurs in conjunction with the collected experiences of others (Lave and Wenger 1991). Kolb and Kolb (2009) also reflect on the importance of social learning which they term 'team learning' and state that 'to learn from experience, teams must create a conversational space where members can reflect on and talk about their experience together' (p. 52). Scanlon and Chernomas (1997) recommend a formalised system of social learning called 'action learning sets' where one member of the group describes a problem and the other members of the group ask questions to help the presenter find their own solutions thus giving the learner access to the experiential learning of others in a supportive way. Taylor and Hamdy (2013) propose that explaining what has been learnt to others helps to refine and consolidate learning and suggest that presenting at conferences or publishing in journals also serve as methods of reflecting and testing the learner's understanding within the social arena.

In summary, the evidence from research into learning theories indicates that, whilst there are different learning styles, there are certain elements that are essential for learning. Learning must include access to experiences which are linked to theoretical knowledge via reflection. Social factors challenge and support this reflective process. Learning to learn in this way is both hierarchical and cyclical. These are the factors, therefore, that need to be part of the process for developing the competence of speech and language therapists.

2.5 What is 'competence'?

When reviewing the literature it is difficult to clarify the term 'competence' due to the diversity of definitions used (Alspach 1984; Harden et al. 1999; Epstein and Hundert 2002; McMullan et al. 2003). Eraut (1994) proposes that there are three main conceptualisations of 'competence': behaviourist, generic and holistic approaches.

Within the behaviourist approach competence is defined as the ability to perform specific tasks to a minimum standard. This approach was developed principally for

non-professional occupations and uses functional analysis to define criterion-referenced elements of competence ('competencies') assessable by direct observation (Eraut 1994; Mansfield and Mitchell 1996; Manley and Garbett 2000). This view of competence implies that competence can be directly observed and fails to take into account contextual variability.

Miller (1990) describes a hierarchical pyramid framework to illustrate the assessment of clinical skills (see Figure 2.5). He points out that the assessment of knowledge is fundamental but is only part of an assessment of the health professional. He stresses the need to also assess the clinician's ability to know how to carry out a task and demonstrate that they can show how to do so. Ultimately, these skills will then be apparent in action. Miller's view, therefore, appears to be that 'competence' relates only to the knowledge of how to carry out particular tasks and that 'performance' (shows how) is something beyond 'competence'.

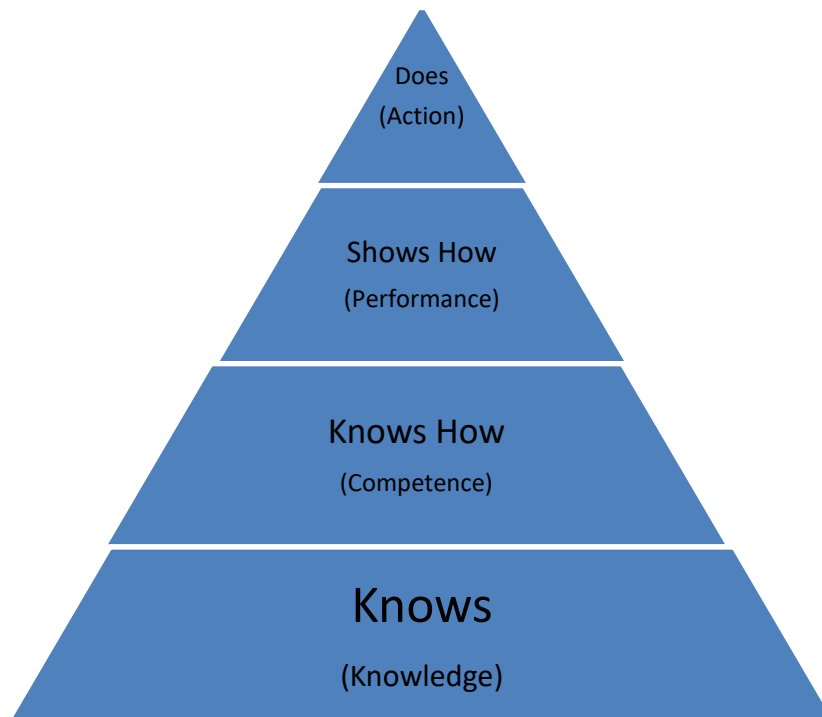


Fig. 2.5 Miller's Pyramid for Clinical Assessment

The generic approach is based on the notion of competence as a person's ability to perform, taking total capability into account (Gonczi et al. 1990), i.e. what they

are able to do rather than only what they are observed to do. In this approach, the generic qualities and characteristics of a person are focused on rather than simply the specific requirements of a job.

The holistic approach combines these approaches and acknowledges that there is interaction between professional attributes (knowledge, skills, attitudes, behaviours) and tasks (occupational roles) so that competence can be shown in a variety of contexts. Gonczi et al. (1993) propose, therefore, that attributes alone do not constitute competence; neither is competence merely the performance of a series of tasks. Competence is an integration of attributes and performance which underlies the potential ability to perform in novel and unpredictable situations. Competence is, therefore, greater than the sum of its parts (Eraut 1994; Epstein and Hundert 2002). There is debate in the literature about whether competence equates to potential or actual observable ability. The link between competence and performance is unclear. Miller's framework (1990) demonstrates that performance is built on competence. The model implies that performance is dependent upon competence and assumes that competence predicts performance (Miller 1990; Rethans et al. 2002). Rethans et al. (2002) argue that performance, whilst underpinned by competence, is also affected by individual related influences, for example, health, and external system related influences such as facilities. This holistic view of competence as encompassing knowledge, skills, attributes and the ability to perform in novel situations subject to individual variations would seem to be the most appropriate interpretation to be used within this study.

Another important characteristic of competence is that it is an evolving condition (Epstein and Hundert 2002). Dreyfus and Dreyfus (1986) propose a continuum of competence from 'novice to expert'. Daley (1999) points out that the learning styles of novices and experts are different; novice learning is framed by feelings experienced in novel settings whereas experts use a constructivist approach and are more able to reflect on their learning in a meta-cognitive way. The method of development is not just the acquisition of knowledge but also experience and the integration of the two (Benner 1984). These findings have implications for what we

would expect to see in pre-registration training and continuing professional development programmes and will be further elucidated in the discussion.

Hager and Gillis (1995) define competence as an attribute of an individual which can be inferred from their performance on authentic tasks. They describe an integrated view of competence as ‘a complex structuring of attributes needed for intelligent performance in specific situations’ (p. 3). Whereas Wenger (1998) proposes that the development of competence is not just an accumulation of knowledge and skills but a process of developing an identity, in this case becoming a speech and language therapist.

Whilst the definition of competence in the literature is not well defined, what is clear is that there is necessarily a complex interplay of knowledge, skills and experience. Knowledge is needed about the underlying neuro-developmental basis of autism and its variable presentations, and how practice can be applied to this theoretical knowledge. Skills based on understanding and using interventions and strategies take time and practice to develop. The third vital part of developing competence is experience – observing, working with others, breadth of cases, and the number of cases. These elements do not just fall into place. Theoretical knowledge without opportunities to test this understanding will not lead to competence. Developing expertise requires careful, skilled supervision, time and support to process experiences and to critically reflect on practice in order to move the therapist from novice to expert. Ferguson (2006) reminds us that competence does not mean that graduates know what and how to do all tasks across all settings without supervision or guidance but that they are able to generalise and adapt their learning in novel situations.

There is an emerging consensus that competence in professional terms develops not just from knowledge or the ability to perform a specified set of skills but the capability to perform in novel situations by integrating knowledge and skills and reflecting on past experiences (see Figure 2.6).

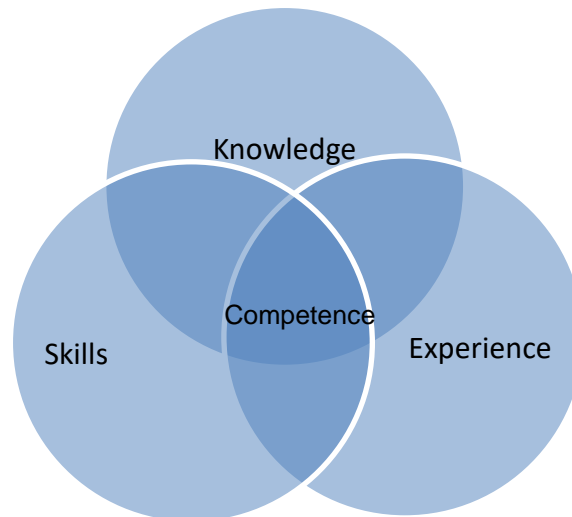


Fig. 2.6 Factors related to competence

2.6 Learning theories and competence

It can be seen, therefore, that the development of competence is not solely about learning knowledge and skills (which could be viewed as a set of competencies) or, indeed as being exposed to a variety of experiences, but in being able to reflect on and make sense of those experiences in the light of what is previously understood.

Research on expertise consistently finds that the distinguishing feature of experts is not how much they know but their ability to draw on that knowledge and use it efficiently and effectively (Schmidt and Boshuizen 1993). Such knowledge is likely to lose value over time because circumstances change, new practices develop and people start to take unconscious shortcuts. Even for experienced workers, what counts as competence changes over time. Thus, from a learning viewpoint, competence is a moving target (Eraut 2004). The implication is that for experts to remain competent they need to continue to engage in reflective learning cycles throughout their career and this is the basis of the requirement for continuing professional development.

Eraut et al. (2000) propose that there is a three-way relationship between challenge, support and confidence. If there is neither a challenge nor sufficient

support to encourage a person to seek out or respond to a challenge, then confidence declines and with it the motivation to learn. Eraut (2004) concludes that 'For novice professionals, in particular, a significant proportion of their work needs to be sufficiently new to challenge them without being so daunting as to reduce their confidence; and their workload needs to be at a level that allows them to reflectively respond to new challenges' (p. 270). The nature of speech and language therapy is that whilst similarities and patterns of presentation may be identified, every child is different and therefore new learning will occur as 'learners learn from variation in learning situations' (Moon 2004, p. 28).

Moon (2004) suggests that students who learn about the theory of knowledge as a subject, find the ideas helpful as a support for their future studies as they develop the understanding that knowledge is not simply a commodity to be acquired, but is constructed, and structured differently in different contexts. Further, Moon suggests that 'in the progression towards understanding of the constructed nature of knowledge, learners become more meta-cognitive, understanding that their own processes as learners affect the manner in which they construe knowledge' (p. 42).

2.7 Summary of elements of learning theories

It would seem that the learning theories described are not mutually exclusive but are interrelated models which are attempts to describe different facets of the development of learning and the application of learning to the development of competence. The models are either presented as pyramidal, to illustrate a cumulative hierarchy of complexity in learning, or cyclical, illustrating different processes being applied in stages. Both types of models are theoretical, idealised representations of the development of competence which is in practice subject to factors within the individual learner, the subject matter and contextual variations. There are, however, common elements which can be seen across the theories:

- learning is enhanced through social discourse, building on prior learning and experiences and is subject to individual factors

- new, varied experiences test, challenge and build on knowledge and skills applied in context
- there are stages of learning how to learn and adult learning theories are based on the idea that the individual is aware of and responsible for their own learning and can meta-cognitively apply strategies for learning as required
- learning is not a solitary activity but is shaped by, tested and consolidated through social activity
- reflection is essential and is most effective when used deliberately and systematically and is taught as a strategy and supported by more experienced colleagues

In this chapter I have reviewed several theories of learning and how they contribute to the development of competence. Clearly the ability to learn is a cumulative process throughout the lifespan. In addition, the cyclical actions associated with learning from a particular experience and applying that learning to a new experience is a kind of repeated 'virtual spiral'. The social element is also essential to this process, enabling the learner to develop into a competent professional.

2.8 The influence of learning theories on the research strategy

Adult learning theories suggest that all learning is constructed on previous knowledge and experience (Mesirow 2000; Epstein and Hundert 2002; Yardley et al. 2012). This would suggest that previous life experiences may have a bearing on the competence and confidence of SLTs. Questions related to previous experiences were included in the questionnaire (Phase 3).

Understanding that learners develop their ability to learn and that they need support to develop different styles of learning is apparent in the literature (Duvivier et al. 2011; Yardley et al. 2012). Evidence that this is taken into account in the training recommendations was looked for (Phase 1). A mixture of learning opportunities providing knowledge and skills acquisition and experiences via observation and guided 'hands on' work was searched for. Direct teaching of the

skill of reflective practice (and having the necessary experiences to reflect on) was also an aspect of learning theory that should be visible in course recommendations or actual course content (Moon 2004; Kolb and Kolb 2009). The kind of support provided by experts was investigated for this evidence (Phase 2). Learning theories also highlighted the importance of the social aspects of learning (Wenger 1998; Knowles et al. 2001; Yardley et al. 2012) and this was another area explored in all phases of the research.

In my investigation of recommendations for course content (Phase 1) I expected to find guidance about how the teaching of knowledge and skills should be addressed rather than just what content should be included based on my understanding of the development of competence. In the interviews (Phase 2) I asked questions about how SLTs had developed competence, what strategies they had employed and what they did to support the development of others.

2.9 Learning theories in relation to the training of SLTs

This chapter provides a summary of adult learning theories and explains how the training of SLTs can, therefore, be seen as the preparation of individuals to become competent practitioners. 'Training' is, therefore, an overarching term which encompasses the direct teaching of knowledge and skills, self-directed learning, graded and facilitated exposure to a range of clinical situations and experiences, alongside individual and socially mediated reflection on learning. This is a process that needs to continue throughout the career of the speech and language therapist.

In the next chapter I will be reviewing the literature related to research previously undertaken on the subject of the competence of SLTs to work with children with ASD in the light of this theoretical underpinning and will return in the discussion to how the research findings relate to the learning theories.

CHAPTER 3

Review of the Literature

Prior to conducting empirical research it is necessary to review the available relevant literature in relation to the topic. The purpose of the review is to address the question 'What does previous research say about how SLTs develop competence to work with children with ASD?'. This review includes information about how the studies were conducted, what results were found and where further research is needed.

Concerns about the knowledge and views of professionals in relation to children with autism are not new (Carrington et al. 2016). Citing the diversity of theoretical perspectives expressed by professionals in paediatric settings and the potential conflict that these can have on assessment, diagnosis and management of cases, Stone (1987) developed a 23 item questionnaire to survey the views of a range of professionals with regards to autism. Speech and language therapists were included in this study and it was found that as a group they held erroneous views about the nature of autism.

In an article in The American Speech-Language-Hearing Association (ASHA) Leader (2001), Prelock outlined the important role of SLTs in delivering services to children with autism and stressed the need for SLTs to develop their knowledge and skills in order to deliver services to the increasing number of children with ASD on their caseloads in mainstream schools. Since that time the training that SLTs undertake to work with children with autism has been under scrutiny.

For the purposes of this current study, I have undertaken a review of the literature and found several studies which looked at the knowledge of SLTs in relation to autism and the implications of this for their practice (see Table 3.1). The rising prevalence of autism is cited as a driving factor in the majority of the research studies and the increase in the number of children with ASD in general education classes meaning that school-based SLTs are now more likely to have children with ASD on their caseloads than in the 1970s and 1980s (Casella and Colella 2004).

In this chapter I begin with an explanation of the method of the literature search and then present an overview of the findings and implications for this study.

3.1 Method of literature search

Various iterative strategies were used to identify relevant literature, including searches of Google Scholar, publications databases at Cardiff University, specific relevant journals, and reference checking of key articles and their citation tracking. A search in Google Scholar using the search terms 'speech therapy' or 'speech pathology' AND 'autism' AND 'training' OR 'education' resulted in hundreds of articles related to the training of children with autism but not to the training of SLTs. Further search terms of 'competence' and 'confidence' were included. Databases from the Cardiff University Library were searched including AMED, ASSIA, CINAHL, EMBASE, ERIC, Medline, PubMed, Scopus and Web of Science. Relevant journals from the journal library of the Royal College of Speech and Language Therapists were investigated including 'Advances in Autism', 'Autism', and 'Journal of Autism and Developmental Disabilities'. From these searches an initial selection of articles was collated.

The reference list of each of the selected articles and their citations were also inspected. This resulted in the addition of further relevant articles. Due to time constraints studies prior to 2000 were discounted. This cut-off point was considered appropriate as methods of training SLTs and course content are likely to have changed since this time.

3.2 Literature search results

The results of the literature search are presented in table form in chronological order (see Table 3.1). A summary and further discussion of the findings and the implications for this study are presented below.

Table 3.1 Summary of studies reviewed in relation to the ASD training of SLTs

Reference	Focus	Methodology and Method	Sample	Key findings
Whaley 2002	Special education teachers' and speech therapists' knowledge of ASD (USA)	Quantitative survey. 45 item paper questionnaire.	552 surveys distributed to special education teachers and SLTs in Northeast Tennessee. 292 responded (52.9%). The results for SE teachers and SLTs are conflated under the term 'special educators'.	More training is needed. 'The majority of special educators in this region desire additional training in the area of ASD. The preferred method to receive additional training is through in-service training.' (p. 142).
Diehl 2003	SLPs' role in collaborative assessment and intervention for children with ASD (USA)	Qualitative case study.	2 single case studies (children with ASD)	Two very different cases presented illustrate the scope of knowledge needed by SLTs and the need for individualised interventions.
Cascella and Colella 2004	Knowledge of ASD among Connecticut school SLPs (USA)	Quantitative survey. Paper questionnaire.	Random sample of 166 SLPs selected from 990 working in Connecticut schools. 82 responses (50.3%).	SLPs reported that they had received minimal pre-professional training in ASD.
Heidgerken et al. 2005	Knowledge and beliefs about autism in health care workers including SLPs (USA)	Quantitative survey. Paper questionnaire adapted from Stone (1987).	111 surveys returned including 9 SLPs. Subjects were from one university hospital in Florida.	Good knowledge of diagnostic criteria but some exhibited outdated beliefs about autism.
Schwartz and Drager 2008	SLPs' knowledge about ASD, the training received and confidence in ability to provide services for this group (USA)	Quantitative survey. 52 item online questionnaire.	67 SLPs from 33 states across the USA. Low return rate.	Minimal training and low confidence reported. Some SLPs reported confidence in providing services to children with ASD despite a deficiency in their knowledge of autism.
Lanter et al. 2010	Description of an ASD specific clinical education experience for SLP students (USA)	Qualitative case study. Open text written feedback provided by students.	No information provided about sample size	Emphasises the importance of clinical experience. 'Over 80% of the students reported meaningful learning' (p. 62).
Ray 2010	Knowledge and confidence of SLPs regarding autism and ABA (applied behaviour	Quantitative survey. Online and paper questionnaire adapted from Stone	336 SLPs practicing in the USA completed the questionnaire in total – no information about population	Concludes that SLPs who have training in ABA are more confident and score more highly on knowledge.

	analysis) (USA)	(1987) and others (distributed at a convention).	size or percentage.	
Imran et al. 2011	Knowledge and attitudes of health care professionals in Lahore (Pakistan)	Quantitative survey. Paper questionnaire adapted from Stone (1987).	385 questionnaires distributed, 247 health care professionals responded including 14 SLTs.	'Significant misunderstandings of some of the salient features of autism were present' in the respondents (p. 1).
Mathews 2011	SLPs' and parents' knowledge of ASD (USA)	Quantitative survey. Questionnaire.	60 SLPs and 26 parents	Additional training is needed for SLPs.
Plumb and Plexico 2013	To investigate the graduate training experiences of SLPs working with children with ASD, comparison of students pre and post 2006 (USA)	Quantitative survey. 46 item online questionnaire.	National survey across USA. 7,461 surveys distributed. 532 initiated the survey and 401 respondents completed the survey (6.4%), from 29 states.	Recent graduates reported having received more coursework than pre 2006 graduates, who reported greater confidence in counselling parents about 'red flags' of possible autism and in providing interventions. Highlights the importance of experience and continuing postgraduate training opportunities. The majority of respondents reported that they could have benefited from more clinical experience.
Price 2013	SLPs' knowledge about autism and training received (USA)	Quantitative survey. Questionnaire.	97 students – 74 undergraduates and 23 graduates from 4 universities in Mississippi	Few students had taken a class which was specifically about autism. Gaps in knowledge about diagnostic criteria.
Burnett 2014	Knowledge, training received and expectations of SLPs with regard to training to work with children with ASD (USA)	Mixed methods survey. Adapted questionnaire, including open-ended questions for opinions.	2,765 surveys distributed to SLPs working with children with ASD, from 5 states. 551 responded (19.9%). The open-ended questions are not analysed in the article.	Respondents believed that their coursework and clinical training did not prepare them for working with children with ASD. SLPs had expectations that their course would prepare them for working with this client group.
Cameron and Muskett 2014	Recognising ASD in Primary Care: Perspectives of SLTs (Republic of Ireland)	Qualitative semi-structured interviews.	5 interviewees	Thematic analysis of the data revealed that participants were concerned with two key events: recognising potential ASD in children and discussing the possibility of ASD with parents.
Freedman 2014	Knowledge of autism in health care students including SLP students (USA)	Quantitative survey. 25 item online questionnaire.	252 health care students including SLPs.	Training not completed at time of study but students who had learned about ASD in a course, who personally knew individuals with ASD, and who planned on working with this population in the future knew the most about ASD.

Donaldson 2015	Description of an apprenticeship model of supervision for SLP students to work with children with ASD (USA)	Qualitative case study. Pre- and post-apprenticeship assessments of knowledge carried out to evaluate success of model and interviews with the students.	2 single case studies (student SLPs)	Highlights the importance of hands-on working with children with ASD combined with supervision.
Atun-Einy and Ben-Sasson 2018	Knowledge and self-reported competence with regards to autism of allied health professionals including SLTs (Israel)	Quantitative survey. Paper and email 79 item questionnaire adapted from Stone (1987) and others.	234 clinicians including 67 SLPs completed the survey	Overall knowledge was good. Knowledge gaps were found with regards to co-morbid conditions and specific interventions. Knowledge about ASD can be enriched by work experience in diagnosing and managing children with ASD. 'More than clinical education, clinical exposure to children with ASD and their families strengthens clinicians' knowledge about diagnosis and intervention.' (p.10)
Mendonsa and Tiwari 2018	SLPs' knowledge and beliefs about ASD (India)	Quantitative survey. 52 item online questionnaire adapted from Schwartz and Drager (2008)	219 SLPs responded from pool of 400 contacted (55%)	Results indicated that SLPs are providing services without having accurate knowledge and beliefs. Respondents who worked in a combination of clinical settings had better overall knowledge, indicating importance of clinical experience. Also those participants who worked with more children (30+) held more accurate beliefs about autism. Concludes that more training is needed.

3.3 General comments

Seventeen studies were found that were directly related to the training that SLTs receive to work with children with ASD. Thirteen of these were based in the USA. The four remaining studies were based in different countries – one each in Pakistan (Imran et al. 2011), the Republic of Ireland (Cameron and Muskett 2014), Israel (Atun-Einy and Ben-Sasson 2018) and India (Mendonsa and Tiwari 2018). No studies were found that investigated the training of SLTs in the UK.

Twelve of the studies used a quantitative survey methodology, employing a paper-based and/or online questionnaire. Several of these reported that the questionnaires were adapted from Stone's (1987) questionnaire. One study was reported to include open-ended questions but the analysis of these was not included in the article (Burnett 2014). The remaining studies employed qualitative approaches including case studies and interviews.

3.4 Increase in ASD and impact on caseloads

The majority of the studies begin by referring to the increase in the prevalence, incidence or rate of diagnosis of children with ASD. The impact that this increase is having on SLTs' caseloads, especially those working in mainstream schools, is commented on in many studies with figures of up to 90% of therapists reporting that they work with children with ASD. Donaldson's (2015) qualitative case study approach cites the rising prevalence of autism as a reason to address the training needs of SLPs. She suggests that the generalist nature of SLP training programmes constrains the possibility of the provision of an appropriate level of specialised training, stating that 'due to the broad graduate requirements (across the lifespan), SLPs receive limited ASD-specific clinical education' (p. 58). Donaldson proposed a move away from the traditional supervision and clinical placement model to an apprenticeship model encompassing plentiful opportunities to actively participate in learning by observing and then performing specific skills under the guidance of an expert or mentor clinician. As Donaldson described only two single case studies and the evaluation was largely qualitative it is not possible to draw conclusions about the effectiveness of the approach described.

3.5 Role and scope of SLT with children with ASD

Another issue that is referred to in the majority of studies is the importance of the role of the SLT in identifying, assessing and providing interventions for children with ASD. Lanter et al. (2010) refer to this as a 'critical role' (p. 59). Diehl (2003) highlights the complex and wide scope of knowledge needed to be an effective SLT by providing two very different case examples – one non-verbal and one verbal child with ASD. Diehl concludes that the SLT must combine specialised knowledge of communication with specific knowledge of ASD to provide effective collaboration with many disciplines.

3.6 Knowledge

Several studies implemented quantitative surveys to investigate the knowledge of autism exhibited by SLTs and other education or healthcare workers (Whaley 2002; Cascella and Colella 2004; Heidgerken et al. 2005; Schwartz and Drager 2008; Ray 2010; Imran et al. 2011; Mathews 2011; Freedman 2014; Mendonsa and Tiwari 2018). The findings indicated 'outdated beliefs' (Heidgerken et al. 2005) and 'misunderstandings' (Imran et al. 2011). The implication of this focus on knowledge of autism is that accurate knowledge is paramount; however, recommendations included broader experience and more training in general (Mathews 2011; Mendonsa and Tiwari 2018).

3.7 Confidence

The issue of SLTs' confidence in carrying out their role is addressed in some of the studies. Schwartz and Drager (2008) included questions aimed at investigating confidence and report that some SLTs lack confidence although specific data is not given. Ray (2010) carried out research to measure the knowledge and confidence of SLPs regarding ASD and the extent to which their educational and professional training prepared them to work effectively with this population. Ray concludes that 'practical experience with students with autism is what will make one more likely to be effective' (p. 29) and 'having in depth training in ABA (Applied Behaviour Analysis) may also be a key variable in knowledge and

confidence of SLPs working with students with autism' (p. 29). She explained the reasoning behind the importance of training in ABA:

'Traditional preparation for SLPs includes knowledge and skills necessary for addressing deficits in speech, communication and social interaction skills of individuals with various types of disabilities. However, it is unclear whether they are professionally prepared to address concurrent issues that emerge during social or communication intervention such as managing student problem behavior. Research has shown that deficits in communication skills are correlated with a high rate of occurrence of problem behavior (e.g. tantrums, aggression and self-injury).'

 (p. 3)

Ray (2010) concluded that those SLTs who had received training in managing the behavioural difficulties that children with ASD can present with, using ABA strategies, were more confident. Plumb and Plexico (2012) reported that SLTs who were more *experienced* were more confident despite having received less direct training as students in ASD.

3.8 More training needed

The overriding message that can be derived from the studies is that SLTs require more training in order to work with children with ASD. This may include more coursework when undertaking graduate studies (Price 2013; Burnett 2014), more clinical experience (Lanter et al. 2010; Plumb and Plexico 2013) and/or exposure to the client group (Atun-Einy and Ben-Sasson 2018), more in-service training 'on the job' (Whaley 2002) or more supervision (Donaldson 2015). Cascella and Colella (2004) found that the majority of the respondents rated themselves as having minimal pre-professional academic training in ASD; 69.2% reporting that they had received no or very little undergraduate or graduate academic preparation in ASDs and over half (51.2%) having had no hands-on experience of working with children with ASD. By comparing the responses of SLPs who had trained at different times, they were also able to show that there was no significant difference in the training received by SLTs over the previous 30 years. They explained that, historically, ASD had been considered a low-incidence condition

and children with ASD were segregated from general education. Cascella and Colella comment that, therefore, 'it was not remarkable that graduate curricula in the 1970s and 1980s minimally discussed ASD' (p. 249). Ten years later, however, Burnett (2014) found that SLTs still reported that coursework and clinical training did not adequately prepare them for working with children with ASD.

Cameron and Muskett (2014) carried out a small scale qualitative study consisting of interviews with five SLTs working in the Republic of Ireland, which investigated the perspectives of 'primary care' speech and language therapists, i.e. non-specialist SLTs. The respondents reported that they felt that the training they had received had not been adequate, that they had learnt more from experience, and that they had sought and benefited from further support and advice from specialist colleagues. In particular they commented that they had received training in how to feed back a diagnosis to parents but there had been 'less focus on pre-diagnosis conversations' (p. 325) which were needed to prepare parents for the assessment and diagnostic process. They concluded that training is needed in two key areas: 'first, recognizing characteristics of ASD in children; and second, discussing their observations with parents' (p. 324).

3.9 Summary and implications for this study

Whilst the studies reviewed highlight issues for consideration, it is important to note that they are either small scale studies, affected by low response rates or are confined to particular geographical areas. For example, despite being provided with a list of 990 SLTs, Cascella and Collella (2004) only sent out 166 surveys, and as there was only a 50% response rate, the number sampled was quite small and confined to SLTs working in Connecticut. Although Ray's (2010) online survey was distributed across the USA, it was only completed by 336 SLTs. No studies relating to SLTs in the UK were found. The studies highlight important findings but generalisation must, therefore, be considered with caution, especially in relation to the UK context.

Taking account of these caveats, several conclusions can be drawn. There has been an increase in the number of children with ASD on the caseloads of non-

specialist school-based SLTs (Whaley 2002; Cascella and Colella 2004; Schwartz and Drager 2008; Plumb and Plexico 2013; Price 2013; Donaldson 2015). The preparation of SLTs is reported to be inadequate and further training is required (Whaley 2002; Cascella and Colella 2004; Schwartz and Drager 2008; Ray 2010; Imran et al. 2011; Mathews 2011; Plumb and Plexico 2013; Burnett 2014; Cameron and Muskett 2014; Atun-Einy and Ben-Sasson 2018; Mendonsa and Tiwari 2018). The importance of exposure to children with autism was highlighted as essential, suggesting therefore that experiential learning over a period of time with a range of children with ASD is necessary to develop competence and confidence (Lanter et al. 2010; Plumb and Plexico 2013; Donaldson 2015; Atun-Einy and Ben-Sasson 2018; Mendonsa and Tiwari 2018). These conclusions closely concur with the evidence and assumptions identified in Chapter 2 related to learning theories that competence is a constantly evolving condition (Epstein and Hundert 2002; Eraut 2004) developed by the interaction of knowledge, skills and experience (Dewey 1938; Kolb 1984; Miller 1990; Yardley et al. 2012) through the process of reflection (Schön 1987; Duvivier et al. 2011), supervision (Mezirow 2000) and social engagement (Knowles et al. 2001; Eraut 2004).

In summary, using a very selective set of criteria, a limited number of studies was found and none of these was based in the UK, indicating a gap in current knowledge in relation to this topic. Given the focus of this study on competence, it is important to find out how SLTs are developing the appropriate level of competence and whether this is adequate. The review of the literature indicates that further research into the training of SLTs in the UK is needed with particular reference to how the necessary competence to work with children with ASD is achieved.

CHAPTER 4

Methodology

In this chapter I discuss various methodological considerations which informed the research design. I consider the paradigm in which the study is situated, my position within the study as a researcher and the ethics surrounding the research. I then present the development of the research questions and the possible sources of data to address these questions as this has relevance for the selection of methods. Finally, I provide an outline of the research design and methods which are explained in further detail in subsequent chapters.

4.1 Methodological considerations

Seventeen studies with a similar purpose were identified and considered in the literature review. Twelve of these employed a quantitative survey (questionnaire) approach. One survey gathered both qualitative and quantitative data within a single questionnaire. Three of the studies employed a qualitative case study methodology and one was an interview-based study.

Both qualitative and quantitative approaches have been used. The choice of using a survey methodology is logical when investigating aspects of human behaviour or perceptions where a wide range of opinions are to be gathered. No studies employed a combination of research methods aimed at gathering data in different ways or from different perspectives which would enable triangulation to take place.

I decided, therefore, to use three separate data collection methods in order to develop as comprehensive a picture as possible. The data gathered from the document analysis was able to inform the interview schedule used with experts who were also given the opportunity to 'tell their stories' about how they had developed competence. In addition they were asked about their views in relation to the competence of NQPs which was then followed up in an online questionnaire designed to gather the perspectives of as wide a range of NQPs as possible.

An ethnographic approach was also considered as it seeks to 'understand, discover, describe and interpret' the lives of a specified group from the point of view of the respondents (O'Leary 2017). However, as the information required to answer the questions is not easily accessible by observation, a mixed methods approach was considered more appropriate. In addition, this study sought to gain multiple perspectives of a wide range of stakeholders in order to provide breadth of data as well as depth.

4.2 Development of research questions

The overarching research area of interest in this study is speech and language therapy with children with autism. The research topic is the training received by SLTs and the development of competence in working with this client group. The purpose of the study is to investigate the preparation that SLTs receive related to working with children with autism in their pre-registration training and afterwards, and their perceptions about this. The general research question, therefore, is: how do speech and language therapists achieve competence to work with children with autism spectrum disorders?

4.2.1 The researcher's perspective

As part of my everyday professional role as the clinical lead specialist for autism within a paediatric SLT service, I come into daily contact with other speech and language therapists with various levels of experience and expertise. I frequently receive requests to discuss cases and am asked for advice or second opinions. I have also regularly been requested to deliver training in relation to working with children with autism.

I have noticed over the years an increase in the number of more complex children with a variety of neuro-developmental disorders being educated in mainstream school settings. Generalist SLTs are now increasingly more likely to come into contact with these children and will be expected to identify and assess their difficulties and provide advice, programmes of intervention for others to implement or direct therapy. I began to ask myself questions: what training have these

therapists received? What experience have they had? What should they be expected to know? The impetus for this research was the concern that these children were not receiving the support they need and this is likely to have an ongoing impact for them and their families throughout their lives.

4.2.2 Proposed research questions and sources of data

O’Leary (2017) advocates ‘adopting research approaches based not on tradition, but on the goal of best answering a well-considered research question’ (p. 8). A pragmatic approach was, therefore, taken to developing the specific research questions. Table 4.1 presents a summary of the research questions and my initial thoughts about what data might be used to supply answers.

Table 4.1 Development of research questions

Primary Question	How do speech and language therapists achieve competence to work with children with autism spectrum disorders?		
Sub-questions – what do I want to know?	Possible data collection questions	How can I find out?	Phase of the research
What do regulators expect of SLTs in relation to ASD?	What do regulating bodies say about how SLTs should develop competence to work with children with ASD? What ASD specific content is recommended? How much clinical experience is recommended?	Review RCSLT recommendations and other appropriate sources	Phase 1 – Part 1
Is ASD included in SLT training courses?	Is autism included in information about pre-registration training courses on HEI websites?	Training course websites	Phase 1 – Part 2
How have expert SLTs developed competence to work with children with ASD and what are their views about the training provided currently?	How did you become a specialist in ASD? What further training or CPD have you had which has resulted in you being a specialist in ASD? Have you completed any postgraduate qualifications? What training have you had in any particular interventions or strategies? What advice or support did you seek and receive as you were developing your expertise? Looking back were you satisfied with the learning opportunities available to enable you to develop competence in this area? What kind of advice or support do you provide for junior staff? For what reasons do junior staff seek advice and support from you? Do you provide any training? What kind? What are your views about the competence of NQPs related to working with children with ASD? What different ways can SLTs develop competence in	Ask specialist SLTs	Phase 2

	working with children with ASD? What opportunities for CPD are available?		
What do NQPs say about the training received to work with children with ASD?	What training did you receive in your pre-registration course related to working with children with ASD? What were your feelings about the training you had received at the time you graduated? How often do you encounter children with ASD in your current post? How confident are you that you can identify when a child may be on the autism spectrum? How confident are you that you could carry out an assessment of a child and provide the information needed to enable a diagnosis to be made? How confident are you that you can assess the need for SLT of a child with autism? How confident are you in your ability to produce and deliver an SLT intervention programme for a child with autism? What do you feel would help you most to develop competence? What opportunities are available to you to access advice and support? What opportunities are available to access further training? What opportunities are available to access further postgraduate qualifications?	Ask newly qualified practitioner SLTS (NQPs)	Phase 3

4.2.3 Research paradigms and mixed methods

Until the middle of the twentieth century, social science was rooted in the positivist paradigm of the scientific method (O’Leary 2017). Quantitative methods continue to be used; however, over time it has been argued that the ontology of social science is not concrete or absolute as in the natural sciences and this positivist approach was critiqued as it was felt that it was not appropriate for studying the variable intricacies of human behaviour and perspectives (Gray et al. 2007). Qualitative approaches were developed and the debate led to an acceptance of alternative epistemologies that can be broadly classed as ‘post-positivist’, described by O’Leary (2017) as research in which certainty ‘is replaced by an acceptance of chaos, complexity, the unknown, incompleteness, diversity, plurality, fragmentation and multiple realities’ (p. 7). The ontological focus of the knowledge gathered in this study is social phenomena, i.e. the multiple views of the actors within the field. It could, therefore, be seen as being situated in the ‘post-positivist’ paradigm.

In relation to the nature of the knowledge to be studied in this research (the epistemology), my own paradigmatic assumption is that the most credible way to find out what people remember, think, feel or believe is to ask them. The overarching framework, therefore, utilised in this research is mixed methods. Following the development of research questions, a pragmatic approach was taken to determine the methods to be used. Within this study the perspectives of speech and language therapists are obtained, collated, compared and categorised with the purpose of discovering possible patterns which may be representative of the population being studied as a whole. These data are collected and analysed by both quantitative and qualitative methods, and, therefore, the approach is best described as mixed methods research.

Arguments for using different methods within a single study in social research are not new. A proposal for this approach was put forward in 1955 by Barton and Lazarsfeld; however, at the time the historical dominance of quantitative methods still held sway in social research. This lasted until the 1970s when this approach was challenged by advocates of qualitative approaches. During the 1970s and 1980s the argument was made that the different epistemologies associated with qualitative and quantitative methods made them incompatible. This debate was not a smooth process and 'the paradigm wars' were characterised by strong but simplistic 'either/or' views (Punch 2014), whereby positivism was associated with the quantitative research and post-positivism with qualitative research.

Since the 1980s and 1990s there has been a growing movement to advocate for the benefits of taking an approach which can overcome the shortcomings and biases of taking a purely quantitative or qualitative approach (O'Leary 2017). Wilson (1982) expressed the view that qualitative and quantitative approaches should be seen as complementary rather than competitive and the use of different methods in one study was proposed as a way of addressing the weaknesses of either individual approach, with triangulation being promoted as the purpose and a beneficial outcome of this approach (Symonds and Gorard 2008). Flick (2015) states that 'in the social sciences, triangulation means to view a research issue from at least two vantage points' (p. 218). Laws (2013) proposes that the point of triangulation is 'to see the same thing from different perspectives and thus be able

to confirm or challenge the findings of one method with those of another' (p. 143). There is value in gaining different viewpoints as any one perspective may not provide the full picture. For example, the views of novices will be influenced by them not knowing what they do not know (Benner 1984) and this can be complemented with the alternative perspective of experts.

Johnson and Onwuegbuzie (2004) are of the view that 'mixed methods' is now generally used as a term to describe research which uses both quantitative and qualitative methods. This view came to be known as the third paradigm (Tashakkori and Teddlie 2003). Advocating the mixed methods approach as a distinct research paradigm in its own right, Punch (2014) presents a summary of the historical evolution of approaches as follows:

- the dominance of quantitative methods – wave 1
- the emergence of qualitative methods – wave 2
- the growth of mixed methods – wave 3 (p. 303)

Ellaway (2020) concurs with this view and states that mixed methods research is not just a conjunction of methodologies or paradigms but is a distinct paradigm. Her view is that what is required is an explanation of what is and what is not being mixed.

Symonds and Gorard (2008), writing from the perspective of research in education, suggest that enforcing paradigmatic categories may be restrictive and provide a case for removing them altogether. They warn against research being 'corralled' into one of the three established paradigms 'without consideration of why and how the fences between them are there, and of what benefit there may be in breaching these restrictions' (p. 1). They present an argument that methods do not fit neatly into a single paradigm and previously accepted assumptions about paradigms no longer exist; for example, a questionnaire can include questions that can be analysed both quantitatively and qualitatively.

Tashakkori and Teddlie (2003) advocate an underlying philosophy of 'pragmatism' in that the selection of methods should be based on the questions posed.

Giddings and Grant (2007), responding to debate in the literature related to nursing research, also argue for a position of pragmatism, not as a paradigm in its own right, but as an approach within the paradigm of post-positivism. They argue that it is 'an ideological position available within any paradigm' (p. 2) and add that proponents of mixed methods research are pragmatists in orientation whose main concern is 'getting the job done'.

O'Leary (2017) recommends the use of 'multiple data collection strategies' to gather data from different perspectives. The mixed methods multi-perspective approach to this research is considered necessary in order to conduct a rigorous study with internal coherence. However, the numbers of respondents interviewed has necessarily been limited due to time constraints. After seven interviews had been carried out it was apparent that data saturation had been reached and no new themes were emerging. The addition of open text responses in the online questionnaire allowed for additional qualitative data to be collected which enabled the gathering of views that may not otherwise be captured by closed questions.

In summary, therefore, this research could be viewed as being situated within the post-positivist paradigm, using a pragmatic approach employing mixed methods. Both quantitative and qualitative methods are used within a multiple phased design where each phase carried out is independent of each other but designed and carried out sequentially so that findings from one phase can inform the design of the next phase, specifically the document analysis informed and was followed by interviews which informed and were followed by a questionnaire. Finally, in the analysis of the results the data from all phases is combined to draw conclusions.

Further details about the research design and method of each phase of the research are presented in Chapters 5, 6 and 7 which also report the findings. The collation of the findings of each phase of the research are 'mixed' in Chapter 8 and discussed in relation to how well the research questions have been answered.

4.2.4 The researcher's position and 'the familiarity problem'

As the participants in this research are other SLTs, it was necessary for me to consider my position within the study. As an 'insider' (Weiderhold 2015) to this field, my own perspective will have an impact on the research, as an interviewer and interpreter of the data. My own experiences and views are also relevant and pertinent to the study and, therefore, I needed to consider my position reflexively. This is considered particularly pertinent 'when the researcher's own experience mirrors that of their respondents' (Mannay 2010, p. 91). Dichotomous views are held on this issue; 'outsider myths' assert that only researchers who possess the necessary objectivity and emotional distance from the field are able to conduct valid research on a given group. Mannay, however, explains that 'insider myths' assert that 'the attributes of objectivity and emotional distance render outsiders inherently incapable of appreciating the true character of a group's life' (p. 91).

Gathering data by fieldwork poses the issue of 'the familiarity problem' which was first described in the pioneering work of Geer (1964). She raised the problem created when researchers conduct research within their own working culture and identified that the ambiguities of familiarity and strangeness carry through into the social processes and relationships that underpin field research. Given my own professional setting I needed to be aware of how my own position and the familiarity problem might affect the research, as Silverman (2013) observes, 'no data are 'untouched by the researcher's hands'' (p. 49). Whilst transcribing interviews carried out within her own field, Morriss (2015) discovered that her 'insider' identity which was accepted by the respondents during the dialogic interviewing caused the notion of her impartiality to be problematic. She was affected emotionally when she realised that her responses were a reaction to her understanding of the life being led by her respondents and concluded that it was not possible to create an anonymous front as a researcher. They opened up to her with the use of 'atrocious stories' in a way which would have been unlikely if she had been an 'outsider'.

Atkinson et al. (2004) describe the issue as a classic theme for the researcher as negotiating a position between intimacy and distance, 'between the tensions of outsider and insider' (p.16). There is a danger of identifying too closely with the

social actors who are the focus of the research. The rationale for considering the issue is the practical requirement to maintain some interpersonal mobility within the setting. However, these 'insider' and 'outsider' camps could be viewed as artificial categories, which are inadequate to capture the complex and multi-faceted experiences of some researchers (Song and Parker 1995).

All social science includes an element of inter-subjectivity, but this is particularly pressing in qualitative research methods requiring interaction with respondents. There is a need for the researcher to reflect on their stance in the setting. Schön (1987) highlights the need for professionals to employ reflexivity in order to recognise how one's presence and practice impacts on the situation and to attempt to employ strategies to counter this. Abbott and Sapsford (1998) stress the importance of the reflexive researcher to be aware of all possible reactive effects and the need 'to consider the way the research is framed and conducted, to see who might be hurt or unsettled by it and whose interests might be harmed' (p. 173).

Abbott and Sapsford (1998) also warn against the possible issues that the researcher may encounter when studying their own working milieu, which may be affected by unconsciously absorbed values. O'Leary (2013) proposes that the researcher acknowledges biases and preconceived ideas. She guards against assuming a shared understanding of seemingly familiar jargon and suggests routinely asking what is meant by certain words or phrases. Coffey (1999) advises the researcher to be aware of their centrality in the research. Results are affected by their perception, interpretation and representation of data. Clearly researching within one's own field of practice affords advantages in terms of access and building rapport (Wiederhold 2015). Leigh (2014) described this as holding 'a passport... to bypass border control' (p. 430).

Wiederhold (2015) argues against Hammersley and Atkinson's (2007) recommendation to seek marginality and proposes that the researcher can benefit from considering each perspective. Wiederhold describes the challenges of 'insiders' as having to 'grapple with the ways their own local knowledge and presumptions color their questions, interpretations, and representations' (p. 606),

also ‘familiar respondents often assume researchers-at-home already know much of their story, and so may skip over details’ (p. 606). This would suggest that familiarity can affect both researchers and respondents.

It can be seen, therefore, that the familiarity problem is not clear cut. There are advantages and disadvantages to being an insider and an outsider. The need to look afresh at familiar working practices is not in question but the practicalities of doing this require creative solutions, planning and reflexivity. The identity of a researcher who is ‘known’ and ‘knowing’ cannot easily be erased; however, the research has been designed to ameliorate the issue as far as possible (see Section 4.3 below).

4.2.5 Ethical considerations

Beneficence

The first ethical consideration relates to the choice of topic to research and the principle of ‘beneficence’ (Oancea 2014, p. 49). In this case, whilst the research question relates to how SLTs develop competence to work with children with ASD, the ultimate ambition of the research is that it may be used to improve the training received, thus enhancing the likelihood that individuals with communication difficulties associated with autism are able to benefit from the best support possible.

Informed consent

A second consideration relates to informed consent. In order for respondents to consent to being involved in research they need to have sufficient information to make a decision about whether to participate. Blaxter et al. (2006) state that:

‘Research ethics is about being clear about the nature of the agreement you have entered into with your research subjects or contacts... Ethical research involves getting the informed consent of those you are going to interview, question, observe or take materials from. It involves reaching agreements about the uses of this data, and how its analysis will be

reported and disseminated. And it is about keeping to such agreements when they have been reached' (pp. 158-159).

As I would not be contacting possible subjects directly there would be no pressure put on SLTs to participate. By the act of volunteering there would be an initial assumption of interest in participating. Respondents who were interested in being interviewed for Phase 2 of the research were provided with information about the study and given an opportunity to discuss any questions or concerns they may have. They were asked about their consent to continue at this point and again at the beginning of the interviews. Potential participants for Phase 3 of the research were given information at the beginning of the questionnaire and were required to indicate that they gave their consent before continuing with the questionnaire. Also, it was made clear that questions were optional.

Confidentiality and anonymity

Confidentiality and anonymity are linked principles based on the right to privacy (Oancea 2014, p. 47). Sapsford and Abbott (1996) describe confidentiality as a promise that respondents will not be identified or presented in an identifiable form. Oancea (2014) points out, however, that maintaining confidentiality is not always straightforward. This is an area that needed to be carefully managed as I interviewed participants from a small population of specialist SLTs from different areas of the UK. If I were to attribute an opinion or experience to a specialist SLT from a particular town or city in the UK, it might be possible for others from this population to infer whose view this was. My promise, therefore, required me not to enable identification of respondents by name or geographical location, or any other identifying personal information.

4.2.6 Ethical approval process

After the research design was determined, the Cardiff University School of Social Sciences Ethical Approval Application Form was completed and submitted. Information was sought and provided in relation to the research project's outline, research questions, the intended participants, how the participants would be recruited, the type of data collected, and the planned data collection methods and

data storage. The application required details on the consent procedures and any potential harms or safety risks which might arise. Following ethical approval, Phase 1 of the primary research commenced.

4.3 Outline of research design

As different sources of information and different methods of information gathering were identified as being required to answer the questions, a mixed methods approach was considered appropriate. Phase 1 consisted of a desk-based comparative study of national and international recommendations about the training requirements of SLTs which could be found online. Information from four SLT organisations was investigated for guidelines or recommendations in relation to the autism specific course content to be delivered to pre-registration SLTs and the recommendations with respect to the practical elements of the training (clinical experience or 'practicum'). In addition evidence of autism specific content being included in training courses was sought from the websites of Higher Education Institutions delivering SLT training courses.

In Phase 2 in-depth interviews with experienced specialist SLTs (experts) from around the UK were undertaken. By selecting SLTs in other parts of the UK it was less likely that the researcher would be personally known to the participants, thus guarding against the familiarity issue as far as possible.

This was followed by an online questionnaire (Phase 3) sent to newly qualified practitioner SLTs ('NQPs') from across the UK. Responses were anonymous; whilst it may be possible that the participants would know the researcher, the researcher would not know who the respondents were. Again, this addresses the familiarity issue.

When designing a mixed methods research study, Cresswell and Plano Clark (2007) suggest that there are three elements that must be considered: timing, weighting and mixing. Timing relates to the order of the different phases of data collection and the rationale for them being carried out either concurrently or sequentially. In this study the guidance and recommendations in relation to SLT

training was first investigated in order to inform the questions for the semi-structured interviews. The results for these were then used to inform the development of the online questionnaire. The sequential nature of the research was a deliberate strategy used to challenge any underlying assumptions and develop the research questions in a logical, meaningful and transparent way.

Weighting relates to the relative importance or priority given to the different approaches. In this study each phase of the study had equal importance and status.

Mixing relates to the treatment of the subsequent data. As the data from each part of the study were in different forms and the respondents from different populations, they were analysed separately and in different ways (Punch 2014). The data, however, were brought together ('mixed') in the discussion and examined for how the results did, or did not, answer the research questions.

In summary, this chapter has outlined the considerations taken into account when deciding on the design of the research. The research questions proposed suggest that a mixed methods approach was appropriate including document analysis, in-depth interviews with specialist SLTS (experts) and a broad-based questionnaire aimed at newly qualified practitioner SLTS (NQPs) in order to gather both quantitative and qualitative data from a variety of sources.

The next chapter outlines Phase 1 of the research which includes a review of guidelines and recommendations provided by national and international SLT regulating bodies.

CHAPTER 5

Research Phase 1 – Curriculum Guidance

In Phase 1 of the research I carried out a two-part desk-based study in order to answer the first section of sub-questions outlined in Table 4.1 in Chapter 4.

Table 5.1 Section of Table 4.1 showing questions to be answered in Phase 1

Sub-questions – what do I want to know?	Possible data collection questions	How can I find out?
What do regulators expect of SLTs in relation to ASD?	What do regulating bodies say about how SLTs should develop competence to work with children with ASD? What ASD specific content is recommended? How much clinical experience is recommended?	Review RCSLT recommendations and other appropriate sources
Is ASD included in SLT training courses?	Is autism included in information about pre-registration training courses on HEI websites?	Training course websites

Part 1 of this phase of the research is a comparative study of the recommendations provided by regulating bodies to organisations offering training courses designed to enable students to become registered practitioners. Part 2 of this phase is an investigation into the course content of SLT courses described on their public facing websites. The procedure, rationale, analysis strategy and findings from each part of the desk research are reported separately below. Finally in this chapter, I explain how the information gathered relates to the development of the interview schedule used in Phase 2 (Chapter 6).

5.1 Part 1

5.1.1 The use of document analysis in social research

Analysing pre-existing documents which exist independently of the research project is considered a valid method in social research investigating social phenomena (O'Leary 2017). The data collected (the documents) are considered secondary data in that they pre-exist and were not specifically created for the research. It is important to select documents that are relevant and credible. The documents chosen for this research are relevant to the topic and to the particular research questions. The organisations were chosen for their credibility in that they

are well-known, established and respected member-led organisations. The documentation was limited to four main organisations as these were sufficient to provide coverage in terms of global scope.

5.1.2 Rationale for the method chosen

The purpose of Part 1 of this phase of the research was to compare and contrast the current recommendations available online in relation to pre-registration training for SLTs with particular reference to how this training should enable students to develop competence to work with children with autism. The aim was to find out whether recommendations are made in terms of content to be taught, what knowledge and skills are to be covered and how much of an emphasis on practical clinical experience is recommended. This investigation was needed in order to develop the questions to be used in the interview schedule in Phase 2 and to provide the context for Phase 3. An integrative summary of curriculum recommendations had not previously been carried out.

5.1.3 Sampling - The documents studied

The documents studied are guidance or recommendations related to the pre-registration training of SLTs found on the websites of the four main national and international SLT regulating bodies available in English to the public; RCSLT, CPLOL, IALP and ASHA.

The Royal College of Speech and Language Therapists (RCSLT) is the professional body for speech and language therapists in the UK. RCSLT has approximately 17,000 members. According to the website, it works to improve access and quality of services for people who have speech, language, communication and swallowing difficulties. It facilitates and promotes research into the field of speech and language therapy, promotes high-quality education and training of SLTs, and provides information for its members and the public about speech and language therapy. The RCSLT provides guidance to UK universities in relation to the content of training courses for SLTs and accredits courses.

In 2017, when this part of the research was conducted, the document studied was the 'Guidelines for Pre-Registration Speech and Language Therapy Courses in the UK' (2010). These guidelines were subsequently revised in 2018 and can now be found on the website under the title 'RCSLT Curriculum Guidance for the pre-registration education of speech and language therapists' (2018). It is this updated document that is referred to below.

The Comité Permanent de Liaison des Orthophonistes-Logopèdes de l'UE (CPLOL) or the Standing Liaison Committee of Speech and Language Therapists/Logopedists in the European Union is an association of SLT organisations from EU member countries set up in 1988. By 2008, when CPLOL had been in existence for 20 years, the community of SLTs across Europe had 27 member countries. CPLOL is currently composed of 31 professional organisations of speech and language therapists or 'logopedists' in 30 countries. The member organisations represent more than 80,000 professionals. CPLOL's delegates exchange information and work towards harmonisation, taking into consideration national and regional differences, with the goal of maintaining and raising the quality level of services and SLT professional standards. Two documents were studied, which can be found on the Education pages of the CPLOL website, entitled 'Revision Minimum Standards for Education' (CPLOL 2007) and 'Position Statement on Practice Education during Initial Speech and Language Therapy Education Programmes' (CPLOL 2009).

The International Association of Logopedics and Phoniatics (IALP) was founded in 1924 by Emil Froeschels to foster collaboration of professionals interested in speech and voice disorder throughout the world. It is described on its website as 'The non-profit worldwide organization of professionals and scientists in communication, voice, speech language pathology, audiology and swallowing' (IALP 2020). The document studied in relation to curriculum guidance is entitled 'Revised IALP Guidelines for Initial Education of SLP' (IALP 2009).

The American Speech-Language Hearing Association (ASHA 2020) is a member of IALP. It is the official regulating body of the profession in the United States of America. Their website, which is accessible to the public internationally, is

comprehensive in its scope. The guidelines provided by ASHA are of global significance and are highly influential. They are the guidelines most commonly cited by countries world-wide that are developing new SLT training courses and have, therefore, been included in this study. A 'Practice and Curriculum Analysis of the Profession of Speech-Language Pathology' was conducted in 2017 but is not accessible online. The documentation studied was limited to the publically available web pages only.

5.1.4 Analysis strategy

The process of analysis entailed searching each of the selected documents for key words relevant to the research questions. Information was searched for about 'autism', 'autism spectrum disorders', 'social communication disorders' and about 'clinical practice', 'placements' or 'practicum'. The relevant text was coded manually using coloured highlighter pens. Information was summarised in relation to ASD content and clinical experience.

5.1.5 Results

Evidence related to ASD content

In the main body of the RCSLT website it states that SLTs have a unique role in 'identifying the social and communication characteristics, contributing to a differential diagnosis of those with autism, identifying co-morbidities and training others involved in the care and education of those with autism' (RCSLT 2020c). The latest version of the curriculum guidance for the pre-registration education of speech and language therapists (RCSLT 2018) lists fifteen clinical areas to be included in training courses. One of these areas is 'neurodevelopmental conditions and/or learning disabilities' in which autism spectrum is included. The key capabilities expected of graduates are to 'identify aetiological and prognostic factors and presenting features and to evaluate and apply current approaches to assessment, differential diagnosis, intervention and management with individuals with neurodevelopmental conditions and/or learning disabilities across the lifespan, including inclusive communication, e.g. AAC, total communication, environmental and whole system approaches' (RCSLT 2018, p. 54).

The most recent version of the CPLOL Revision of Minimum Standards for Education was published in 2007. ASD is included in a list of 'theoretical subjects' which must be included in course content but no specific details about knowledge or skills to be taught is provided. From 2010 to 2013 CPLOL carried out a large scale survey across Europe in collaboration with NetQues (Network for Tuning Standards and Quality of Education programmes in Speech and Language Therapy/Logopaedics). The aims of the project were to map and describe all areas of SLT education, develop standards across the EU and to identify, share and develop best practice in SLT education. One of the most important outcomes of the NetQues project was the agreement of benchmark standards for pre-qualification education of speech and language therapists across Europe. The document describes general roles that the SLT must be able to perform but does not include particular speech, language or communication disorders or categories of service user.

IALP Guidelines for Initial Education in Speech Language Pathology (IALP 2009) include sections entitled 'background', 'premises', 'principles' and 'content'. Within the 'content' section there is a recommendation that SLT programmes should provide some practical experience for the student in a range of areas. Autism is included in the list under the heading 'behavioural and emotional disabilities' (p. 6). This document is no longer available on the website (IALP 2020) and, at the time of writing, had not been replaced.

With regards to the training of SLTs, the ASHA website (2020) includes Standards and Implementation Procedures for the Certificate of Clinical Competence in Speech-Language Pathology (2014), revised in 2016. Neither autism nor social communication disorder is mentioned specifically within the eight training standards. Autism Spectrum Disorder, however, is included in a list of clinical topics in the Speech-Language Pathologists section of the 'Practice Portal'. Extensive and useful information is provided within this section related to incidence and prevalence, signs and symptoms, causes, roles and responsibilities, assessment and treatment. This would imply that training in relation to ASD should

be included in the curriculum for pre-registration courses; however, this is not publically available on the website.

All four organisations refer to ASD as a clinical area that falls within the scope of SLT practice and ASD is mentioned specifically as an area that must be included in training programmes but no detail is given in any of the guidelines about particular approaches to assessment or intervention that newly qualified graduates must be familiar with, except a brief mention of AAC and total communication approaches in the RCSLT guidance.

Evidence in relation to clinical experience

The RCSLT recommendations emphasise that ‘speech and language therapy learners develop the professional skillset through a combination of theoretical and practical education’ (RCSLT 2018, p. 14). This document focuses on the responsibilities and contribution of ‘practice educators’ in ‘grounding learners in the reality of the workplace, providing a range of clinical and interdisciplinary learning opportunities, making transparent the often challenging translation of knowledge into clinical practice, and empowering learners within a framework of clearly defined learning objectives’ (p. 22).

It is stated that students must undergo 525 hours of mandatory practice education sessions. There is a recommendation that learners ‘should include opportunities to work directly with a range of service users in a variety of settings’ but there is no explicit reference to accessing experience with children with ASD (p. 23).

Within the guidance provided by CPLOL, which clearly concurs with the evidence about the development of competence described in Chapter 2, the contribution that clinical practice makes to this process is made explicit:

‘Professional competency can be described as an integration of knowledge, understanding, subject specific skills and abilities that are used by a person to function according to the demands that are put upon him/her.’ (CPLOL 2007, p. 3)

Both of the documents produced by CPLOL in relation to pre-registration training emphasise the importance of clinical experience for students. The document published in 2009 is devoted entirely to guidance related to the clinical practice elements of the pre-registration training programmes. It states that:

‘Clinical practice is the element of education where students, under professional supervision, learn to develop and refine the unique skills of the SLT, to integrate and apply the knowledge in the practical aspects of their future occupation and develop essential reflection and clinical decision-making skills of the SLT practitioner.’ (p. 1)

The document emphasises that it is imperative that clinical practice is obligatory, substantial, supervised and integrated with theoretical knowledge. It recommends that students gain experience with clients with a wide range of disorders (and refers to the list of theoretical areas in which ASD is included) and of all ages but no recommended hours are given in either of the 2007 or 2009 documents.

The IALP (2009) document related to initial education for SLT students explains the importance of ‘practicum’. Recommendations are given about the types of disorders that the student should have experience with and autism is included in this list; however, it is listed under ‘behavioural and emotional disabilities’ rather than developmental disorders which is out of date with current understanding of autism as described in DSM-V (APA 2013) and ICD-10 (WHO 1992). The number of hours recommended for clinical practice is not given but there is an explanation that access to appropriate clinical experiences will be subject to variations in training programmes globally. There is a section at the end of the document related to competencies in which it states that competencies involve taking a holistic approach concerned with the integrated functioning of the student and are ‘not so concerned with what the students know but how they use it’ (p. 13).

The purpose of clinical experience is detailed on the ASHA website as allowing students to interpret, integrate, and synthesize core concepts and knowledge, demonstrate appropriate professional and clinical skills and incorporate critical

thinking and decision-making skills while engaged in identification, evaluation, diagnosis, planning, implementation, and/or intervention. It is mandated that students must undergo 400 hours of supervised clinical experience. Guidance is included about the use of alternative clinical experiences which may involve the use of simulation technologies such as virtual patients and computer-based interactive experiences.

There is a recommendation that supervised practicum must include experience with client/patient populations across the life span and from culturally/linguistically diverse backgrounds and that practicum must include experience with client/patient populations with various types and severities of communication and/or related disorders, differences, and disabilities but particular types of client groups or disorders are not specified.

All four organisations recognise the importance of practical experience being included in pre-registration training programmes and contributing to the development of the competent practitioner by integrating knowledge and skills. Variations in recommendations in relation to hours exist. All organisations recommend experience with a range of client groups with a variety of disorders. Only IALP specifically states that autism is a clinical area in which students should have experience; however, their understanding of the nature of autism is problematic, in that as mentioned above it lists autism under 'behavioural and emotional disabilities' which it is at odds with current diagnostic manuals that classify autism spectrum disorders as neurodevelopmental in type. This erroneous classification is likely to create confusion as to treatment approaches and may result in parents feeling that they have in some way caused their child's difficulties.

5.1.6 Summary of findings

The model of professional learning recommended by all four regulating bodies for the pre-registration training of SLTs aligns with the adult learning theories described in Chapter 2, i.e. that integration of knowledge, skills and experience is required to develop competence. All bodies mandate a model which includes clinical placements which are expected to provide the opportunities to integrate

knowledge and practice skills learned theoretically. The RCSLT places significant emphasis on the role of the Practice Educator (PE) as the conduit through which the student will achieve this integration. All bodies also maintain that students must have received training to enable them to work with individuals across all ages and with a range of disorders.

This model, whilst aspirational, might be considered unfeasible, in that it places a high level of responsibility on PEs, who may themselves be relatively inexperienced to provide meaningful learning opportunities for their students with minimal guidance. The learning opportunities themselves are often opportunistic, fragmented and left to the vagaries of chance. The recommendation that students access exposure to a wide range of age groups and disorders is an additional confounding issue which may lead to valuable placement time not being used in the most efficient way.

5.2 Part 2

Part 2 of this phase of the research is a review of the websites of UK HEIs delivering pre-registration SLT training courses in light of the recommendations surveyed in Part 1.

5.2.1 Rationale

The purpose of this research was to discover whether autism is mentioned in websites intended to explain to potential SLT students what areas are covered in SLT training and also to compare whether there is a difference between how the course content is described in 2017 and 2020, following the review of the guidance published by RCSLT in 2018. This method was considered an efficient way to gauge the prevalence of autism as a topic within SLT courses. An alternative method would have been to gather prospectuses from individual HEIs; however, this was not considered feasible in the time available for the study.

5.2.2 Procedure

The next stage in the study of the training of SLTs in relation to autism was to investigate whether the recommendations provided are being followed in the UK. In 2017, the year I started the collection of empirical data for this research, I accessed the websites of each of the 16 Higher Education Institutions (HEIs) in the UK providing accredited SLT courses at undergraduate level at that time leading to a qualification recognised by the RCSLT and the Health and Care Professions Council (HCPC) in the UK. All of the websites provided overviews of course content, some with more detail than others. I looked for specific mention of 'autism' or 'autism spectrum disorders' (see Table 5.2).

I repeated this investigation in 2020. At the time of writing, there are currently 28 separate training courses providing pre-registration education for SLTs leading to a qualification recognised by the RCSLT and HCPC in the UK listed on www.healthcareers.nhs.uk (2020), nineteen at undergraduate level leading to a Bachelor's degree and nine at postgraduate level leading to a Master's degree. These courses are provided at eighteen different universities. Each of these HEIs is responsible for developing the content of their courses. In order to carry out a direct comparison with the 2017 investigation and to identify any change, I reviewed the same 16 undergraduate courses.

Table 5.2 Mention of autism or ASD in HEIs' websites delivering SLT courses

HEI	Is 'autism' or 'ASD' mentioned in course content?	
	2017	2020
Birmingham City University	No	No
Cardiff Metropolitan University	No	No
De Montfort University, Leicester	No	Yes – ASD is mentioned under 'Language and Cognition' and 'Specialist Settings'
Leeds Beckett University	No	No
Manchester Metropolitan University	Yes – Autism is included in a list of 'developmental and/or neurological complex lifelong conditions'	Yes - Autism is mentioned under 'Complex Developmental and Neurological Conditions'
Newcastle University	No	Yes - ASD is mentioned in 'Speech and Language Pathology – Developmental Special Needs'
Plymouth Marjon University	No	No
Queen Margaret University, Edinburgh	No	No
Ulster University	No	Yes - States that graduates could become an 'Autism Therapist'. ASD mentioned under 'Neurodevelopmental Disorders'
University of East Anglia, Norwich	No	Yes - ASD is mentioned under 'Learning Difficulties'
University of Essex	No	No
University of London	Yes – ASD is listed as a topic	Yes - ASD is listed as a core module
University of Manchester	No	No
University of Reading	No	Yes - ASD is mentioned as an optional subject
University of Sheffield	No	Yes – ASD is mentioned in core module 'developmental disorders of communication'
University of Strathclyde	Yes – Autism is mentioned in a module entitled 'Speech, Language and Communication Needs and Intervention'	Yes - Autism is mentioned under 'Speech, Language and Communication Needs and Intervention' and under 'Neurodevelopmental Disorders'
Total 'yes'	3	9

5.2.3 Results

In 2017 only three out of sixteen courses that were checked mentioned autism or autism spectrum disorders in the information provided about course content on the

websites. In 2020 nine out of sixteen courses mentioned autism or ASD. It is likely that HEIs reviewed the course contents following the publication of the updated Curriculum Guidance for the pre-registration education of speech and language therapists produced by RCSLT in 2018 which lists ASD as a topic to be included in the curriculum.

Considering the prevalence of autism in the population, and the specific reference to it in the recommendations provided by IALP, CPLOL, RCSLT and ASHA, it was surprising that in 2017 only three out of 16 of the courses mentioned autism in the content information provided about the SLT courses on the websites. The picture in 2020 has moved on but still only just over half of the courses mention this topic in their content overviews.

It is important to acknowledge that communication issues specifically related to autism, i.e. social communication difficulties, are likely to be addressed in the course content aimed at training students to recognise, assess and treat communication difficulties in general. It was not possible to tell how much content in terms of time or information was provided about autism on each course without contacting individual course providers directly which was outside of the scope of this research study.

5.3 Summary of findings from Phase 1

In Part 1 of this initial phase of the research, I investigated the guidance provided by various national and international bodies into the training that should be provided for SLTs to work with children with ASD. There is strong agreement across the recommendations that student SLTs should access training which would prepare them to work with this client group at the point of graduation. Experiential learning is highly recommended by all organisations.

Part 2 concluded that despite directives from these organisations in relation to the pre-registration training of SLTs, it is unclear whether specific training in the communication needs of people with autism, who make up more than 1% of the population, are being consistently addressed in the curricula offered on training

courses as autism is not always listed as a specific topic on the websites offering training for SLTs.

5.4 Next steps

In order to determine what influence these various recommendations may be having across the UK, the next step in the research, Phase 2, involved interviews with other ASD specialist SLTs (experts) across the UK. The purpose of this next phase of the research was to determine whether, in their experience, specialist SLTs considered that these recommendations were being successfully implemented and that the outcomes expected of the training were being achieved.

CHAPTER 6

Research Phase 2 – Interviews with Expert SLTs

In Phase 2 of the research I carried out interviews with expert specialist SLTs. In this chapter I outline the procedure for the research. First I describe the intended sample to be studied and rationale for the method chosen. I then outline the development of the interview schedule, the selection and recruitment of participants and the implementation of the interviews. This is followed by the presentation of the analysis and results.

6.1 Procedure

6.1.1 Rationale for the method chosen

The use of a semi-structured in-depth interview was selected in order to gather rich data in the interviewees' own words which would provide personal insights, experiences and feelings that might not otherwise be captured by, for example, a questionnaire. This was chosen as a method to collect information from SLT experts because of the flexibility of the approach and the scope to start with a question, follow the natural flow of conversation and pursue interesting tangents (O'Leary 2017). The line of questioning was deliberately open-ended and free-flowing to enable the interviewees to draw on what may be relatively distant memories and a wide range of experiences related to the subject. See Table 6.2 for details of the questions asked.

6.1.2 The intended sample of SLTs to be studied

The intention was to recruit a sample of 6 – 8 participants from the population of experienced specialist SLTs in ASD (experts) in the UK, in order to find out about their own learning journeys and the ways in which they had developed competence with regard to their specialism. Also, their views about the training that is provided to junior colleagues to help them develop their competence were investigated. A sample of expert SLTs from a wide geographical spread across the UK was sought in order to provide examples of ASD specialist SLTs with a range of perspectives. This purposive sample was handpicked from volunteers who

responded to an email invitation based on their eligibility as an expert and their location.

It has been argued that research should not follow set rules regarding number of respondents included in a study, but instead the aim should 'obtain as representative range of responses as possible to enable you to fulfill the objectives of your study and to provide answers to key questions' (Bell 2014, p. 123). The option to recruit more participants was a possibility, if new ideas were raised, until saturation was reached (O'Leary 2017) at the point where 'additional data no longer adds richness to understanding or aids in building theories' (p. 144); however, as transcription and analysis of interviews is a time consuming process, a larger sample would prove difficult to manage within the scope of this study and in the context of the interviews being just one method of data collection in this mixed methods study.

6.1.3 Recruitment and selection of interviewees

My intention was to use a procedure of non-random purposive sampling of representative 'typical experts'. In order to recruit participants, I developed a one-page information sheet (see Appendix 1) about the study which included the criteria for eligible participants which would serve as an 'advertisement' for the study.

As I am an RCSLT adviser in autism, to begin the search for the sample, I requested the RCSLT to distribute my email to other advisers in autism across the UK. The RCSLT was happy to help; however, I only received one response via this method.

The RCSLT website also lists 'Special Interest Groups' and the names of officers of these groups so this was my next route. I emailed the contacts listed for the autism special interest groups and I received two more expressions of interest; however, I still needed more respondents. On the website there is also a section with a list of Research Champions. This proved the most fruitful route as these

research-active therapists used their local networks and forwarded my information sheet to their contacts.

Using these distribution routes, I then received phone calls and emails from therapists interested in being involved in the study. Contact was made with possible recruits from around the UK.

A preliminary conversation checklist was developed to gather information from potential participants on their suitability for the study to help with selection (see Table 6.1 below). The questions were developed in order to determine where they worked, how long they had been working as an expert, whether they fulfilled certain criteria to qualify as a recognised expert, e.g. providing training or advice to others, or having a certain level of training in the area. The feasibility of carrying out the interviews was also discussed.

Table 6.1 Preliminary Conversation Checklist (pre-interview information-gathering questions)

Pseudonym	
Geographical area of work	
Job title	
Main job role	
Do you provide advice or training (formal/informal) for junior or non-specialist staff?	Yes/No
Do you have any records of the reasons why you have been asked for advice?	Yes/No
Appropriate for the study?	Yes/No
<i>Provide brief information about the study given</i>	
When did you complete your initial SLT training?	
Where did you train?	
How long have you been a specialist in autism?	
Do you have a Masters qualification?	Yes/No
If so, where and when did you complete this?	
Are you an RCSLT adviser in autism?	Yes/No
How long have you been an adviser in autism?	

Do you have any involvement with the pre-registration training of SLTs?	Yes/No
<i>Discuss permission from manager</i>	
<i>How the interview will be conducted</i>	
<i>How the interview will be recorded</i>	
<i>How the data will be stored</i>	
<i>Confidentiality and anonymity</i>	
<i>Any questions?</i>	
<i>Consent (in principle)</i>	
<i>When (set date and time)</i>	

A few potential candidates were excluded, either because they did not work primarily as specialist ASD SLTs or because they worked in the same geographical area as another potential recruit.

I held preliminary conversations with eight interested SLTs. In addition to discussing their suitability for the study, I further explained the requirements of the study and gave them an opportunity to ask questions. Explanations of how the interviews would be conducted, recorded and stored were given. Initial verbal consent to participate was gained at this point.

Following these preliminary conversations seven respondents were selected based on their ability to be able to give responses to the research questions. The respondents selected were from London, the north of England, the Midlands, Scotland, Northern Ireland and Wales. Participants were again contacted in order to arrange appointments for the interviews.

6.1.4 Preparation and development of interview schedule

The interview schedule was developed with reference to the proposed research questions which were based on presuppositions from my own experience, from the literature review and from the various training recommendations. The

questions were intentionally open-ended and neutral to enable participants to challenge any possible assumptions.

Table 6.2 below shows a section of the proposed research questions which were identified as being answered by the experts, as previously outlined in Chapter 4.

Table 6.2 Section of Table 4.1 showing questions to be answered in Phase 2

Sub-questions – what do I want to know?	Possible data collection questions	How can I find out?
How have expert SLTs developed competence to work with children with ASD and what are their views about the training provided currently?	How did you become a specialist in ASD? What further training or CPD have you had which has resulted in you being a specialist in ASD? Have you completed any postgraduate qualifications? What training have you had in any particular interventions or strategies? What advice or support did you seek and receive as you were developing your expertise? Looking back were you satisfied with the learning opportunities available to enable you to develop competence in this area? What kind of advice or support do you provide for junior staff? For what reasons do junior staff seek advice and support from you? Do you provide any training? What kind? What are your views about the competence of NQPs related to working with children with ASD? What different ways can SLTs develop competence in working with children with ASD? What opportunities for CPD are available?	Ask specialist SLTs

An initial draft interview schedule was created and a pilot was carried out with a SLT colleague specialising in autism. This was then refined (see Table 6.3 below for final version).

Table 6.3 Interview Schedule

Interview Schedule	
Participant Number:	
Inform the participant that this interview is part of a study for a Professional Doctorate with the School of Social Science, Cardiff University and any complaints can be directed there. My supervisors are Professor Sue Leekam and Professor Alison Bullock.	
Repeat info re recording, storing of information, anonymity and confidentiality	
Any questions	
Check consent to carry out the interview	
<ul style="list-style-type: none"> • How did you come to be a specialist in autism? <ul style="list-style-type: none"> ○ What are your recollections with regard to learning about autism on your 	

- pre-registration course?
 - What led you to decide to specialise in autism?
 - What postgraduate training have you had in autism?
 - What has been most helpful in developing your skills as a specialist?
- Describe your current SLT role.
 - Approximately what proportion of your working week is clinical, supervisory/advisory, management?
 - What kind of queries do colleagues in your service ask for support with?
- Have you provided any training for SLTs in your service in autism related issues?
 - If yes – what kind of training have you delivered? How did you decide what was needed?
 - If no – what training is available? Do you feel that training is needed? What kind of training do you feel might be needed?
- How do you keep up-to-date with current research in autism?
- In your role as an RCSLT adviser in autism, what kind of queries have you been asked to respond to?
- What are your views about the training in autism that is received by current or recent SLT students?
- What are your views about the RCSLT curriculum guidelines?
- What are your feelings about the knowledge and skills related to autism of newly qualified SLTs in your service?
- Do you have any other comments that you would like to make about the training that SLTs have to work with children with autism spectrum disorders?

6.1.5 Implementation

Interviews were arranged at a time that was convenient for the respondents. All interviews were conducted by telephone at the agreed times. Each interview lasted for between 30 and 45 minutes. The interviews were recorded on a separate mobile phone recording application. At the beginning of the telephone interviews, prior to the recording being started, details about the study were reiterated, a further opportunity for questions to be answered was offered, and consent to continue reconfirmed. It was explained that verbal consent would again be requested at the beginning of the recording so that there was a record of this.

All respondents agreed to continue and gave their verbal consent which was recorded.

6.2 Process of analysis

6.2.1 Transcription

All recordings were transcribed manually by the researcher as soon as possible after each interview. Carrying out this process allowed familiarisation with the material. All references to locations, organisations or named individuals that may have enabled an interviewee to be identified were anonymised during transcription to ensure confidentiality. The data were organised in separate numbered tables with a column on the right for coding. Participant numbers were then replaced with pseudonyms.

6.2.2 Qualitative data analysis

A large amount of qualitative data was generated. O'Leary (2017) points out that there are similarities between quantitative and qualitative data analysis; both require raw data to be organised, coded, analysed, interpreted and conclusions drawn. The significant difference is that qualitative data are analysed thematically rather than statistically. Both approaches require a systematic and methodological rigour. For the analysis reported here, it was acknowledged that, as Punch (2014, p. 169) describes, 'there is no single right way to do qualitative data analysis'; however, he makes it clear that the process of carrying out qualitative data analysis needs to be systematic, disciplined, transparent and described so that there can be confidence in the findings. There needs to be an 'audit trail' so that analysis can be reproduced in theory by others.

There are many different 'distinct disciplinary and paradigmatic approaches' (O'Leary 2017, p. 339) to qualitative data analysis. Of the different approaches listed by O'Leary the most salient to my study is 'content analysis'. This is a form of thematic analysis which involves coding text for meaning according to themes. Flick (2015, p. 163) uses the term 'content analysis' to refer to 'a classical procedure for analyzing textual material of whatever origin'.

O'Leary (2017) proposes that content analysis is a back and forth process and is not always inductive. She states that discovering themes is not the only qualitative data analysis option. The researcher may have predetermined '*a priori*' themes or theory in mind which may arise from engagement with the literature, prior experiences, the nature of the research question or from insights gained while collecting the data. The researcher would then be trying to uncover data deductively. Following this approach means that the data is mined for predetermined themes in order to support 'theory' (O'Leary 2017, p. 330). These themes are then expanded or collapsed further as appropriate.

Once all the transcripts were completed I went through them line by line and assigned initial themes to pieces of text (see Appendix 2 for an example). The approach was both deductive and inductive. Beginning with the '*a priori*' themes of the experts' learning journeys, the experts' views about training and the experts' views about NQPs, related concepts were grouped into categories and sub-categories by a process of expanding and collapsing until all unique ideas were included. A thematic diagram was created (see Figure 6.1 below). This illustrates the connections between the three main areas of enquiry and the category assigned to them, but does not indicate weighting. The diagram is an 'at a glance' representation of the final code list and illustrates the thematic structures.

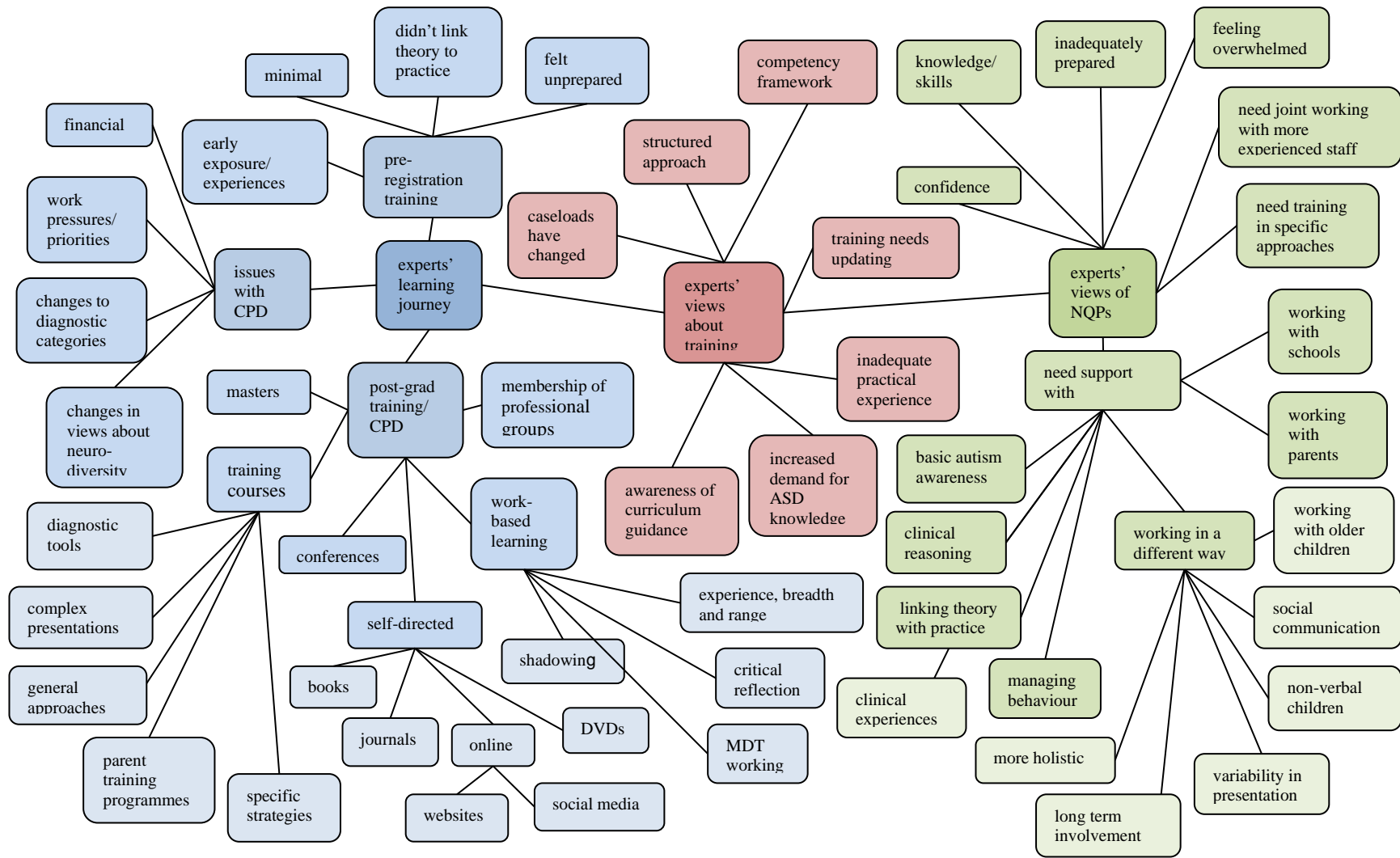


Fig. 6.1 Thematic diagram

Once this process was completed numbers were assigned to the themes and a codes list was developed (see Table 6.4). I then went back over the transcripts and assigned the codes. Coding is the process of putting tags, names or labels against pieces of data in order to attach meaning to the data (Punch 2014). The data can then be indexed enabling storage and retrieval. This process also aids the identification of early themes and patterns.

Table 6.4 Codes List

1.	Experts' learning journeys
1.1.	pre-registration training
1.1.1.	early exposure/experiences on clinical placements
1.1.2.	minimal or lack of theoretical training
1.1.3.	didn't link theory to practice
1.1.4.	felt unprepared
1.2.	post-grad training
1.2.1.	masters
1.2.2.	training courses
1.2.2.1.	diagnostic tools, e.g. ADOS, ADI
1.2.2.2.	complex presentations (ASD +)
1.2.2.3.	general approaches, e.g. TEACCH, ABA, Social Communication Emotional Regulation Transactional Support (SCERTS), Attention Autism
1.2.2.4.	parent training programmes, e.g. EarlyBird, Hanen
1.2.2.5.	specific strategies, e.g. Picture Exchange Communication System (PECS), Intensive Interaction
1.2.3.	conferences
1.2.4.	self-directed
1.2.4.1.	books
1.2.4.2.	journals
1.2.4.3.	online
1.2.4.3.1.	websites
1.2.4.3.2.	social media
1.2.4.4.	training DVDs and webinars
1.2.5.	work-based learning
1.2.5.1.	shadowing more experienced SLTs
1.2.5.2.	multi-disciplinary working with other professionals/experts (non-SLT)
1.2.5.3.	critical reflection
1.2.5.4.	experience – breadth and range
1.2.6.	membership of professional groups, e.g. CENs, forums
1.3.	issues with CPD
1.3.1.	financial
1.3.2.	work pressures/priorities
1.3.3.	changes to diagnostic criteria
1.3.4.	changes in views about neuro-diversity
2.	Experts' views about training
2.1.	awareness/views about RCSLT curriculum guidance
2.2.	increased demand for ASD knowledge + complexity + co-morbidity
2.3.	caseloads have changed
2.4.	structured approach
2.5.	competency framework
2.6.	training needs updating/revising
2.7.	inadequate practical/clinical experience

3. Experts' views of NQPs
 - 3.1. confidence
 - 3.2. knowledge/skills
 - 3.2.1. inadequately prepared
 - 3.3. need support with
 - 3.3.1. basic autism awareness
 - 3.3.2. clinical reasoning/case discussion
 - 3.3.3. linking theory with practice
 - 3.3.3.1. clinical experiences
 - 3.3.4. managing behaviour
 - 3.3.5. working in a different way
 - 3.3.5.1. more holistic
 - 3.3.5.2. long term involvement
 - 3.3.5.3. variability in presentation/complexity
 - 3.3.5.4. non-verbal children
 - 3.3.5.5. social communication
 - 3.3.5.6. working with older children
 - 3.3.6. working with parents
 - 3.3.7. working with schools
 - 3.4. need joint working with experienced staff/shadowing
 - 3.5. need training in specific approaches
 - 3.6. need support to avoid feeling overwhelmed

As a researcher and also a specialist SLT, I may be viewed as an insider to the research area. O'Leary warns that 'interpretations are always intertwined with a researcher's biases, prejudices, worldviews and paradigms – both recognized and unrecognized, conscious and subconscious' (p. 332). She suggests that the researcher should be aware of assumptions and preconceived notions in order to recognise biases when engaging in analysis that manages subjectivities (O'Leary 2017). To guard against this, and to add rigour to my coding process, I supplied one of my supervisors with the codes list and extracts from two transcripts to code and we met to discuss this. There was a high level of concordance with only a few minor differences (see Appendix 3 for example of section of coded data).

Sections of coded data were then plotted in a table or framework as described by Green and Thorogood (2018) so that data across respondents could be compared and analysed (see Appendix 4).

6.3 Results

The overarching research themes that were explored in Phase 2 were the experts' own learning journeys, i.e. how they had come to be specialists, their views about what training should be provided and their views about NQPs. The findings are

summarised with respect to the research sub-questions outlined in Table 6.2 above.

Code 1 Experts' Learning Journeys

Code 1.1 Pre-registration training

Therapists were asked about how they had become specialists and what factors had been in place to enable that to happen. A common theme emerged that they had not made a conscious decision to specialise in autism but this had happened 'by default' as circumstances or opportunities were presented. The early caseloads that they worked with evolved as the demands or needs changed. Jane explained that *"the special school itself started to specialise more and more in ASD and my experience grew within that school"*. Several interviewees commented that they had exposure to children with autism in their first posts and that they felt unprepared to work with them but this piqued their interest and drove them to learn more about this client group (code 1.1.1).

The experts were asked about their own learning journeys, starting with what they remembered about their pre-registration training. Respondents were asked if they remembered any autism specific content. All respondents commented that the training about autism within their undergraduate courses had been very minimal or non-existent (code 1.1.2). When asked about autism content, Abbie stated *"Yes, it was covered. I think we might have done two hours"* and Helen reported *"I remember one lecture... it was pretty limited looking back"*. Ann commented on the lack of linking theory to practice, specifically mentioning that she remembered that *"no specific intervention strategies were discussed"* (code 1.1.3). Carol and Kate both stated that there had been no autism specific content at all.

The caseloads that SLTs were expected to manage were also a driving factor in seeking further training. Ann expressed how unprepared she had felt and how this had driven her to seek more training which ultimately led to her becoming a specialist in autism (code 1.1.4). She explained:

"In my first year as a speech therapist in a community caseload, I probably met at least three very severely autistic children that I couldn't recognise."

And I only know now looking back that ... I was totally unable to identify their difficulties and identify the condition". [Ann]

Code 1.2 Postgraduate training

Experts were asked about the postgraduate training they had received. There were various methods of training accessed following graduation, including formal study at Masters level (code 1.2.1), attendance at training courses for diagnostic tools, general autism approaches, parent training programmes or specific communication strategies (code 1.2.2). Some therapists mentioned attendance at conferences (code 1.2.3) but these were described by several experts as becoming harder to access due to financial constraints, as Helen reported *"I try to keep up to date with conferences...funding for that has been particularly difficult recently"* and Ann pointed out *"There really is no money for us to go outside for courses anymore"*.

Along with attendance on courses, experience and critical reflection, experts had also engaged in a significant amount of self-directed learning (code 1.2.4). This took various forms – reading books, journals articles, and accessing websites, social media and online training resources such as DVDs and webinars. As Ann stated *"I also just read extensively on autism. I read a range of books and training DVDs as well"*. Social media and online learning were regularly mentioned. Carol reported that she took advantage of online opportunities and Ann stated that she followed ASD professionals and researchers on Twitter. Different methods of developing competence were emphasised, highlighting that attending courses is not the only method of training. Kate explained that *"For me it is not about going on external courses as the answer but looking at critical reflection in your own practice every single day"*.

A strong theme that emerged, related to their own learning journeys, was that learning from other more experienced colleagues, whether SLTs or not, was important (code 1.2.5). Helen reported that, when she was newly qualified, working with more experienced colleagues was helpful, stating:

"I was very fortunate to have a first post where I had quite a lot of joint working with more senior therapists...I was very lucky to have quite a lot of

opportunities very early on, and to be very well supported in lots of joint working, so that I felt confident and able to work in that area independently”.

[Helen]

This opportunity was not limited to learning from more experienced SLTs. Working alongside colleagues from other disciplines was also considered valuable. Multi-disciplinary working was mentioned by several participants, as Abbie stated *“It’s all those skills that I’ve absorbed from other disciplines...where you’re not just looking at it from the speech and language therapist’s point of view”*. Kate described the various other agencies that she had worked alongside:

“I would say the thing that’s made the biggest difference is working alongside the CAMHS [Child and Adolescent Mental Health Service] consultants, community paediatricians and then more latterly people like play therapists and advisory teachers”. [Kate]

Membership of specialist interest groups was also considered an important way to gain knowledge and keep up-to-date (code 1.2.6). Helen reported *“I’m a member of the ASD CEN (Clinical Excellence Network)”*, and Ann attended *“an autism diagnosticians’ forum”*.

In general, experience was considered the factor which contributes most to the development of competence (code 1.2.5.4). Therapists expressed the opinion that experience with a broad range of children had honed their specialist skills. Jane explained that the range of children encountered had a significant impact, stating:

“I think for all the reading you do, and for all the courses you go on nothing equips you better than meeting the children themselves and the parents that you work with and I always say I learn something on the very next child that I see”. [Jane]

Code 1.3 Issues with CPD

Various issues related to CPD were referred to. Three out of the seven interviewees mentioned financial difficulties to accessing CPD (code 1.3.1), as Jane commented *“it’s about trying to be creative really... because our budget is very, very restricted”*.

Another barrier to CPD reported was finding the time due to work pressures or having other priorities (code 1.3.2). Abbie explained that even where training in autism was available generalist SLTs may not prioritise this over other training in, for example, language impairment.

The importance of keeping up with autism related CPD was highlighted due to the changes in diagnostic manuals. Knowledge can become out of date and SLTs need to spend time familiarising themselves with new diagnostic criteria (code 1.3.3). Ann also referred to the need to be aware of changes in views about terminology and how this is being influenced by *“the growing neuro-diversity movement and the voices of autistic people”* (code 1.3.4).

Code 2 Experts’ views about training

Code 2.1 Views about the RCSLT curriculum guidelines

The interviewees were asked whether they were aware of the RCSLT curriculum guidance and what their views about it were. One respondent was not really aware of them at all and two were aware of them but were reluctant to comment. Nicky commented that the breadth of the curriculum was needed as it was a foundation which enabled qualified SLTs to *“go into any area”*. Conversely another respondent commented that there were issues with the weighting of the curriculum content which did not reflect the initial caseloads faced by newly qualified SLTs, citing a disproportionate emphasis on specialist areas such as voice. Jane had participated in the review of the curriculum and had been able to influence the course content at her local SLT training establishment. She reported:

“We have expanded on the curriculum at our local training place ... as a group we have contributed to that. We have very good links with our university so we’ve been able to add to their team... their information that they provide”. [Jane]

Code 2.2 Increased demand for ASD knowledge

Helen commented on the increase in the number of children being diagnosed and the need for more staff specialising in autism. She stated that there was an increase in the number of children in mainstream settings. Carol also alluded to

the increased demand for suitably trained staff *“clinically there was such a growing demand for our service and for diagnostic services”*.

Code 2.3 Changed caseloads/Code 2.6 Training needs updating

Helen also referred to the change in the make up of typical caseloads (code 2.3) as an important aspect to address training needs (code 2.6):

“it’s a very changed caseload to what it was certainly when I qualified and I think it’s a very different caseload to what students are being prepared for at university... I think College may need to look more at what a realistic caseload is now and whether the curriculum that they are recommending or advising is preparing students for that. I think that they could look for example at areas that students have a lot more in-depth training in such as voice and perhaps just think about the proportion of therapists that end up working in that field as opposed to the proportion of therapists that end up working to some degree with ASD, so I do wonder about the weighting of the curriculum”. [Helen]

Kate commented on the increasingly complex presentation of children that newly qualified SLTs were now expected to work with and expressed the opinion that this situation had arisen because the role of the SLT involved supporting and enabling others to work with less complex cases. There was a common view expressed that the newly qualified SLTs would now encounter complex cases much earlier.

Codes 2.4 Structured approach/2.5 Competency framework

Several experts commented that a structured approach to developing competence would be welcomed (code 2.4). Nicky commented that competency frameworks were a useful tool. Helen expressed that what was required was *“A clear progression for therapists ... working from newly qualified practitioners towards specialist level in ASD”*. Carol explained the benefits of such an approach would be to ensure consistency, adding that *“I think that a collective and systematic approach is certainly missing and different people’s understanding of autism will be very different which isn’t ideal”*. Competency frameworks were mentioned as a useful way to provide structure and direction in what could otherwise be a random

and opportunistic learning journey (code 2.5). The belief that training is needed throughout an SLT's career was also a commonly shared view.

Code 2.7 Inadequate practical/clinical experience

Helen remarked upon the impact of the lack of practical experience on NQPs, stating *"We need to be giving students positive experiences rather than letting them come into a job where they haven't had a chance to work with those children. They really are terrified"*.

Code 3 Experts' views of NQPs

Code 3.1 Confidence

The experts were asked about their general impressions with regard to the competence of NQPs to work with children with ASD. Lack of confidence was an issue highlighted by several experts. Overall, the experts felt that NQPs were not adequately prepared for working with children with autism. Helen reported that NQPs were 'terrified' and felt out of their depth due to their lack of preparation. She described the emotional response of NQPs:

"I feel that they come into a role where they are given quite a large proportion of children with complex needs within their caseload and I think they're terrified to be honest... and then really, really panic about the child they see in the classroom who won't respond to their name let alone sit down and engage with whatever they plan so I think they come out really, really terrified and not ready at all for the caseload that they receive.... the information they had received in their lectures had been theoretical... she had no...no really clinical skills training on actually what to do with that child so that feels like an enormous gap". [Helen]

Carol also described NQPs feeling anxious about working with children with autism and requiring support. She reported:

"Certainly [autism is] one of the clinical areas that they either ask for or that they want experience of or feel quite apprehensive about....We have ... an allocation system whereby the children on the waiting list are just allocated to the next available person. So they are very comfortable to take off the next phonological disorder [from the waiting list], the next early language

development problem, but then as children come to the top of the waiting list who have ASD or query ASD beside them, they would themselves be thinking I'd need to do that with somebody else or I would rather somebody else pick that child up". [Carol]

Code 3.2 Lack of knowledge and skills/inadequately prepared

Carol clearly recognised that NQPs do not enter the profession ready to support children with autism and reported that this situation meant that further development would need to be provided as soon as possible. She explained:

"It will be something that a newly qualified therapist encounters very quickly in their caseload allocations so...locally we would quite quickly want them to develop those skills and competencies". [Carol]

Abbie explained that the training that new graduates received did not prepare them for having to work in different ways that are more suited to the needs of children with autism, stating that *"I think sometimes they get frustrated because they are trying to see these children as part of an ordinary clinic"*.

In general the impression was that graduates had some theoretical knowledge about autism but lacked knowledge about interventions or the skills needed due to lack of experience in working with this group. Ann identified that NQPs had very limited knowledge of interventions and *"very limited skill in interacting with children who are difficult to reach"*. Kate felt that the understanding of autism was more fundamentally lacking *"I would say there's a lack of depth, and a lack of ... secure foundational knowledge of ... it's a neuro-developmental disorder, it's a dyad ... some of the basics"*.

Code 3.3 The areas that NQPs need support with

The experts were asked about the advice, support and training that they felt needed to be provided for junior colleagues that they worked with. Basic awareness of autism was mentioned as an area that NQPs lacked (code 3.3.1). The importance of supporting staff to link theory to practice was highlighted (code 3.3.3). Practical skills and hands-on experience with this client group was strongly recommended. One expert felt that NQPs lacked the ability to apply clinical

reasoning to cases in a systematic way and had needed to teach them how to do this and, linked to this, the need to provide opportunities for case discussion was a common theme (code 3.3.2).

Several therapists reported that they provided extensive structured training programmes and assumed that their junior colleagues came from a position of having no knowledge (code 3.3.1). Jane explained:

“What we usually assume is that they have very little and we want to induct them into the X way anyway because we have a comprehensive pathway and support package within X. So we always say to any therapist that starts with us ‘we’re going to assume you’ve got no knowledge’”. [Jane]

Within her role Carol provided a structured programme for junior colleagues. She explained:

“We developed...training which our speech and language therapists access...the Level 1 training was called ‘What is Autism?’ the very basics...we give them the option when they come out, but as yet haven’t had a newly qualified member of staff not take us up on it”. [Carol]

Nicky reported that she had carried out lots of training and had noticed that the purpose of this has changed over the years. Initially the training that she had provided had been about the diagnosis of autism, then about working with families and target setting and was now more about differential diagnosis.

One issue that was highlighted as an area that NQPs would request support was managing the behaviour exhibited by children with ASD (code 3.3.4). Abbie reported *“they might come to me because they can’t get a child to engage, they can’t maybe keep the child in the room, the child is very distressed”* and Carol stated *“it appears very behavioural, it appears very challenging, that’s when therapists feel less comfortable with sort of breaking that down”*. It was reported that NQPs needed support to develop skills to work in a different way to how they had previously worked (code 3.3.5). Abbie summed this up by stating *“they get frustrated because they are trying to see these children as part of an ordinary clinic”*. There appeared to be a particular concern that NQPs lacked knowledge of

how to work with non-verbal children. Helen commented about the difficulties NQPs had with working with this group *“I also did at the very start of my post three years ago just a quick survey of all the therapists to see what sort of things they would want from me and it tended to be support around non-verbal children”*.

Code 3.4 The need for joint working with experienced staff/shadowing

Carol described how junior staff would ask for joint working to support their development, *“they would certainly identify to us that they wanted joint sessions or that they wanted to do some shadowing”*. Helen and Ann both reported that this method was frequently used to support staff. Helen said *“my role also involves a lot of joint working to skill up the mainstream therapists”* and Ann commented *“we will do joint sessions across the different teams so that we can share that skill with our community colleagues”*.

Code 3.5 The need for training in specific approaches

Respondents mentioned various specific approaches that they provided training in such as ABA, Picture Exchange Communication System (PECS), Intensive Interaction and SCERTS. Kate described how she would provided training based on the requests of staff, *“more than one person has said to me ‘Can I book a slot with you to talk about... whatever’ and I’ll say well actually I’ve had a few of you say that, could you find a date when you can all come”*.

Code 3.6 The need for support to avoid feeling overwhelmed

Kate pointed out how the demands on NQPs needed to be carefully managed in order to avoid them feeling overwhelmed early on in when they are just settling in to working life, *“they are also juggling you know the processes and systems of work...I think we have to try and not give them too much too soon ‘cos otherwise it’s just overwhelming”*.

6.4 Summary of findings from Phase 2

The purpose of this phase of the research was to gain insights from expert SLTs into their experiences and perspectives about how they had developed their own competence as specialists. The findings concurred with the literature review which

described an integrated process of knowledge acquisition, exposure to a range of experiences and a systematic method of critical reflection. There was not one single route and several of the experts related stories of taking advantage of opportunities as and when they presented themselves. The findings from this phase of the research outlined here are further discussed in Chapter 8 together with the findings from the online questionnaire described in Chapter 7.

6.5 Next steps

The data from the interviews were used to develop the questions for the next phase of the research - an online questionnaire aimed at newly qualified practitioner SLTs (NQPs). The aim of the questionnaire was to gather the NQPs' views about the training they had to work with children with autism, their feelings about working with this client group and the support and training available to them in order to be able to compare this with the perceptions of the experts. In Chapter 7, therefore, I outline Phase 3.

CHAPTER 7

Research Phase 3 – Questionnaire Survey of Newly Qualified SLTs

In this chapter I outline the procedure taken for the third and final phase of the research - an online survey of newly and recently qualified practitioner SLTs (up to five years post-registration) or NQPs. Following on from Phase 2, in which the views of expert specialist SLTs were explored, the purpose of this survey was to address the research sub-questions from the alternative perspective of those at the beginning of their careers.

Whilst the questions were proposed in the original study design, the findings from the interviews helped to refine the questions used in the survey. I explain how the questionnaire was developed, tested and distributed and how the results were analysed. The results are then reported under headings that relate to the research questions.

7.1 Procedure

7.1.1 Rationale for the method chosen

An online questionnaire was chosen for Phase 3 as the optimal way to gain information from a wide range of respondents in a short amount of time. Interviews and observations were also considered but it was felt that they would not reach a wide enough sample of NQPs to be able to draw any possible conclusions about current practice and perceptions.

The advantages of using online rather than paper-based questionnaires are well known and include costs, response times, the ability to track response rates and the ease of data preparation (O'Leary 2017). Several online survey tools are currently available. The tool chosen was Online Surveys (formerly Bristol Online Surveys), as it was available via the university and allowed for a wide range of question formats and graphical representation of data.

7.1.2 Questionnaire development and design

In Chapter 4 'Methodology' I explained how the preliminary research questions were developed. Suggestions were made about how the questions may be answered (Table 4.2). The qualitative data collected from the interviews with expert SLTs (Phase 2) was also examined for further areas to investigate. Specific questions were formulated following the input and comments by the experts. Additional advice was gained by telephone and email from an expert with experience and expertise in SLT university course design and implementation. Following this advice, questions were added to invite respondents to report on the type of experience gained as part of the training programme and outside of it. In order to elicit answers to these questions, and give respondents the opportunity to provide detailed responses concerning their views a variety of question formats was used, including yes/no, multiple choice and open text boxes. The research questions addressed by the survey of NQPs are outlined below in Table 7.1.

Table 7.1 Section of Table 4.1 showing questions to be answered in Phase 3

Sub-questions – what do I want to know?	Data collection questions	How can I find out?
What do NQPs say about the training received to work with children with ASD?	What training did you receive in your pre-registration course related to working with children with ASD? What were your feelings about the training you had received at the time you graduated? How often do you encounter children with ASD in your current post? How confident are you that you can identify when a child may be on the autism spectrum? How confident are you that you could carry out an assessment of a child and provide the information needed to enable a diagnosis to be made? How confident are you that you can assess the need for SLT of a child with autism? How confident are you in your ability to produce and deliver an SLT intervention programme for a child with autism? What do you feel would help you most to develop competence? What opportunities are available to you to access advice and support? What opportunities are available to access further training? What opportunities are available to access further postgraduate qualifications?	Ask newly qualified practitioner SLTs (NQPs)

The research questions were operationalised as a set of survey questions based on the key areas or themes:

- Training provided
- Feelings about training provided
- Current caseload

- Confidence
- Competence
- Continuing professional development

Open comment boxes were a regular feature of the questionnaire, designed to capture other evidence that could not be elicited only from closed questions. Respondents were given the opportunity at several points to elaborate their responses. It was felt that this was necessary in order to gather more in-depth data that would be captured by closed questions to complement issues raised by the experts. This included giving more information where they may have indicated 'Other'. Open questions were also included in order to give the respondent 'free rein' to say what they wanted about their training or what they felt would aid the development of competence.

First drafts of the questionnaire were reviewed by the researcher's doctoral supervisors and suggestions for improvements were incorporated related to question types, order of questions and wording of questions. Further draft versions of the questionnaire were then piloted by SLT colleagues who were outside of the cohort targeted, i.e. they had been working as qualified SLTs for more than five years. This piloting provided information on usability, sense and time required. Five individuals consecutively piloted the questionnaire in total – four face-to-face and one by email. During the face-to-face pilots, the researcher sat with each of the SLTs as they completed the pilot surveys and made records of how long the survey took to complete, any questions arising as they completed the survey and any comments. Changes were made to the survey based on these comments after each pilot. Some wording was changed to reduce ambiguity and improve clarity. One question was removed due to duplication. Piloting was continued until no new comments or suggestions were made. The completed survey was expected to take approximately 10 to 15 minutes to complete. See Table 7.2 for summary of final version of online questionnaire.

Table 7.2 Summary of Questionnaire: Autism Training for Speech and Language Therapists
(Exact question order and full questionnaire layout is provided in Appendix 6)

Q no	Question	Response type
1	I agree to take part in the survey	Yes/ No
	Demographic information	
28	What year did you qualify as a Speech and Language Therapist?	Click one of 5 options 2013, 2014, 2015, 2016, 2017, 2018
29	At which university did you receive your pre-registration Speech & Language Therapy training? 18 UK options listed plus 'other'	Click one option
a	If you selected other, please specify	Open box
30	Did you attend as a mature student?	Yes/ No
31	Did you have any experience of working with children with autism prior to attending your training course?	No / Yes
a	If you selected 'yes', please state what kind of work this was	Open box
	Pre-Registration Training	
2	Thinking back to your pre-registration training, do you remember the taught component having any autism specific content?	Yes/ No/ Don't remember
3	Approximately how much time was allocated to the taught component of this topic of study?	5-options (e.g. no autism content, an hour or less, more than an hour but less than a day, one whole day, more than 1 day). N/A (don't remember)
4	Do you remember learning about:- the communication characteristics of children with ASD, specific assessment strategies to use with children with ASD, specific intervention strategies to use with children with ASD?	Yes/ No against each of the 3 options
5	Which of the following were you made aware of? Using visual support strategies, e.g. cue cards, schedules, Picture Exchange Communication System (PECS), Providing communication opportunities, e.g. choices, Adult/Child interaction strategies, e.g. joint attention strategies, None of the above	Click on all that apply
6	How well do you feel the following areas (recommended in the RCSLT Curriculum Guidance) were addressed in relation to working with children with autism? Theoretical knowledge of autism, Approaches to assessment, Theoretical knowledge of assessment tools, Approaches to intervention, Alternative and augmentative communication (AAC), Multi-disciplinary working, Outcome measures, Evidence based practice	4-point scale (Very well, Quite well, Quite poorly, Very poorly) for each question
7	Did you meet any children with autism on any clinical placements?	Yes/ No
8	Did you work directly with any children with autism on any clinical placements?	Yes/ No
9	At the end of your pre-registration training, how satisfied were you with the training you had received to work with children with autism?	4-point satisfaction scale; very/quite unsatisfied, quite/very satisfied
10	At the end of your pre-registration training, how confident did you feel about working with children with autism	4-point confidence scale; very/quite unconfident, quite/very confident
11	Did you feel that there were any clinical areas that were given too much emphasis?	Yes/ No
	If you selected "Yes", please specify	Open box

12	Do you have any other comments about the pre-registration training you received in relation to working with children with ASD?	Space to provide comments
	Experiences since starting work	
13	After starting your first post as a qualified SLT, how soon did you work with children with autism?	5 options; In 1 st year, after 1-2 yrs, after 3 yrs, not worked since qualifying, worked but not autism.
14	Did your employer/SLT department provide you with any ASD training prior to working with children with autism?	Yes/ No/ N/A (not work with children with autism)
a	Have you received any training in working with children with autism since working as a SLT?	Yes/ No/ N/A (not work with children with autism)
b	What training was provided? In-house training, External training course, n/a - my employer has not provided any autism training	Click on all that apply
15	Have you attended training courses in any of the following areas? General autism awareness, Specific diagnostic assessment tools, Specific communication approaches, Broad autism intervention approaches, Parent training programmes, N/A-none, Other	Click on all that apply
16	Have you been trained to use any of the following diagnostic assessment tools? M-CHAT, ADOS, ADI, DISCO, NA-none, Other.	Click on all that apply
17	Which of the following specific communication approaches have you been trained to use (in-house or external accredited courses? Picture Exchange Communication System, Voice output communication aids, Verbal Behaviour Approach Other, N/A-none	Click on all that apply
a	If you selected Other please specify	Open box
18	Which of the following parent training programmes have you been trained to use? EarlyBird or EarlyBird Plus, Hanen 'More than words', Adult/Child Interaction, N//A none, Other	Click on all that apply
a	If you selected Other, please specify:	Open box
19	Since qualifying as a registered SLT, have you funded any autism training yourself?	Yes/ No
20	Which of the following self-directed continuing professional development (CPD) activities have you engaged in with regard to children with autism? Reading books, Reading journal articles, Online learning, E-learning modules or courses, Webinars, YouTube content, Other, N/A none	Click all that apply
a	If you selected Other, please specify	Open box
21	Have you ever sought advice from a colleague with more experience in working with children with ASD?	Yes/ No/ N/A -not worked with children with ASD
22	If you have sought support or advice from a more experienced colleague, what was the purpose of this? Help with --assessment for diagnosis, help with assessment of needs, help management, Other	Click all that apply
23	What do you feel would help you most to develop your competence to work with children with autism?	Open box
	Current caseload and job role	
24	Do you currently work with children with autism?	Yes, No not autistic children, No do not work with children
25	How often do you encounter children with autism in your current post?	5-point frequency scale, very, frequently, often, rarely, never, NA
	Confidence	
26	When you first qualified how confident did you feel to work with children with the following conditions? Children with language difficulties, Children with speech difficulties,	4-point confidence scale. Use scale once for each condition

	Children with social communication difficulties, Children with voice difficulties, Children with dysfluency	very/quite unconfident, quite/very confident
27	How confident did you feel about the following? Recognising social communication difficulties, Assessing social communication difficulties, Treating social communication difficulties, Working with non-verbal children, Training others to work with children with autism	4-point confidence scale. Use scale once for each aspect; very/quite unconfident, quite/very confident
	Any further comments?	
32	Do you have any other comments you would like to add related to the training you have had in relation to working with children with autism?	Open box

7.1.3 Survey distribution

The population targeted in this phase of the research was newly qualified SLTs (up to five years post-qualification) who had attended their pre-registration training in the UK. Five years was chosen as a period in which therapists would still be relatively inexperienced, have recent memories of the content of training courses and how they felt at the beginning of their careers. It was considered possible that if a lower cut off point was selected then an insufficient number of participants would be available. A multi-pronged recruitment strategy for the questionnaire was adopted which was coordinated with the first phase of the research by using experts in the recruitment process.

The expert SLTs who were interviewed for Phase 2 of the research were keen to help with the distribution of the questionnaire in Phase 3. As these interviewees were based in different areas of the UK, this was an effective way of ensuring that the questionnaire had wide geographical reach. They were contacted to ask if they would distribute the email invitation and link to the survey for newly qualified therapists within their networks. I also contacted other expert SLTs who had expressed an interest in the research but who had not been selected to be interviewed and asked them to distribute the questionnaire. The spread of responses from around the UK suggests that they did so (see Appendix 5 for email invitation).

Secondly, I contacted the SLTs who were listed on the RCSLT website as Research Champions as they had proved helpful in putting me in contact with the expert SLTs for Phase 2.

The questionnaire was titled 'Autism Training for Speech and Language Therapists'. This was chosen to attract the attention of SLTs in a short phrase which summed up the main topic of research. Further information was included in the body of the email invitation and also in the introduction to the questionnaire once the link had been clicked on. This made it clear that the email was an invitation to participate in a survey and not, for example, an advertisement for training.

The wording of the email inviting respondents to complete the survey also requested that they forward the email to others known to be in the target population. This method of distribution could be referred to as a type of 'snowball sampling' which is recommended when you are sampling 'populations that are not easily identified or accessed' (O'Leary 2017, p. 211). One advantage of this method is that it is possible to reach a wider range of respondents than would otherwise be possible. Another advantage is that emails would be received from known sources; as the recipient would likely know the sender of the invitation they might be less likely to dismiss the invitation as 'spam'. A limitation of the approach is that the researcher does not know how many of the target population receive the invitation which makes it difficult to calculate a response rate. An element of response bias is noted as it might be assumed that SLTs who are interested in autism or who are currently working with children with autism were more likely to respond.

7.2 Data screening and analysis strategy

7.2.1 Data screening

Ineligible data

A total of 131 responses was received. The first step was to look at the responses and remove any ineligible data, for example, responses that were completed by SLTs who had been qualified for more than five years, or by SLTs who were trained outside of the UK. There were 12 ineligible responses. Three did not

indicate what year they had qualified, four indicated that they had qualified longer than five years ago, and five indicated that they had trained outside of the UK. Some responses were ineligible on more than one criterion. After removing these 12, this left 119 usable responses, 91% of the total.

Missing data

The great majority of respondents answered all closed questions. Only five closed questions had missing data, with only one question not responded to on each of these five occasions. Further information is provided in Appendix 9. When reporting the data, the percentages were calculated from valid responses only, i.e. excluding missing values.

7.2.2 Analysis strategy

Both quantitative and qualitative data were analysed. First quantitative data were presented using frequencies and percentages. Means and medians were also reported. Some scaled responses were re-grouped, for example, a percentage of 'quite unconfident' or 'very unconfident' were grouped together to illustrate general lack of confidence. In addition to easing interpretation, this was sometimes carried out in order to increase the cell sizes for analysis with chi-square. The two-tail chi-square test of independence (significance level set at less than or equal to 0.05) was used in the statistical analysis.

Qualitative data were collected using the open text boxes (see Appendix 6, Questions 11, 17, 18, 20, 23, 31, 32). The data were summarised and subject to further interpretative thematic analysis. Each of the open text boxes was investigated for common themes and grouped accordingly. The number of comments referring to each theme is reported and illustrated with 'typical' quotes where appropriate.

Quantitative and qualitative data analysis is reported in section 7.3 in relation to each question.

7.3 Results

7.3.1 Demographic information

Year of qualification

The survey was targeted at newly qualified SLTs who had qualified in the last five years. Respondents were asked what year they had qualified as a speech and language therapist (see Figure 7.1).

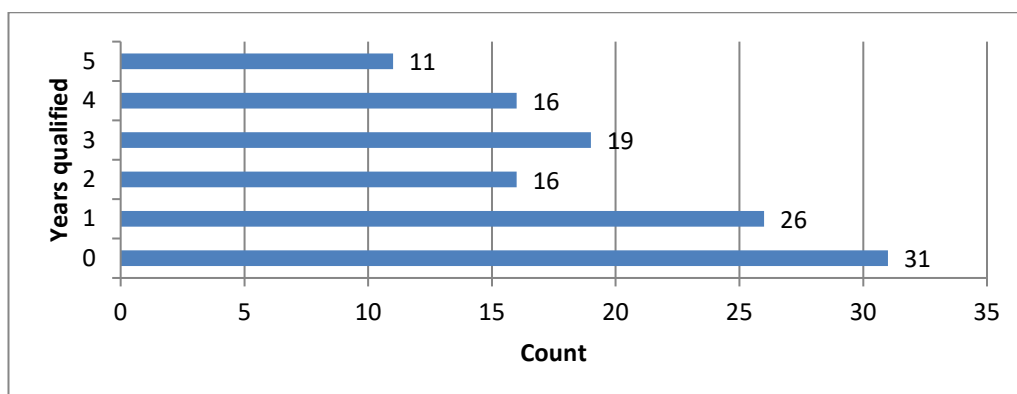


Fig. 7.1 Number of respondents by how many years post-qualification

There was a spread of years since qualifying, with nearly half of the respondents (47.9%; $n = 57$) qualifying in the last 2 years. Although the survey targeted newly qualified SLTs with up to five years' experience, the sample was skewed towards very inexperienced SLTs, 26.1% ($n = 31$) having qualified within the last year at the time of completing the survey and more than half of participants qualifying in the last 24 months. The median number of years post-qualification was 2, the mean was 1.97, with a standard deviation of 1.677.

Higher Education Institution attended

Respondents indicated from which Higher Education Institution in the UK they had received their pre-registration speech and language therapy training (see Appendix 7). The results indicated that there was a spread of respondents from across the UK HEIs, with at least one respondent from each of the 18 universities providing SLT courses. There were respondents from all areas of the UK indicating a good geographical spread (see Table 7.3).

Table 7.3 Respondents by region of the UK

Region	%	n
England – North	23.5%	28
England – London and South East	21.9%	26
Scotland	16.8%	20
Wales	16.0%	19
England – Midlands	8.4%	10
England – West	6.7%	8
Northern Ireland	3.4%	4
England – East	3.3%	4
Total	100%	119

Number attending as a mature student

When asked whether they had trained as a mature student about a third (35.6%; n = 42) indicated that they had done so.

Experience of autism prior to training

Respondents were asked if they had any experience of children with autism prior to attending their SLT training course (see Table 7.4). More than a third (38.7%; n = 46) indicated that they had some experience. They were asked what kind of experience this was (open text box). Thematic analysis indicated three main themes – ‘work/work experience’, ‘volunteering’ and ‘sibling/family member’. Some comments included more than one theme. See Appendix 8(d) for raw data.

Table 7.4 Experience of children with autism prior to training

Theme	n	Example Comments
Work/work experience (Support worker, Play worker, Care assistant, Learning Support Assistant, Teaching Assistant, SLT assistants)	38	<p><i>"I used to run a Summer Kids Club...It was very inclusive."</i></p> <p><i>"Working as a 1:1 LSA in a mainstream school"</i></p> <p><i>"Work experience at a special school"</i></p> <p><i>"Support worker/carer"</i></p>
Volunteering/Voluntary work (Summer play schemes, inclusive clubs, e.g. scouts, swimming clubs, pre-school settings)	6	<p><i>"Volunteering at summer schemes...for children with additional needs"</i></p> <p><i>"Voluntary work in schools and sports clubs"</i></p>
Sibling/family member	3	<i>"I was a speech and language therapy assistant. I am also a sibling of an adult with autism."</i>
Total	46	

It was noted that just over a third (35.6%; n = 42) of respondents reported that they had entered their pre-registration training as a mature student and also that a similar number of respondents (38.7%; n = 46) stated that they had some experience of working with children with ASD prior to entering their pre-registration training. Analysis indicated that these two groups largely overlapped.

7.3.2 How Phase 3 research addresses the research questions

Training

Recollection of ASD-specific taught component

The majority of newly qualified SLTs (97.5%; n = 116) remembered some autism-specific content in their pre-registration training.

Quantity of taught component

When asked approximately how much time was allocated to autism specific content, the responses varied (see Figure 7.2).

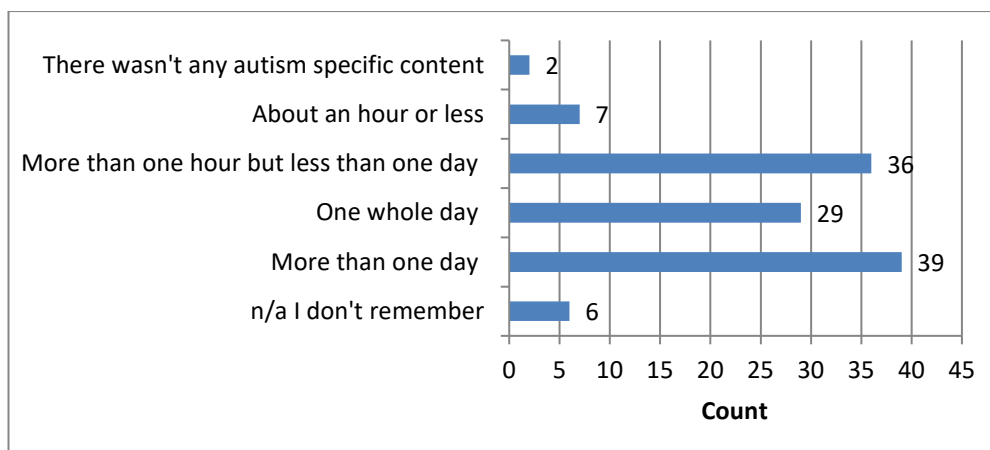


Fig. 7.2 Number of respondents by the amount of time reported to have been allocated to autism specific content

The most common response was 'more than one day' (32.8%; $n = 39$). The majority (57.2%; $n = 68$) indicated that they had received one day or more than one day training in autism compared to 36.2% ($n = 43$) who indicated that they had received less than one day's training ('about an hour or less' combined with 'more than one hour but less than one day'). Only 7.6% ($n = 9$) reported that there had been no autism content or about an hour or less.

Recollection of type of taught component

Respondents were asked to indicate whether they remembered learning about different aspects of working with children with autism (see Table 7.5).

Table 7.5 Recall of autism-specific content

During pre-registration training do you remember learning about:	% yes	number
- the communication characteristics of children with ASD?	95.8%	114
- specific assessment strategies to use with children with ASD?	38.7%	46
- specific intervention strategies to use with children with ASD?	60.5%	72

Nearly all respondents reported that they had learnt about the communication characteristics of children with ASD. In contrast, just over a third (38.7%; $n = 46$) remembered some content about specific assessment strategies.

Communication strategies referred to during training

Respondents were asked to indicate, from a given list, which communication strategies they were made aware of during their training. They were invited to tick all that applied (see Figure 7.3).

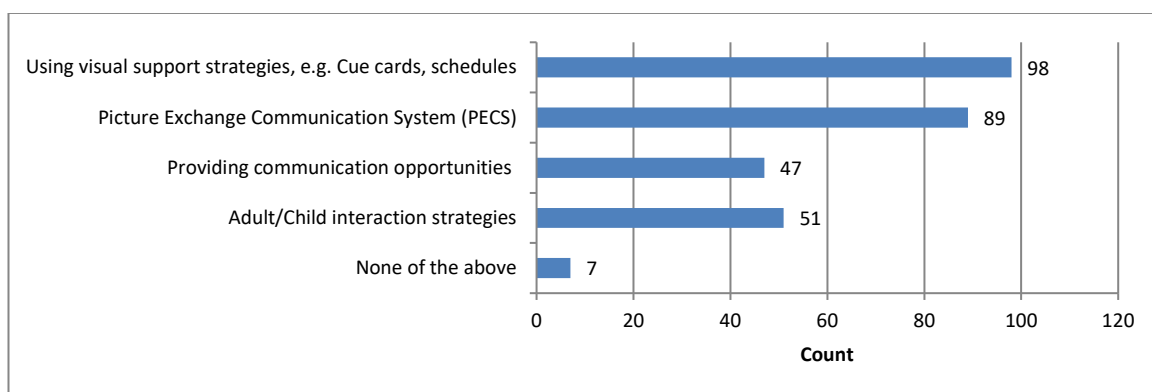


Fig. 7.3 Communication strategies referred to during training

Most respondents were aware of the use of visual support strategies such as cue cards and Picture Exchange Communication System (used to provide children who do not have a functional means of communication with the means to make requests). Far fewer, however, remembered having been made aware of how to provide communication opportunities or strategies to support adult/child interaction. A small number of respondents ($n = 7$) indicated that they had not been made aware of any of the four listed strategies to support communication.

Recommended curriculum areas covered

Respondents were asked how well they felt various areas, recommended in the RCSLT Curriculum Guidance, in relation to working with children with autism were addressed (see Table 7.6).

Table 7.6 Quality of training

How well were each of the following areas addressed:	Very well		Quite well		Quite poorly		Very poorly		mean *	SD	median
	%	n	%	n	%	n	%	n			
Theoretical knowledge of autism	32.8	39	53.8	64	10.9	13	2.5	3	1.83	.717	2
Alternative & augmentative communication	21.0	25	39.5	47	27.7	33	11.8	14	2.30	.935	2
Multidisciplinary working	16.0	19	50.4	60	26.1	31	7.6	9	2.25	.815	2
Evidence-based practice	11.8	14	43.7	52	37.0	44	7.6	9	2.40	.795	2
Outcome measures	8.4	10	25.2	30	50.4	60	16.0	19	2.74	.828	3
Approaches to intervention	5.0	6	43.7	52	37.0	44	14.3	17	2.61	.794	3
Theoretical knowledge of assessment tools	4.2	5	33.5	40	48.7	58	13.4	16	2.71	.749	3
Approaches to assessment	3.4	4	30.3	36	55.5	66	10.9	13	2.74	.695	3

* where 1 = very well and 4 = very poorly

The majority of respondents felt that theoretical knowledge of autism, alternative and augmentative communication, multi-disciplinary working, and evidence-based practice had been addressed well. The majority of respondents, however, felt that outcome measures, approaches to intervention, theoretical knowledge of assessment tools and approaches to assessment were addressed poorly.

Clinical placement experience

Respondents were asked if they had met any children with autism on placements; 87.3% (n = 103) of respondents indicated that they had, and 70.6% (n = 84) indicated that they had worked directly with at least one child with autism.

Satisfaction with training course

When asked how satisfied they were with the training they had received to work with children with autism during their pre-registration training, more than half (54.7%; n = 65) were quite or very unsatisfied.

Confidence at end of training course

In accord with the overall satisfaction with the training for working with children with autism, when asked how confident they felt about working with children with autism at the end of their pre-registration training, well over half (59.6%; n = 71) of the respondents indicated that they felt quite or very unconfident about working with this client group.

Areas given too much emphasis

When respondents were asked if they felt there were any clinical areas that were given too much emphasis during their training, 44.9% (n = 53) indicated 'yes'. They were then asked, if they had selected 'yes', to specify (open text box). A variety of topics were mentioned. There were 52 responses in total; a few mentioned more than one area. 56 areas were mentioned in total. Thematic analysis was used to identify themes (see Table 7.7 below and Appendix 8(a) for raw data).

Table 7.7 Comments about areas given too much emphasis on SLT training

Topic area	n	Example comments
Adult work, acquired neurological or neurodegenerative disorders	11	<i>"I felt the majority of the clinical modules were aimed at an adult caseload", "Aphasia, Dysarthria - felt my training was more adult focused", "Stroke client group, especially details of assessment. Particularly as this is a client group I am unlikely to work in", "Adult, neuro type stuff. Course was very heavily adult based, which seemed to stem from course director's area of interest".</i>
Phonology or speech disorders	11	<i>"Strong focus on speech disorders", "Focus on phonological speech difficulties which does not make up a great proportion of clinical caseload."</i>
Autism theory/characteristics rather than assessment or treatment approaches	7	<i>"Theory instead of how to work with children with ASD in practice, e.g. managing meltdowns" "More focus could have been given to actual therapeutic intervention for children with ASD. There was a lot of time allocated to the theoretical side of ASD rather than actual management strategies". "the range of assessment approaches instead of more time being given to intervention" "too much about the characteristics of ASD - not enough about assessing re: functional strategies leading to intervention".</i>
Dysfluency/stammering	7	<i>"We had a whole module on fluency but only 2 guest lectures about Autism - Autism is a lot more common to my caseload than fluency".</i>
Voice or transgender voice	7	<i>"This is a very highly specialist area".</i>
Theoretical linguistics/grammar	6	<i>"LINGUISTICS!! Not even really a clinical area. But WAY too much time taken on this".</i>
Audiology/hearing impairments	4	<i>"I had a full module on audiology which included a written assessment at the end of the semester. I found this interesting ... but I feel I would rather have had a full module on ASD with an end assessment and only a few lectures on hearing impairment. In practice I refer children to audiology and there is an SLT hearing impairment specialist who I can seek advice from... I work with children with ASD on a daily basis in different settings and of different ages".</i>
Dysphagia/swallowing difficulties	2	<i>"We still have to do further training to work with this client group".</i>

Other areas mentioned once include cerebral palsy, foreign accent syndrome, conversational analysis and literacy.

Just one respondent commented that:

“Autism is over-emphasised and over-researched in comparison to other conditions affecting language and communication.”

One respondent summed up the difficulty with getting the balance right in course content:

“It's difficult because we didn't know whether we'd go into paediatrics or adults and so you have to cover everything to a certain degree. I felt that some areas were given more time than others, but I see less of that on my caseload, e.g. stammering vs ASD.”

Other comments about pre-registration training

Respondents were asked if they had any other comments about the pre-registration training they received in relation to working with children with ASD. There were 64 comments in total. Some comments included more than one theme (See Table 7.8 below and Appendix 8(b) for raw data).

Table 7.8 Thematic analysis of additional comments about training course (ASD)

Comments about training course	n
More training needed on intervention	21
More training needed on autism in general	18
Lack of experience or exposure to children with ASD during placement	17
Too much emphasis on theory	10
Comments about the high number or proportion of children with ASD on their caseloads	6
Comments about gaining most of their ASD experience outside of the course	4
Felt unprepared to work with this client group	4
Lectures should have been delivered by specialist clinicians	2
Felt that they were well prepared because they had completed a whole module on autism	1

The main issues highlighted were the need for more training on autism in general, more training specifically on interventions, and the benefits of practical hands-on experience or exposure to this client group.

Current caseloads

Respondents were asked how soon they started working with children with autism after starting their first post as a qualified SLT. Nearly all respondents (91.6%; n = 109) indicated that they had worked with children with ASD within the first year of working. Only one respondent indicated that they had worked with children but none with autism. Only 4 respondents had not worked with children since qualifying.

Respondents were asked how often they encounter children with autism in their current post (see Figure 7.4).

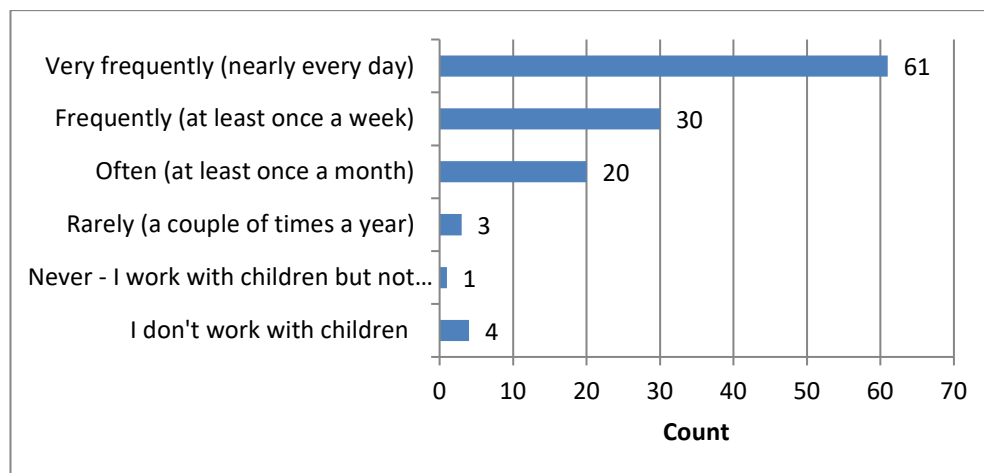


Fig. 7.4 Number of respondents indicating frequency of encountering children with autism in current post

The majority of the respondents (76.5%; n = 91) indicated that they worked with children with autism very frequently (nearly every day) or frequently (at least once a week). Only one respondent who worked with children indicated that they did not work with children with autism.

There were also comments that children with ASD formed a large proportion of caseloads, more than expected. Comments about the high number of children with autism on their caseloads were common:

“I see children with ASD almost every day.”

“Autism is currently 90% of my NQP caseload and I feel it’s a huge part of school SLTs’ jobs.”

“Not enough time spent on this area especially when it is the majority of a community SLT’s caseload.”

“It was not adequate particularly given what a large chunk of our client group this makes up.”

Workplace training and CPD

ASD training provided by employer prior to working with children with ASD

When asked if their employer/SLT department had provided any ASD related training prior to expecting them to work with children with autism, the majority of respondents (73.9%; n = 88) indicated that they had not been provided with any.

Type of training attended since starting work

Respondents were asked if they had received any training in working with children with autism since working as a SLT. About two-thirds (66.4%; n = 79) indicated that they had. Of those who indicated that they had received training 54.4% (n = 62) had received in-house training and 41.2% (n = 47) had attended at least one external training course. A large minority (29.8%; n = 34) indicated that their employer had not provided any autism training.

Respondents indicated what training courses they had attended from a given list. They were invited to select all that apply (see Figure 7.5). Most respondents had received training in general autism awareness or training in specific

communication approaches. Just over a third (34.5%; n = 41) indicated that they had not attended any autism training courses since starting work.

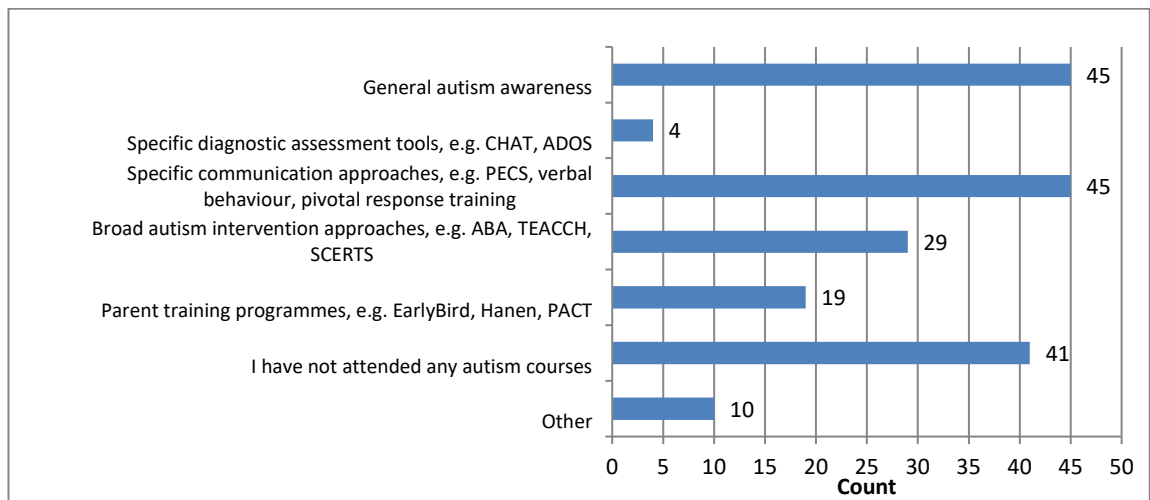


Fig. 7.5 Number of respondents indicating ASD-specific training courses attended

If they had selected 'other' they were asked to specify what training they had attended. Ten respondents selected 'other' and provided ten different comments:

- Social Communication, Emotional Regulation, and Transactional Support (SCERTS)
- Training was more of an informal conversation with colleagues.
- Talking Mats
- Tony Talks Autism
- I paid to attend a training course in London before I started working as an SLT. The course was called 'Identifying and Supporting Autism in the Early Years'.
- ASD London CENs (Clinical Excellence Networks)
- Sensory processing
- autism in girls - internal training
- Attention Buckets/Attention Autism with Gina Davis.
- Social stories, comic strips, Talkabout, social thinking (all in house)

Training to use diagnostic assessment tools

Respondents were asked if they had been trained to use any of a selection of diagnostic assessment tools; namely: M-CHAT (Modified Checklist of Autism in Toddlers), ADOS (Autism Diagnostic Observation Schedule), ADI (Autism Diagnostic Interview), DISCO (Diagnostic Interview for Social Communication), 'none' or 'other'. They were asked to select all that apply. By far the largest proportion of valid respondents (94.6%; n = 105) had not been trained to use any diagnostic assessment tools. Four respondents (3.6%) had received training in administering the ADOS.

Training in specific communication approaches

Information was sought about specific communication approaches that respondents had been trained to use (in-house or external accredited courses). They were asked to select all that apply from a list; PECS, VOCAs (voice output communication aids), Verbal Behaviour Approach, 'none' or 'other'. The highest number of respondents (47.9%; n = 57) indicated that they had not received training in any specific communication approaches for children with autism. A similar amount (46.2%; n = 55) had received training in PECS. A few respondents indicated that they had received training in the use of VOCAs (12.6%; n = 15). Only one respondent had received training in the Verbal Behaviour Approach. Respondents who indicated that they had received 'Other' training (11.8%; n = 14) were invited to specify. Seventeen respondents entered comments in the open text box. Some respondents mentioned more than one approach.

- Gina Davies's Attention Autism approach (n=5)
- SCERTS (n=3)
- Intensive Interaction (n=3)
- Makaton or Signalong (n=3)
- Adult/Child Interaction approaches such as Verve or Hanen (n=3)
- Low tech paper based AAC approaches (n=3)
- Social Stories (n=2)
- Visual supports or schedules (n=2)
- Objects of Reference (n=1)
- No training, self-taught (n=1)
- In-house training but no formal training (n=1)

Training to deliver parent coaching/training courses

Respondents were asked if they had attended any courses to deliver any parent training programmes and to select all that apply from a list (see Table 7.9 below).

Table 7.9 Parent training courses attended

Parent training course type	n	%
NAS EarlyBird or EarlyBird Plus	0	0
Hanen 'More than Words'	7	5.9
Adult/Child Interaction	34	28.8
None	75	63.6
Other	7	5.9

The majority of respondents had not attended any parent training courses. Those who had indicated 'other' were invited to specify in an open text box which training courses they had attended. There were 7 responses. Approaches mentioned included VERVE and 'Special Time Therapy' – both forms of Adult/Child Interaction. Other respondents indicated that they were aware of these approaches or had observed them being used but had not received training in them.

Self-funded training

When respondents were asked if they had self-funded any autism training since qualifying as a registered SLT, a minority (11%; n = 13) of respondents indicated that they had done so.

Self-directed CPD activities

Information was sought about the types of self-directed continuing professional development (CPD) activities respondents had engaged in. Respondents were given a list and invited to select all that apply (see Figure 7.6).

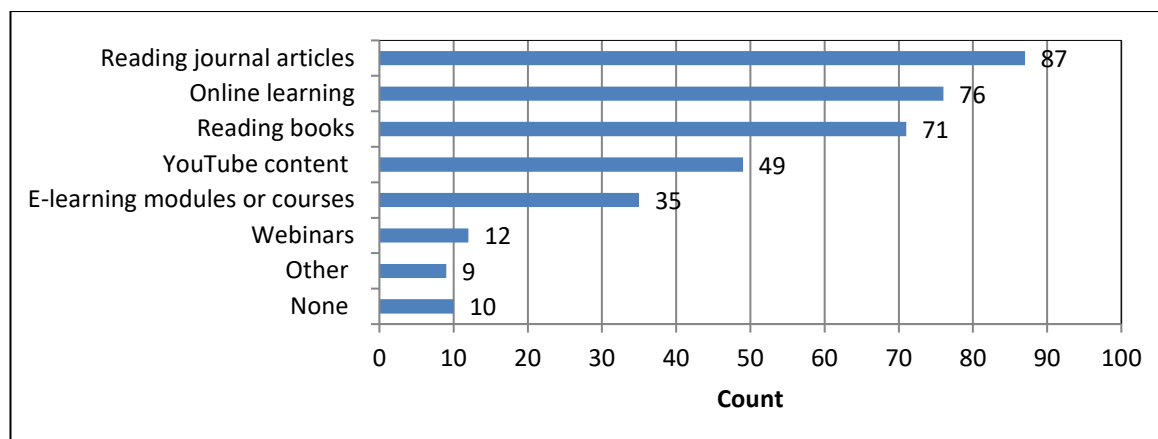


Fig. 7.6 Number of respondents indicating self-directed CPD activities engaged in

Most respondents (73.1%; $n = 87$) indicated that they had read journal articles as a means of self-directed learning. Online learning and books were also common responses. Nine respondents indicated that they had engaged in 'Other' self-directed learning. Eleven respondents added comments about the self-directed learning they had engaged in. Areas mentioned included reading articles, attending a CEN (Clinical Excellence Network) group, discussion with or shadowing colleagues.

Support from experienced colleagues

Respondents were asked if they had ever sought advice from a colleague with more experience in working with children with ASD. 95.8% ($n = 113$) indicated that they had done so. When asked what the purpose of this was, 93% ($n = 107$) indicated that they had sought help with management of cases, 72.2% ($n = 83$) had sought help with assessment of needs and 36.5% ($n = 42$) had asked for help with diagnostic assessment. Other reasons cited were 'information' and 'when to make a referral for assessment of social communication difficulties' implying that they would be referring on to someone else to do this assessment.

Confidence

Confidence across range of conditions

The confidence of newly qualified SLTs to work with a variety of client groups was explored to ascertain whether there was a generalised lack of confidence across the board or whether this was just with some client groups (see Table 7.10).

Table 7.10 Confidence with different client groups

When first qualified, how confident did you feel about working with children with...	Very unconfident		Quite unconfident		Quite confident		Very confident	
	%	n	%	n	%	n	%	n
- language difficulties?	3.4	4	18.5	22	68.1	81	10.1	12
- speech difficulties?	0	0	21.8	26	51.3	61	26.9	32
- social communication difficulties?	11.8	14	47.1	56	36.1	43	5.0	6
- voice difficulties?	53.8	64	37.8	45	5.0	6	3.4	4
- dysfluency?	34.5	41	47.9	57	16.0	19	1.7	2

The results showed that NQPs did not experience a general lack of confidence. Over three quarters (78.2%; n = 93) reported that they felt quite or very confident to work with children with language difficulties and the same number (78.2%; n = 93) reported that they felt quite or very confident to work with children with speech difficulties. However, 58.9% (n = 70) reported that they did not feel confident working with children with social communication difficulties. NQPs reported that they felt even less confident working with children with voice difficulties (91.6%; n = 109) or dysfluency (stammering) (82.4%; n = 98).

Confidence with different aspects of working with children with ASD

Information was sought about how confident respondents felt about certain aspects of working with children with autism (see Table 7.11).

Table 7.11 Confidence with different aspects of working with children with ASD

How confident do you feel about ...	Very unconfident		Quite unconfident		Quite confident		Very confident	
	%	n	%	n	%	n	%	n
- recognising social communication difficulties?	0.8	1	13.4	16	63.0	75	22.7	27
- assessing social communication difficulties?	10.1	12	46.2	55	37.8	45	5.9	7
- treating social communication difficulties?	15.1	18	52.9	63	26.9	32	5.0	6
- working with non-verbal children?	27.7	33	35.3	42	27.7	33	9.2	11
- training others to work with children with autism?	41.2	49	35.3	42	18.5	22	5.0	6

When questioned about different aspects of working with children with ASD the majority, 85.7% (n = 102), felt quite or very confident about recognising social communication difficulties but fewer felt quite or very confident about assessing (43.7%; n = 52) or treating (31%; n = 38). These reports of confidence made about training appeared to align with the reports about the training that they remembered receiving outlined in Table 7.6. The majority (95%; n = 114) remembered learning about the communication characteristics of children with ASD, compared with remembering learning about assessment strategies (38.7%; n = 46) and intervention strategies (60.5%; n = 72). These responses also align with comments regarding how well different aspects were addressed in training in Table 7.6. The majority of respondents (86.6%; n = 103) felt that theoretical knowledge of autism was addressed quite or very well, whereas most respondents felt that approaches to assessment were addressed quite or very poorly (66.4%; n = 79), as were approaches to intervention (51.3%; n = 61).

Although the majority (85.7%; n = 102) indicated that they were quite or very confident in recognising social communication difficulties, a large proportion (56.3%; n = 67) also indicated that they were quite or very unconfident in assessing social communication difficulties. An even larger percentage (68.1%; n

= 81) indicated that they felt quite or very unconfident with treating social communication difficulties. Respondents were asked how they felt about working with non-verbal children with autism. Nearly two-thirds (63%; n = 75) felt quite or very unconfident. A larger number (76.5%; n = 91) indicated that they felt quite or very unconfident training others to work with children with autism, despite this being the main method of intervention recommended by RCSLT on their website (RCSLT 2020c).

Bivariate analyses were carried out using cross-tabulations to examine the relationship between various factors and reported confidence at the time of qualifying (see Table 7.12). To examine this, a series of five 2 x 2 chi-square analyses was conducted, with each variable dichotomised (e.g. high/low experience; high/low training) and compared to a dichotomous measure of confidence (very/quite unconfident; very/quite confident).

As multiple comparisons were carried out the Bonferroni Correction was applied. This general convention is used to reduce the risk of making a Type 1 error (incorrectly rejecting the null hypothesis) which is more likely when several analyses are carried out on the same variable. To do this the level of significance is divided by the number of tests. The p-value of 0.05 was therefore adjusted to 0.01.

Table 7.12 Factors influencing confidence (multiple 2 x 2 tests using 2-tailed tests)

Factor influencing confidence	n	df	χ^2 value	p-value
Experience of working with children with autism prior to training	119	1	6.12	0.013
Amount of training in autism	113	1	5.40	0.020
Training provided by employers	115	1	3.56	0.059
Experience of working with children with autism on clinical placements	119	1	17.22	0.000

The relationship between experience of working with children with autism prior to training and reported confidence on qualifying

A 2 x 2 chi-square test examined whether those who had experience or no experience of working with children with autism before training would be more likely to report as confident rather than unconfident at the end of their training. Less than a third (31.5%) of those without prior experience reported as being confident at the end of training. In contrast more than half (54.3%) of those who did have prior experience reported as confident. The association was significant, $\chi^2 (1, n = 119) = 6.12, p < .02$ (two tailed) (see Table 7.12).

The relationship between the amount of training in autism and reported confidence on qualifying

A 2 x 2 chi-square test examined whether there was a relationship between the amount of training in autism recalled and the likelihood of reported confidence on qualifying. Amount of training was re-coded into more and less than one day. Almost three-quarters (73.3%) who reported receiving less than a day's training were unconfident. In contrast, fewer who reported receiving more than a day's training also reported feeling unconfident to work with children with autism on qualifying (51.5%). A positive association was found but this was not significant given the use of the Bonferroni correction; $\chi^2 (1, n = 113) = 5.40, p = .02$ (two tailed) (see Table 7.12).

The relationship between training provided by employers and reported confidence on qualifying

A 2 x 2 chi-square test examined whether there was a relationship between those who stated that they had received training in autism in the workplace and reported confidence to work with this client group. A positive association with employer training received and confidence of the respondent was found but this did not meet statistical significance, $\chi^2 (1, n = 115) = 3.58, p = .059$ (two tailed) (see Table 7.12).

The relationship between experience of working with children with autism on clinical placements and reported confidence on qualifying

A 2 x 2 chi-square test examined whether there was a relationship between those individuals who stated that they had met or worked directly with children with autism as part of their clinical placement training and reported confidence levels with this client group at the time of starting work. The association was strongly significant, $\chi^2 (1, n = 119) = 17.22, p < .00$ (two tailed) (see Table 7.12).

This analysis indicates that the factors with greater statistical significance in relation to reported confidence on qualifying are experience of working with children with autism on placements during pre-registration training and experience of having worked with children with autism prior to commencing pre-registration training.

Question 27 asked about confidence in various aspects of working with children with autism. By combining data in Table 7.11, a descriptive analysis of frequencies was carried out to compare how many individuals indicated that they were confident in each aspect (see Table 7.13). The results showed that the majority of respondents were confident in recognising social communication difficulties but less than half were confident in the assessment or treatment of social communication difficulties.

Table 7.13 Confidence in aspects of working with children with autism

Reported confidence	%	n
Recognition of social communication difficulties	85.7	102
Assessment of social communication difficulties	43.7	52
Treatment of social communication difficulties	31.9	38

A further analysis was carried out to investigate whether individuals reported being confident in all areas, one or two areas or none of the areas (see Table 7.14 below).

Table 7.14 Confidence (quite or very confident) in relation to different aspects

Confident in	%	n
Recognition, Assessment and Treatment	25.2	30
Recognition and Assessment only	17.6	21
Recognition and Treatment only	6.7	8
Assessment and Treatment only	0	0
Recognition only	36.1	43
Assessment only	0.8	1
Treatment only	0	0
None	13.4	16
Total	99.8	119

The results show that approximately 75% of individuals were not confident in all three aspects (recognition, assessment and treatment) of working with children with ASD, although most were confident in one or two areas as only 13% (16 respondents) indicated that they were not confident in any of the areas. Most respondents indicated confidence in the recognition of social communication difficulties (see Table 7.13). Those individuals that indicated that they were confident in only one area indicated that they were confident in recognition (see Table 7.14).

No respondents indicated that they were confident in assessment and treatment or just treatment but not recognition. Only one respondent indicated that they were confident in assessment but not recognition of social communication difficulties. This would appear to indicate that confidence in recognition of social communication difficulties is a prerequisite for confidence in assessment and/or treatment.

Quite a high number (more than a third) indicated that they had gained some work experience which included working with children with autism or similar client groups prior to starting on their SLT training courses (see Table 7.4). Relevant experience is likely to be taken into consideration when applying for SLT training

courses and a third of respondents indicated that they had started on their SLT training courses as mature students. These respondents, therefore, may have had more opportunity to gain relevant experience.

Training provided in the workplace had less of an impact on confidence but it could be that this is provided too late – after newly qualified SLTs have already been required to work with this client group (see Table 7.12).

Competence

This research did not objectively assess the levels of competence of NQPs but respondents were asked (Question 23) what they felt would help them most to develop their competence to work with children with autism. Ninety-nine respondents provided comments (83.2% of the sample of 119). Thematic analysis indicated that there were four broad categories of responses. Some respondents mentioned more than one theme in their comments (see Appendix 8c).

- 64 responses mentioned training
- 25 responses mentioned shadowing, observation or joint working with more experienced colleagues
- 25 responses commented that more exposure to children with ASD or practical hands on experience would be beneficial
- 7 responses mentioned that more supervision or case discussion would be helpful

Finally (Question 32) respondents were asked if they had any other comments that they would like to add related to the training they had received to work with children with autism. This gave respondents the opportunity to express any other opinions that may not have already been captured (see Appendix 8e for raw data). Thirty-nine separate responses were provided. Six responded 'no' or 'n/a'. There were, therefore, 33 responses that could be analysed. Some responses included more than one theme (see Table 7.15).

Table 7.15 Thematic analysis of additional 'free rein' comments

Topic area	Number	Example comments
Importance of experience/placements	14	<i>"a huge amount of my knowledge has come from working directly with (including observing) children with autism"</i> <i>"wider range of hands on experiences with individuals with autism"</i> <i>"It would be beneficial if universities could offer more placements related to ASD"</i>
More training on assessment and/or intervention	10	<i>"I often saw autism assessment on placement but nothing in the way of intervention"</i> <i>"not enough training was given re social communication intervention"</i> <i>"I would've liked more detailed discussion of intervention approaches"</i>
Lack of training in general	8	<i>"It was disappointing how little was covered during university"</i> <i>"there does need to be more emphasis in this clinical area... there are increasingly large numbers of children being diagnosed with ASD"</i>
Too much theory	4	<i>"it has been very focused on the theory but not enough on real-life experience"</i>
Lack of confidence	3	<i>"I was not confident about this client group when starting work."</i>
Lectures from affected people	2	<i>"Having parents of ASD children speak to SLT students would be really helpful"</i>
Good training = confidence	1	<i>"The training was very thorough... it has set me up well for day to day working life as I see children with ASD almost every day."</i>

No participants directly referred to additional support or training that they had received during their initial NQP probationary period to work with this client group, despite the fact that a high proportion of them were likely to still be undergoing the completion of their NQPs goals framework (RCSLT 2020d).

7.4 Summary of findings from Phase 3

The newly qualified SLTs who responded to this questionnaire remembered that there had been some autism specific content during their training courses, with nearly all reporting having learnt about the communication characteristics of children with autism. Theoretical knowledge of autism was thought to have been

addressed well, unlike approaches to assessment and interventions which were reported to have been addressed poorly. The majority reported that they did not feel confident when working with this client group on graduating, although they did feel confident when working with children with speech or language difficulties. The majority felt confident in recognising the signs of social communication difficulties but not with assessing or treating these cases. Despite these findings, the great majority reported that they were required to work with this caseload within the first year of working and very frequently, despite not receiving any additional training to enable them to do so. The majority had engaged in self-directed learning activities and had also sought advice from more experienced colleagues. Statistical analysis indicated that experience of working with children with autism during or prior to training was strongly correlated with confidence with this client group on graduation. When asked what factors supported the development of competence, the factor most frequently cited was experience.

In Chapter 8 I discuss the findings from the three phases and consider how the results answer the overarching research question and the various sub-questions. I then discuss the strengths and limitations of the research and the implications for the findings and suggest further areas for research.

CHAPTER 8

Discussion

The overarching question ‘how do SLTs develop competence to work with children with ASD?’ could be answered in different ways. The multi-phased approach taken in this research has enabled the question to be explored from different perspectives. First, the general question ‘how do adult learners develop competence?’ was explored theoretically in Chapter 2 by examining learning theories. Although each of the theories examined gave differing weight to assumptions about how learning is acquired, the overall conclusion was that learning is built on experience and is enhanced through social discourse using systematic and supported reflection. In Chapter 3, the literature review summarised the previous research that had been carried out in the area of training of SLTs to work with children with ASD. Whilst most researchers concluded that more training is needed, in general this conclusion was reached by considering the knowledge that SLTs have about autism rather than investigating more broadly how the essential elements of training are accessed. Three studies specifically mentioned that the knowledge of autism was enhanced in those with more experience (Plumb and Plexico 2013; Atun-Einy and Ben-Sasson 2018; Mendonsa and Tiwari 2018).

Turning to the more specific question ‘how should SLTs be trained to develop competence?’ in Phase 1 (part 1), I addressed this question by examining the curriculum recommendations of what should be learned by SLTs and how they should be taught according to national guidelines. Although there is very little direction in relation to the content of curricula about autism, the guidelines concur with the understanding of how competence is developed in that there is a recommendation that courses include a combination of theoretical and mandatory practical education under professional supervision. In Phase 1 (part 2), I addressed the question ‘is ASD included in training courses?’ and found that is is mentioned in just over half of the relevant HEI websites.

In Phase 2 (interviews with experts), I then addressed the question empirically by asking experts how they had developed competence and what their views were about the training provided; and Phase 3 (online questionnaire) addressed the question by asking NQPs about the pre-registration training they had to work with children, the training and support they have received in their early careers, their feelings about this training and their perceptions about its effectiveness.

In this final chapter I begin by restating the reasons for the research and then discuss how my understanding of adult learning theories influenced the development of the research design and the interpretation of the findings. This is followed by an evaluation of the strengths and limitations of the study using a framework of traditional and alternative indicators of credibility. I then draw together the key findings of the research into a 'mixed analysis' from each of the phases and consider the new knowledge the research has added to the field. I propose implications of the research for service users, SLTs, employers and the profession in general and present recommendations for ways to address the issues raised. Following this, I propose possible areas for future research. Finally, I draw together closing remarks and question the future direction of SLT with children with ASD in a post-COVID-19 world.

8.1 Restatement of the problem

The purpose of the study was to research how SLTs develop competence to work with children with autism. The question arose because of personal experiences and observations that led me to believe that the changes in caseloads encountered by community SLTs were not matched by changes in the preparation of SLTs and that newly qualified SLTs were now expected to be able to identify social communication difficulties, and to assess and provide interventions for children with autism without adequate preparation to do so.

A review of the literature indicated that concerns about the training of SLTs to work with children with autism had been raised by Prelock in 2001. Several subsequent questionnaire-based studies showed that SLTs reported having had minimal or no preparation or training to work with children with ASD. No studies were found that

investigated the competence of SLTs working in the UK. This endorsed my view that research in this area was clearly needed.

Drawing on the experiences of previous researchers and attempting to guard against my personal bias, a mixed methods approach was taken for this research. The first phase involved a comparative study of national and international recommendations for the training of SLTs to work with children with ASD. I felt that it was necessary to have an understanding of what training courses are expected to provide before investigating the SLTs' perspectives about what is actually happening. The second phase of the research involved interviews with expert SLTs and finally, in the third phase, an online questionnaire was designed and distributed to seek the views and perceptions of newly qualified SLTs. The sequential nature of the research was a deliberate strategy used to challenge any underlying assumptions and develop the research questions in a logical, meaningful and transparent way. The findings from Phase 1 were used to develop the interview schedule in Phase 2, and then the findings from Phase 2 were used to develop the questionnaire in Phase 3.

8.2 The influence of adult learning theories on the research design and the interpretation of findings

The investigation into adult learning theories found that several components were essential for the development of competence; namely, knowledge, skills and experience. The learning theories indicate that it is essential to consider the kind of knowledge, skills and experience that is needed and also the weight of influence of each of these elements necessary for optimal competence acquisition (Vygotsky 1978; Anderson and Krathwohl 2001; Yardley et al. 2012). Experience and skill development clearly need to be carefully planned and aligned with knowledge acquisition and not left to chance or the vagaries of practical placements offered by well-meaning clinical educators during pre-registration training or by supervisors guiding NQPs through the first year of work.

This research was designed, therefore, to explore aspects of these components (knowledge, skills and experience) from different perspectives. An exploration of

the existing professional recommendations for training was a necessary first step. Reference to essential knowledge, skills and experience was sought in the curriculum guidelines of national and international organisations, and these aspects were again explored in both the interviews and the questionnaire. The research tools were, therefore, designed to ensure that questions in relation to these aspects could be answered by exploring perceptions of knowledge, skills and experiences in relation to this clinical area. The valuable data collected showed the areas of training that had been adequate and those areas that were lacking and are central to the recommendations made to improve the development of competence.

8.3 Evaluation of the strengths, limitations and credibility of the research

The research described above falls within the mixed methods approach using a multi-phased sequential design, collecting both quantitative and qualitative data. This methodological design exploring social phenomena requires transparent description in order that its credibility can be evaluated. There is debate about how social science can be critically evaluated (O'Leary 2017) when the subjects of the research are people who have 'hidden agendas, fallible memories and a need to present themselves in certain ways. They can be helpful, defensive and/or deferential' (p. 56). It is problematic to assign a defined set of indicators for research that does not neatly fall into one paradigm. As this study is based in a mixed methodology design this issue is not easily addressed as different criteria are appropriate for qualitative and quantitative research and a range of indicators may be used. Criteria for evaluating quantitative research are based more or less on standardisation of the research situation and operationalisation of variables within it. Questions are raised about how far such criteria can do justice to qualitative research and its procedures, which are mainly based on communication, interaction and the researcher's subjective interpretations (Flick 2015).

Within a post-positivist paradigm it is recognised that an alternative set of indicators are more appropriate. O'Leary (2017) details a range of associated indicators appropriate to different modes of research and these are used to

evaluate the credibility of this study. The evaluation of this research, therefore, is carried out here using a set of paired criteria.

Objectivity/Neutrality

Objectivity and neutrality relate to the acknowledgment and management of subjectivities. Traditional positivist researchers aim for objectivity. However, as an 'insider' researcher I recognise that I am a subjective entity and must manage my own personal biases and aim towards 'neutrality'. My own interests and perceptions of how SLTs develop competence may have influenced the research design and interpretation. I have attempted to achieve neutrality by addressing my positionality within the study and to be as transparent as possible with the research participants, with the analysis and presentation of results.

As well as articulating any possible bias, I have chosen methods which seek to hear a variety of voices, rather than a single case study, in recognition of the multiple realities experienced by the participants. My decision to include both experienced SLTs and newly qualified SLTs in my study is an attempt to guard against bias and to seek out evidence to the contrary.

Bias may have been introduced unintentionally in the selection of participants. The experts expressed a high level of enthusiasm and personal interest in the topic and this may be considered a reason why they had volunteered to be interviewed. It was not possible to target the sample selected for the online questionnaire and, as the topic may have appealed more to interested parties, for example, those with strong views about the issue, an element of bias may have been introduced. Efforts to guard against this were put in place by inviting newly qualified SLTs to take part wherever they were working and whoever they were working with. Whilst NQPs who had been working for up to five years were invited, the results indicated that the sample was skewed towards those who had been working for less than two years whose experiences and memories would be the most recent and, therefore, the most representative of current practice.

Validity/Authenticity

Validity relates to whether an item or instrument measures or describes what it is supposed to measure or describe (Bell 2014). In a knowable world with a single truth, findings can be assessed using criteria of validity. In a world of multiple realities 'authenticity' indicates that rigour and reflexive practice have assured that conclusions are justified, credible and trustworthy (O'Leary 2017).

Content or face validity is achieved when the method or measurement instrument captures the research issue in its essential aspects in an exhaustive way. This can be checked by experts or laypeople. Piloting of the interview schedule and the online questionnaire was carried out to evaluate whether the individual questions posed would answer the overarching and specific research sub-questions. The online questionnaire was also checked by a leading expert in the field who provided feedback and suggestions.

No items on the questionnaire, apart from the consent question, were mandatory. Very few questions, however, were skipped which may be an indication that participants believed they were valid questions. Several opportunities were provided for free text responses, giving respondents the chance to relay any thoughts that may not have been covered by the specific questions.

This research did not attempt to directly assess or test knowledge of autism unlike previous research studies (Price 2013; Atun-Einy and Ben-Sasson 2018; Mendonza and Tiwari 2018). The investigation into learning theories in Chapter 2 has shown that knowledge is, however, only one aspect of competence. It is recognised that the assessment of knowledge, unlike competence, is more easily accomplished through the medium of a survey. Perceived confidence was directly explored in the study but although related to the concept of 'competence', 'confidence' may only be viewed as a kind of 'proxy' indicator.

Convergent validity is achieved when different methods are used to measure the same construct. The strength of the mixed methods approach is that it allowed for triangulation which increases credibility. Similar findings were found across both

the interviews and the questionnaire. Views expressed by experts were able to be checked and compared with the views of NQPs.

The consideration with data collected via a survey methodology is that it is not observable and is, therefore, 'manufactured' by the respondent (Silverman 2013). Similarly, retrospective interviewing may also be considered problematic in that respondents 'will document their past in a way which fits it, highlighting certain features and downplaying others. In other words, the interviewer will be inviting a retrospective 'rewriting of history' with an unknown bearing on the causal problem with which this research is concerned' (p. 34). These issues were minimized by the voluntary nature of the participation and the fact that all questions in the interviews and the questionnaire were voluntary. The multi-perspective mixed methods design also helped to address these issues.

Another factor that must be taken into account in relation to the respondents is that they all volunteered. They were under no obligation to participate and may have done so because they were particularly interested or 'had an axe to grind'. However, this could be an argument for the likely truthfulness of the respondents.

Reliability/Dependability

'Reliability is the extent to which a test or procedure produces similar results under constant conditions on all occasions' (Bell 2014, p. 121). Devices for checking reliability such as test-retest, alternate forms or split-half method are not appropriate for an interview or a voluntary online questionnaire issued at one time point. As content analysis was employed for analysing the interviews, inter-coder reliability checks were used (see Chapter 6) to assess the extent to which statements were allocated to the same categories and hence the dependability of the category system and its application (Flick 2015). Checking for reliability was a feature of the stage of question wording and piloting of the online questionnaire.

O'Leary (2017) proposes that demonstrating integrity in knowledge production relies on illustrating that methods have been applied in a disciplined, rigorous and consistent way. The difficulty, however, with demonstrating reliability in the social

science arena is that people are complex and multi-faceted. Whilst this research could be said to be dependable, that is consistent, logical, systematic, well-documented and designed to account for research subjectivities, feelings, perceptions and memories may change over time. Flick (2015) suggests that the concept of reliability in qualitative research should be re-formulated, and the emphasis should be on how the data are produced. It is proposed that dependability has been achieved by documenting the process in a detailed and reflexive fashion reflecting on the decisions taken. I have attempted to document the process as fully as possible and include the data collection tools within the appendices. A strength of the research design is that the sequential nature of the research enabled the results of each phase to contribute to the next and this has been fully documented.

Generalisability/Transferability

O'Leary (2017) recommends the use of 'multiple data collection strategies' to gather data from different perspectives. The mixed methods multi-perspective approach to the study was considered necessary in order to conduct a rigorous study with internal coherence. The numbers of respondents, however, interviewed was necessarily limited due to time constraints and the scale of this professional doctoral research. It is not possible to generalise conclusions from a study where the total population is not known. Although only a small number of experts was interviewed, an effort was made, however, to select participants from across the UK to ensure a measure of representativeness and transferability. Similarly, whilst some broad conclusions can be drawn from the findings of the questionnaire, the results cannot be generalised as it is not possible to accurately estimate what proportion of newly qualified therapists responded from the entire population of potential participants. The sample of questionnaire respondents, however, was also drawn from across the UK. Due to the consistency of responses across phases of the research it is proposed that the findings provide transferable learning.

Reproducibility/Auditability

The research is to an extent reproducible in that the tools could be used again. Copies of the interview schedule and the online questionnaire are available within the appendices. A full explanation of the methods used at each phase of the research enables auditability. Research aimed at investigating the views of people, however, is subject to change over time and, even if the same people participated again, the results would not be exactly the same.

8.4 Synthesis of key findings and new knowledge

In this section I draw together the key findings from the theoretical underpinnings, the literature review and each of the three phases of the research. These findings include the new knowledge about this topic resulting from this research.

Previous research, mostly from the USA but also from Pakistan, the Republic of Ireland, India and Israel, highlighted deficits in SLTs' knowledge of autism and limited training and preparation to work with this client group. Research mainly focused on the knowledge that SLTs had about autism but the importance of hands-on experience with children with autism was also highlighted (Plumb and Plexico 2013; Atun-Einy and Ben Sasson 2018). No previous research had been carried out in the UK and, therefore, it was considered necessary to investigate whether there is a similar concern in the UK and how SLTs develop the competence needed to work with this group. This was of particular urgency considering the increasing prevalence of children with autism being educated in mainstream schools and the likelihood of them requiring support from often relatively inexperienced generalist SLTs. The findings of this research indicated a similar picture in the UK to that identified in previous research.

Despite this focus in the existing literature on knowledge acquisition, adult learning theories describe how competence is developed through an integration of knowledge, skills and experience over a period of time through supervision, reflective practice and social discourse. Experiential learning is considered an essential part of the development of competence (Eraut 2004; Yardley et al. 2012). Guided reflective practice aids the process of learning from experiences (Kolb and

Kolb 2009). Learning is challenged and shaped through social discourse, either with more experienced colleagues, peers or the wider professional community (Knowles et al. 2001; Yardley et al. 2012). The learning challenge should be carefully managed (Eraut 2004) within the Zone of Proximal Learning (Vygotsky 1978) so that it is built on existing competence in order to be meaningful and avoid being overwhelming.

A comparative study of the recommendations provided by regulating bodies indicated agreement that autism is an area that should be studied by SLTs in order that they can identify possible features of autism, assess functioning in a way that contributes to the diagnostic process, assess communication needs and provide appropriate interventions (CPLOL 2007; IALP 2009; RCSLT 2018, 2020c). There is no detail, however, in these recommendations about what specific information or knowledge must be included and there is an expectation that individual HEIs will develop appropriate curricula.

Another key finding from the investigation into the training recommendations from all four regulating bodies is that SLT training courses should be broad based in order to prepare SLTs for any area of professional scope; however, it could be argued that this breadth without depth does not provide NQPs with the foundational knowledge, skills and experience that they require to work with the typical caseloads that they encounter. My personal reflection is that I decided to train as a speech and language therapist because I wanted to work with children. Throughout my (now lengthy) career, I have always worked with children and have always identified as a 'paediatric SLT'. The history of the profession highlights that it is relatively new and is still evolving, with 'porous' boundaries between health and education, and an ever expanding scope of practice. Questions need to be asked about whether the position taken with regards to preparation of graduates to enter any area of the profession remains feasible or sustainable.

RCSLT also expresses the assumption that graduates will possess transferable skills to engage in CPD throughout their careers. 'It is not expected that speech and language therapy learners will graduate with a comprehensive knowledge of

all communication and swallowing disorders, but that they have the aptitude to carry out the necessary research or CPD to fill any gaps in knowledge' (RCSLT 2018, p. 9). This premise implies that filling in gaps in knowledge will suffice in developing competence and does not address the issue of linking the knowledge to experiences. The RCSLT website includes a recently updated section entitled 'CPD for NQPs' (RCSLT 2020d). Newly qualified practitioners are required to work towards and complete a set of goals. These goals are intended to support learning and development in the first year of practice. Goals are agreed with and 'signed off' by a supervisor and are used as evidence of readiness to transfer to full RCSLT membership. The framework of twenty-four goals is mapped against the RCSLT Core Capabilities under the headings of communication, partnerships, leadership/lifelong learning, research/evidence-based practice and professional autonomy/accountability. One of the goals in the leadership and lifelong learning section is 'identifies development needs and engages in continuous self-directed learning to promote professional development and quality of practice'. Whilst this is an important long-term goal, in line with evidence from learning theories, it could be argued that learning for NQPs, rather than being self-directed would be more beneficial if it is supervised, structured and directly related to competences required for the initial caseloads with which they are expected to engage.

In considering the national guidelines which are provided, this research found that both experts and NQPs expressed the opinion that pre-registration training does not adequately prepare NQPs to be able to carry out the expected roles. The perceptions of NQPs and experts about the pre-registration training received were similar across the two groups although the NQPs remembered receiving more direct teaching about autism in their pre-registration training than the experts had recalled, although it is not clear whether this may be a reflection of memory or an actual difference in the amount of training received. NQPs reported immediate expectations to work with children with autism and often these children represented a high proportion of their caseloads. NQPs felt unprepared and lacking in confidence and often did not receive any additional ASD training before working with these children.

The skills that the curriculum guidance identified as being essential for working with children with autism include being able to identify difficulties, contribute to differential diagnosis, make an assessment of needs, provide intervention programmes and training others to support children. Experts and NQPs report that pre-registration training adequately covers the knowledge of the features of autism but does not provide enough training in assessment or intervention approaches. Training or coaching others in how to support individuals with autism, highlighted by RCSLT as an essential role of SLTs (RCSLT 2020c), is a skill that needs to be developed over time and requires an in-depth knowledge of a variety of intervention approaches appropriate for individuals across the broad spectrum of presentation within autism and an ability to convey these to others.

Experts assume that the NQPs that join their services have limited knowledge, skills and experience and seek to plug the gaps with training as soon as possible, often developing and delivering their own programmes. This well intentioned but *ad hoc* approach is likely to be inconsistent across the country. Self-directed learning was identified by experts and NQPs as an important method of developing competence, including access to books and journals. This method may be important in providing essential knowledge but is less useful for developing skills. Carrington et al. (2016) investigated the differences between autism researchers and autism practitioners in their methods of acquiring knowledge. They found that the top three ways that practitioners kept up to date were conferences and CPD, information from colleagues and academic journals, unlike the researchers who emphasised access to academic journals. Whilst acquiring knowledge is essential, without the acquisition of associated skills applied in meaningful experiences competence will not develop.

Whilst research has previously been carried out on this general topic, this is the only research that has studied how competence is developed and its links to perceived confidence and preparedness of SLTs to work with children with autism in the UK. The previous assertions that training is limited and more training is, therefore, needed have now been shown to be accurate; recommendations about

what that training should consist of and ways to achieve it and proposed below in section 8.6.

Whilst adult learning theories describe the necessary components for the development of competence, this research has shown that NQPs are unlikely to be able to fulfill the roles required on graduating because they have not yet developed the competence to do so due to gaps in knowledge, skills and experience at the point of graduation. A significant amount of further training, incorporating knowledge, skills acquisition and supported experience is required. The reported prevalence of children with autism in initial caseloads is problematic but presents an opportunity for valuable experiential learning to take place.

8.5 Implications

8.5.1 Implications for newly qualified SLTs

The question posed for this study is 'how do SLTs develop competence to work with children with autism?' The results of the study appear to indicate a tension between the expectations made of NQPs and the level of competence that they have on qualifying. The results indicate that competence is developed over a lengthy period of time after starting work with additional training, support of more experienced colleagues, self-directed study and experience of working with children with autism but that they are not competent (or confident) to do so when first qualified. Evidence shows, however, that they are expected to work with children with autism immediately after qualifying and the implication is, therefore, that the preparation that they have during training is not adequate for the role that they are required to perform on qualifying. Feelings of inadequacy related to lack of competence and confidence are likely to cause anxiety to newly qualified SLTs which may lead to burn-out, stress-related illnesses and individuals leaving the profession. What is needed, therefore, is structured and timely support to learn from these early experiences in the workplace incorporating reflection, case discussion and additional knowledge about available assessments and intervention strategies. The first 12 to 18 months following commencement of an initial post should be viewed as an extension of pre-registration training and as an

essential time to develop competence to work with the caseload with which they are presented. No questionnaire respondent mentioned the NQP framework that they are required to complete during their mandatory probationary period.

8.5.2 Implications for service users

The implication of poorly prepared SLTs is the delivery of inadequate, inappropriate or ineffective services for children with autism. With readily accessible online information, parents who have a child with a disability can often become experts in their child's condition and may challenge the clinical decisions of newly qualified staff leading to strained relationships, antagonism and a lack of trust.

8.5.3 Implications for employers

Employers have a duty to ensure that NQPs receive the required supervision and training required for the post that they are appointed to. The experts interviewed in Phase 2 reported that NQPs required further training, with one specialist reporting that a structured programme of training and experience was provided 'in-house'. This research has shown that there is an inconsistent approach to the provision of additional training for NQPs in autism which seems to rely on enthusiastic specialists to develop and offer training programmes. The size and type of caseloads that are allocated to NQPs should be carefully managed until essential competence has been developed. This will have implications for service delivery.

8.5.4 Implications for the profession

A repeated picture of services being provided by inadequately trained SLTs is likely to have a detrimental effect on how the profession is viewed by the general public. Complaints and educational tribunals are an indication of a profession at odds with its service users. The implication, therefore, for the profession is that consideration should be given to changes that need to be made to ensure that SLTs are either competent to perform the duties that are integral to their role on registration or are provided with the opportunities needed to develop the competence that is expected of them by the public in a timely manner.

8.6 Recommendations

Possible solutions to the issues raised are described below, some more radical and far-reaching than others but it is hoped that these recommendations will spark debate. Ferguson (2006) proposed that speech and language therapists could be described as a community of practice within which there is substantial sharing of ideologies and practices. This community is in a constant state of flux as these ideologies and practices are discussed, debated, abandoned, reshaped, and developed in a process of negotiation answering the question 'what is speech and language therapy?'

8.6.1 Rebalancing course content

The detail related to course content to be included on pre-registration courses is determined by each HEI. Whilst they must have regard for RCSLT Curriculum Guidance and courses must be accredited by RCSLT, this still leaves scope for a wide range of variation. Further detailed advice about the essential content to include in courses should be provided related to the unique role of the SLT. Essential content should include: the assessment of social communication difficulties, how to provide information for the multi-disciplinary diagnostic assessment of autism, carrying out an assessment of needs, working with parents and education staff, approaches to intervention including visual communication strategies, and strategies to support social and emotional understanding. College based time should focus on essential clinical skills rather than knowledge based content such as the theoretical basis of autism which can be gained from self-directed learning. The time required to include this essential content can be created by eliminating or reducing content related to areas that would ordinarily be considered specialist areas not normally featuring in the caseloads of NQPs.

8.6.2 Developing a competency framework

This research has identified that the general approach to continuing professional development could be described as opportunistic and 'ad hoc'. Despite NQPs

describing their theoretical understanding of autism as satisfactory, the area that senior SLTs focused on when receiving new staff into their service was general autism awareness. The development of an agreed competency framework, possibly with an approved set of online modules and learning resources endorsed by RCSLT, including expected entry-level competencies through to specialist level competencies would improve the consistency of pre-registration training, guide CPD and ensure that employers have an understanding of the knowledge, skills and experience that their staff have. This would enable employers and employees to ensure that they are not expected to work with caseloads without the necessary competences in place.

Evidence from this research indicates that PD related to social communication difficulties should be provided as soon as the NQP enters the workforce and in a more structured way, capitalising on the rich vein of experiential learning opportunities that are immediately available. Selected competences could be added to individual staff member's NQP Goals Framework (RCSLT 2020d). Currently the only competency frameworks published by the Royal College of Speech and Language Therapists relate to dysphagia (2014a), tracheostomy (2014b) and, more recently 'Trans and Gender-Diverse Voice and Communication (2019). This area is described in the document as a 'high need, low incidence specialism' (p. 9) although the prevalence and incidence figures for this group are described as 'problematic' due to the varying criteria for documenting a person as 'trans' (p. 5). Despite the inclusion of a basic level of theoretical training in these areas in the pre-registration training programmes, SLTs would not be expected to work with these client groups without additional training.

The need for competency frameworks related to working with service users with autism has been recognised. The Autism Education Trust (Wittemeyer et al. 2012, updated 2016) has developed a framework specifically for staff working in educational environments, and NHS Education for Scotland (2014) has produced a framework which is described on its title page as being for 'all staff working with people with Autism Spectrum Disorders, their families and carers'. Whilst these documents may prove useful for SLTs, they do not specifically focus on the unique

role that SLTs have in relation to this population. Several experts interviewed for this study suggested that a competency framework or structured approach to CPD would be welcomed.

Competency frameworks in general are developed by consensus of practitioners from practice tested through evidence-based practice and research working at the boundaries of their scope of practice. These agreed frameworks are then used to develop curriculum guidelines which are then used to train the next generation of practitioners. Moore (2000) asserts that competencies should describe the unique contributions of the discipline to understanding problems in its domain. I propose that this cyclical process can be viewed as a theory of how a profession develops collective competence and the essential role that the development of competency frameworks plays in this process (see Figure 8.1).

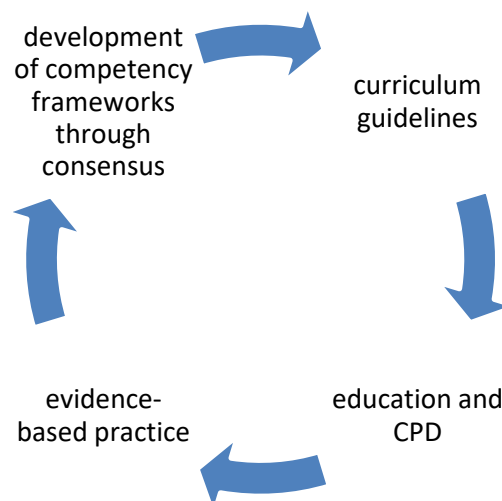


Fig. 8.1 A cycle of professional competence development

8.6.3 Changes to clinical placements

In view of the reported benefits of NQPs having had previous experience of working with children with ASD, it should be considered whether a placement working with this client group should be mandated as part of pre-registration training. Also, it has been reported in the data that working as part of the wider multi-disciplinary team was a valuable method of developing competence. Approved non-SLT placements, e.g. with specialist occupational therapists,

psychologists or specialist teachers, could add to the available options for clinical experience.

8.6.4 Designing new SLT qualifications

Comments from both experts and NQPs suggest that the aspiration to provide training that would prepare a graduate SLT to work in any area of the profession is no longer feasible. Expecting training courses to keep abreast of the continuing expansion of the scope of the profession may in fact be clinically unsafe and detrimental to the process of creating competent and confident NQPs. Whilst this may be considered a radical solution, and it would need discussion at RCSLT and HCPC levels, the proposal to create accredited Paediatric SLT training courses must now be considered. This would allow students to focus on the essential knowledge and skills required to work with children effectively from the time of graduation, provide time for more relevant clinical placements and result in more competent and confident therapists.

8.6.5 An apprenticeship model

Finally, a further radical solution, which could completely transform the training model for SLTs, is to develop an apprenticeship 'day-release' model, whereby SLT students are attached to a local SLT service and attend HEIs for lectures and tutorials rather than the current model of university attendance and a scatter-gun approach to gaining clinical experiences at various places. Local SLT services would inevitably feel more invested in developing the competences of 'their students' with a view to their future workforce and students would develop a useful understanding of the needs of the service.

8.7 Possible areas for future research

In this section I outline possible areas for future research with a brief explanation of why the research is needed and a suggestion for how this research may be carried out (see Table 8.1).

Table 8.1 Possible areas for future research

Research recommendation	Why is this needed?	Possible research design
What is taught in SLT training programmes to support the development of competence to work with children with autism in relation to the expected role they will have on qualifying?	The RCSLT provide guidance to HEIs about the content of the curricula for pre-registration courses for SLTs. The interpretation of this guidance is up to the individual HEIs. There is likely to be a significant amount of variation in the actual content of courses. An investigation into how these guidelines are being interpreted may contribute to the understanding of why so many NQPs feel unprepared on qualifying to work with children with autism.	An audit of the content of SLT training courses in the UK and a comparison with the RCSLT guidance.
How much direct exposure or experience of working with children with autism do SLTs need in order to feel confident in working with this client group?	It is known that direct exposure or experience of working with children with autism either prior to commencing a training course or during placements is important. It would be helpful to know how much is enough in order that this can be planned for within the course design.	A survey of how much contact NQPs have had with children with autism compared to reported confidence or assessed competence. Alternatively individual case studies or longitudinal cohort studies could be employed.
How is the competence of SLTs to work with children with autism measured? What are the minimum competences needed to effectively work with children with autism?	If it is understood that competence is derived from a combination of knowledge, skills and experience, an understanding of the elements of competence and a tool to measure those elements would be helpful in knowing when a therapist is ready to work unsupervised and what they need to do in order to demonstrate competence.	The development of a body of knowledge, an observable set of skills and a minimum level of experience could be agreed by use of consensus methods.
What proportion of the NQPs' caseloads is made up of children with social communication difficulties or autism?	Anecdotal accounts of the high level of children with autism on caseloads have been reported in this study. It would be helpful to verify this in order to test whether this is a general picture or only an issue in some areas.	With the use of computer-held caseload data, this information could be gathered in an anonymised way. A large scale survey of randomised cases could be analysed either as a snap-shot or as a long-term study.

Would the development and implementation of a competency framework for SLTs working with children with autism support CPD, effectiveness and confidence of SLTs?	The implementation of a competency framework has the potential to significantly improve the levels of competence in this area.	Development of a competency framework by consensus. Pilot study with users, comparison of outcome measures and reported confidence pre and post study.
Has the RCSLT Curriculum Guidance published in 2018 made a difference to the way that SLTs are taught about the management of social communication difficulties or autism?	The revised RCSLT Curriculum Guidance was published in 2018. The purpose of the review was to improve the training provided. It is important to know whether this outcome has been achieved.	A study of course contents pre and post publication of the new revised guidelines. Interviews with course developers and providers.
Would an online training module providing requisite knowledge support SLTs to develop competence and confidence to work with children with autism?	Many SLTs reported keeping up to date through the use of online resources and training modules. An approved online training module targeted at SLTs working with children with autism may significantly improve the necessary knowledge required to do so effectively.	An online module could be developed. A measure of knowledge could be gained pre and post the completion of the module to assess effectiveness of knowledge acquisition.

8.8 Concluding remarks

The profession of speech and language therapy has been through a process of evolution since training courses were established in the first half of the twentieth century. The specific area of 'working with children with ASD' has in itself evolved and there is now a recognition that the most effective role of the SLT is to facilitate others to support the communication development of this group of individuals. This re-shaping of the role of SLT presents a paradox. If students and newly qualified SLTs require experience of directly working with children with ASD in order to develop competence and confidence to work with this group, how can SLTs feel confident in training others if they have not had this experience themselves? As SLTs become competent in their understanding of learning itself, this will help them to understand how the learning and competence of children with autism and their families can develop too by providing meaningful supported experiences in

appropriate environments, i.e. home and school settings rather than 'clinical' spaces.

In 2020, with the outbreak of the COVID-19 pandemic, working practices were of necessity transformed, not least in the areas of health and education. SLTs adopted new ways of working. The use of telephone and video consultations is not new but has been promoted and developed like never before. The profession is still working out what can and cannot be done remotely. SLTs in the UK are looking to the burgeoning catalogue of research into the use of telehealth and adapting their practice (Boisvert et al. 2012; Johnsson et al. 2019; Parsons et al. 2019; Sutherland et al. 2019). Further research in this area will be welcomed.

The use of telephone and video consultations is already showing the positive benefit of reinforcing the message that the role of SLTs is to support and enable those working and living with individuals with ASD to be the agents of change. This, however, raises very pertinent questions about how student and newly qualified SLTs will access the necessary 'hands on' experience required to develop the competence they need to carry out this role successfully.

Preparations for the introduction of the ALNET Act in Wales (Welsh Government 2018), which will become law in 2021, are engendering existential discussions about the nature of SLT within the profession. Questions are being asked, and agreement will need to be reached, about whether SLT interventions constitute educational provision or not. This will not only relate to children and young people with autism but to the involvement of SLTs with individuals presenting with the whole range of communication difficulties. It is my fervent hope that conclusions will be reached by discussion within the profession and not dictated to us by legal decisions arising from the educational tribunal system.

References

Abbott, P. and Sapsford, R.J. 1998. *Research Methods for Nurses and the Caring Professions*. UK: McGraw-Hill Education.

Alspach, J.G. 1984. Designing a competency-based orientation for critical care nurses. *Heart and Lung* 13, pp. 655-662.

American Psychiatric Association. 2013. *Diagnostic and Statistical Manual of Mental Disorders (5th edition)*. (DSM-5). Arlington: American Psychiatric Pub.

American Speech-Language-Hearing Association (ASHA). 2006a. *Guidelines for speech-language pathologists in diagnosis, assessment, and treatment of autism spectrum disorders across the lifespan*. [Online] Available at: <http://faculty.washington.edu/jct6/ASHAGuideLinesAutismAssessmentScreening.pdf> [Accessed: 5/11/2017]

American Speech-Language and Hearing Association (ASHA). 2006b. *Knowledge and skills needed by speech-language pathologists for diagnosis, assessment, and treatment for autism spectrum disorders across the life span*. [Online] Available at: <https://www.asha.org/policy/KS2006-00075/> [Accessed: 5/11/2017]

American Speech-Language-Hearing Association (ASHA). 2006c. *Principles for speech-language pathologists in diagnosis, assessment, and treatment of autism spectrum disorders across the lifespan: Technical report*. [Online] Available at: <https://pdfs.semanticscholar.org/909f/c8b2df6d5a63d33e9741c745180b351daa5a.pdf> [Accessed: 5/11/2017]

American Speech-Language-Hearing Association (ASHA). 2006d. *Roles and responsibilities of speech-language pathologists in diagnosis, assessment, and treatment of autism spectrum disorders across the lifespan. Position statement*. [Online] Available at: http://www.commxroads.com/docs/publications/Position_Statement.pdf

[Accessed 5/11/2017]

American Speech-Language-Hearing Association (ASHA). 2017. *General Information about ASHA Certification*. [Online] Available at:

<http://www.asha.org/certification/AboutCertificationGenInfo/>

[Accessed: 4/10/2017]

American Speech-Language-Hearing Association (ASHA). 2017. *Scope of Practice in Speech-Language Pathology*. [Online] Available at:

<http://www.asha.org/policy/SP2016-00343/> [Accessed: 29/10/2017]

American Speech-Language Hearing Association (ASHA). 2020. *Autism*. [Online]

Available at: <https://www.asha.org/Practice-Portal/Clinical-Topics/Autism/>

[Accessed 9/1/2020]

Anderson, A.G., Knowles, Z. and Gilbourne, D. 2004. Reflective practice for sport psychologists: Concepts, models, practical implications and thoughts on dissemination. *The Sport Psychologist* 18(2), pp. 188-203.

Anderson, L. and Krathwohl, D. (eds). 2001. *A Taxonomy for Learning, Teaching and Assessing: A revision of Bloom's Taxonomy of educational objectives. Complete edition*. New York: Longman.

Anderson, L. and Sosniak, L. 1994. *Bloom's Taxonomy: A forty-year retrospective*. Ninety-third yearbook of the National Society for the Study of Education, Pt 2, Chicago, Ill : University of Chicago Press.

Archer, M.S. 2012. *The Reflexive Imperative in Late Modernity*. Cambridge: Cambridge University Press.

Asperger, H. 1944. Die "Autischen Psychopathen" im Kindesalter. *Archiv fur Psychiatric und Nervenkrankheiten* 117, pp. 76-136.

Asperger, H. 1991. 'Autistic Psychopathy in Childhood'. In: U. Frith (ed.) *Autism and Asperger syndrome*. pp. 37-92. Cambridge: Cambridge University Press.

Atkinson, P. Delamont, S. and Coffey, A. 2004. *Key Themes in Qualitative Research: Continuities and Changes*. Rowman Altamira.

Atun-Einy, O. and Ben-Sasson, A. 2018. Pediatric allied healthcare professionals' knowledge and self-efficacy regarding ASD. *Research in Autism Spectrum Disorders* 47, pp. 1-13.

Ausubel, D. 1968. *Educational Psychology: A cognitive view*. New York: Holt, Rinehart & Winston.

Autism Education Trust. 2016. *Autism Competency Framework*. London: AET.

Baird, G., Simonoff, E., Pickles, A., Chandler, S., Loucas, T., Meldrum, D. and Charman, T. 2006. Prevalence of disorders of the autism spectrum in a population cohort of children in South Thames: the Special Needs and Autism Project (SNAP). *The Lancet* 368(9531), pp. 210-215.

Bandura, A. 1977. *Social Learning Theory*. New York: General Learning Press.

Baron-Cohen, S., Scott, F.J., Allison, C., Williams, J., Bolton, P., Matthews, F.E. and Brayne, C. 2009. Prevalence of autism-spectrum conditions: UK school-based population study. *The British Journal of Psychiatry* 194(6), pp. 500-509.

Barton, A.H. and Lazarsfeld, P.F. 1955. 'Some Functions of Qualitative Analysis in Social Research' in *Frankfurter Beitrage zur Soziologie*. Frankfurt: Europaische Verlagsanstalt. pp. 321-361.

Bell, J. 2014. *Doing Your Research Project: A guide for first-time researchers*. UK: McGraw-Hill Education.

Benner, P. 1984. *From Novice to Expert: Excellence and power in clinical nursing practice*. Menlo Park, Cal.: Addison-Wesley.

Billett, S. 2002. Towards a workplace pedagogy: Guidance, participation and engagement. *Adult Education Quarterly* 53, pp. 27-43.

Blaxter, L., Hughes, C. and Tight, M. 2006. *How to Research* (3rd edn.). Maidenhead: Open University Press.

Bloom, B. and Krathwohl, D. 1956. *Taxonomy of Educational Objectives: The classification of educational goals, by a committee of college and university examiners*. Handbook 1: Cognitive domain. New York: Longmans.

Boisvert, M., Hall, N., Andrianopoulos, M. and Chaclas, J. 2012. The multi-faceted implementation of telepractice to service individuals with autism. *International Journal of Telerehabilitation* 4(2), p. 11.

Bradshaw, J., Steiner, A.M., Gengoux, G. and Koegel, L.K. 2015. Feasibility and effectiveness of very early intervention for infants at-risk for autism spectrum disorder: A systematic review. *Journal of Autism and Developmental Disorders* 45(3), pp. 778-794.

Bruner, J. 1966. *Toward a Theory of Instruction*. Cambridge, MA: Belknap Press.

Burnett, D.L. 2014. Preparation of Speech-Language Pathology Graduate Students to Work with Children with Autism Spectrum Disorders. *The Open Education Journal* 7(1), pp. 1-6.

Cameron, H. and Muskett, T. 2014. Recognising Autism Spectrum Disorders in Primary Care: Perspectives of Speech and Language Therapists. *Child Care in Practice* 20(3), pp. 313-328.

Carrington, S.J., Uljarević, M., Roberts, A., White, L.J., Morgan, L., Wimpory, D., Ramsden, C. and Leekam, S.R. 2016. Knowledge acquisition and research evidence in autism: Researcher and practitioner perspectives and engagement. *Research in Developmental Disabilities* 51, pp. 126-134.

Cascella, P.W. and Colella, C.S. 2004. Knowledge of autism spectrum disorders among Connecticut school speech-language pathologists. *Focus on Autism and Other Developmental Disabilities* 19(4), pp. 245-252.

Castelli, P.A. 2011. An integrated model for practicing reflective learning. *Academy of Educational Leadership Journal* 15, p. 15.

Cheng, L.R.L., Fernandes, F.D.M., de Andrade, C.R., Befi-Lopes, D.M., Wertzner, H.F., Limongi, S.C., Iitaka, K., Otomo, K., Grech, H., Leahy, M.M. and McTiernan, K. 2010. Revised IALP Education Guidelines (September 1, 2009): IALP Guidelines for Initial Education in Speech-Language Pathology. *Folia Phoniatrica et Logopaedica* 62(5), pp. 210-216.

Chomsky, N. 1975. *Reflections on Language*. New York: Pantheon Books.

Coffey, A. 1999. *The ethnographic self: Fieldwork and the representation of identity*. London: Sage Publishing.

Coffield, F., Moseley, D., Hall, E. and Ecclestone, K. 2004. *Learning styles and pedagogy in post-16 learning: A systematic and critical review*. London: The Learning and Skills Research Centre.

Coleman, W. 1895. A lecture on stammering and other impediments of speech, and their treatment on physiological principles. *The Lancet* 8 (June), pp. 1419-1421.

Comité Permanent de Liaison des Orthophonistes-Logopèdes de l'UE (CPLOL). 2007. *Revision Minimum Standards for Education* [Online] Available at: http://www.cplol.eu/images/Documents/education/Revised_Min_Standards_2007_1a.pdf [Accessed: 18/10/2017]

Comité Permanent de Liaison des Orthophonistes-Logopèdes de l'UE (CPLOL). 2009. *Position Statement on Practice Education during Initial Speech and Language Therapy Education Programmes (2009)* [Online] Available at: http://www.cplol.eu/images/Documents/education/practice-educ_pos_stat.pdf [Accessed: 25/10/2017]

Comité Permanent de Liaison des Orthophonistes-Logopèdes de l'UE (CPLOL). 2013. *NetQues Project Report Speech and Language Therapy Education in Europe: United in Diversity*. CPLOL/NetQues.

Creswell, J.W. and Plano Clark, V. 2007. *Designing and Conducting Mixed Methods Research*. Thousand Oaks, CA: SAGE.

Cross, K. 1981. *Adults as Learners: Increasing participation and facilitating learning*. San Francisco, CA: Josset-Bass.

Daley, B.J. 1999. Novice to expert: An exploration of how professionals learn. *Adult Education Quarterly* 49(4), pp. 133-147.

Department for Education. 2017. *Statistics: Special Educational Needs*.

Dewey, J. 1933. *How we Think: A restatement of the relation of reflective thinking to the educative process*. Lexington, MA: D.C. Heath.

Dewey, J. 1938. *Experience and Education*. New York, NY: Collier Books.

Diehl, S.F. 2003. The SLP's role in collaborative assessment and intervention for children with ASD. *Topics in Language Disorders* 23(2), pp. 95-115.

Donaldson, A.L. 2015. Pre-Professional Training for Serving Children with ASD: An Apprenticeship Model of Supervision. *Teacher Education and Special Education* 38(1), pp. 58-70.

Dornan, T., Hadfield, J., Brown, M., Boshuizen, H. and Scherpbier A. 2005. How can medical students learn in a self-directed way in the clinical environment? Design-based research. *Medical Education* 39, pp. 356-364.

Dreyfus, H.L. and Dreyfus, S.E. 1986. *Mind over Machine: The power of human intuition and expertise in the era of the computer*. Oxford: Blackwell.

Duvivier, R.J., Van Dalen, J., Muijtjens, A.M., Moolaert, V.R.M.P., Van Der Vleuten, C.P.M. and Scherpbier, A.J.J.A. 2011. The role of deliberate practice in the acquisition of clinical skills. *BMC Medical Education* 11, p. 101.

Epstein, R.M. and Hundert, E.M. 2002. Defining and assessing professional competence. *Journal of the American Medical Association* 287(2), pp. 226-235.

Eraut, M. 1994. *Developing Professional Knowledge and Competence*. London: Falmer Press.

Ferguson, A. 2006. Competency-Based Occupational Standards: Influences on Australian Speech Pathology Education. *Folia Phoniatria et Logopaedia* 58, pp. 23-31.

Flick, U. 2015. *Introducing Research Methodology*. 2nd edn. London: Sage Publications Ltd.

Freedman, S.E. 2014. Knowledge of Autism Spectrum Disorder among College Students in Health Care Disciplines. *Perspectives on Issues in Higher Education* 17(1), pp. 17-26.

Gagne, R.M., Briggs, L.J. and Wagner, W.W. 1992. *Principles of Instructional Design*. Orlando, FL: Harcourt Brace.

Gascoigne, M. 2006. Supporting children with speech, language and communication needs within integrated children's services. *RCSLT Position Paper*. London, UK: Royal College of Speech and Language Therapists.

Geer, B. 1964. First days in the field. *Sociologists at Work*, pp. 322-344.

Gibbs, G. 1988. *Learning by doing: A guide to teaching and learning methods*. Oxford, UK: Oxford Brookes University, Further Education Unit.

Giddings, L. S. and Grant, B. M. 2007. A Trojan Horse for positivism? A critique of mixed methods research. *Advances in Nursing Science* 30(1), pp. 52-60.

Gonczi, A., Hager, P. and Athanasou, J. 1993. *The development of competence based assessment strategies for the professions*. NOOSR Research Paper 8. Canberra: Australian Government Publishing Service.

Gonczi, A., Hager, P. and Oliver, L. 1990. *Establishing competency based standards in the professions*. NOOSR Research Paper 1. Canberra: Australian Government Publishing Service.

Gray, P.S., Williamson, J.B., Karp, D.A. and Dalphin, J.R. 2007. *The Research Imagination: An introduction to qualitative and quantitative methods*. Cambridge: Cambridge University Press.

Green, J. and Thorogood, N. 2018. *Qualitative Methods for Health Research*. London: Sage Publishing.

Hager, P. and Gillis, S. 1995. Assessment at higher levels. In: Hall W.C. (ed). *Key Aspects of Competency-Based Assessment*. Adelaide, NCVET, pp. 59–71.

Hammersley, M. and Atkinson, P. 2007. *Ethnography: Principles in Practice*. London: Tavistock.

Harden, R.M., Crosby, J.R. and Davis, M.H. 1999. AMEE Guide 14: Outcome based education: part 1 – An introduction to outcome based education. *Medical Teacher* 18(1), pp. 15-18.

Health and Care Professions Council (HCPC). 2020. *Protected Titles*. [Online] Available at: <https://www.hcpc-uk.org/about-us/who-we-regulate/the-professions/> [Accessed: 15/5/2020]

Heidgerken, A.D., Geffken, G., Modi, A. and Frakey, L. 2005. A survey of autism knowledge in a health care setting. *Journal of Autism and Developmental Disorders* 35(3), pp. 323-330.

Hoban, J.D., Lawson, S.R., Mazmanian, P.E., Best, A.M. and Seibel, H.R. 2005. The self directed learning readiness scale: A factor analysis study. *Medical Education* 39, pp. 370-379.

Hunt, J. 1857. *A Treatise on the Cure of Stammering (3rd ed)*. London: Longman, Brown, Green, Longmans & Roberts.

Iemmi, V., Knap, M. and Ragan, I. 2017. The autism dividend: reaping the rewards of better investment. *UK: National Autism Project*. London: London School of Economics and Political Science.

Imran, N., Chaudry, M.R., Azeem, M.W., Bhatti, M.R., Choudhary, Z.I. and Cheema, M.A. 2011. A survey of Autism knowledge and attitudes among the healthcare professionals in Lahore, Pakistan. *BMC Pediatrics* 11(1), p. 107.

International Association of Logopedics and Phoniatrics (IALP). 2009. Revised IALP Guidelines for Initial Education of SLP. [Online] Available at:

<https://ialpasoc.info/wp-content/uploads/2017/10/Revised-IALP-Guidelines-for-Initial-Education-of-SLT.pdf> [Accessed: 16/10/2017]

International Association of Logopedics and Phoniatics (IALP). 2017. *History of the IALP*. [Online] Available at: http://www.ialpasoc.info/History#overlay-context=Vision_Mission [Accessed: 16/10/2017]

International Association of Logopedics and Phoniatics (IALP). 2020. *Home page*. [Online] Available at: <https://ialpasoc.info> [Accessed 9/1/2020]

Jarvis, P. 1987. *Adult Learning in the Social Context*. London: Croom Helm.

Johns. C. 1994. Guided reflection. In: A. Palmer, S. Burns and C. Bulman (eds.), *Reflective Practice in Nursing*, pp. 110-130. Oxford, UK: Blackwell Science.

Johnson, R.B. and Onwuegbuzie, A.J. 2004. Mixed methods research: A research paradigm whose time has come. *Educational Research* 33(7), pp. 14-26.

Johnsson, G., Kerslake, R. and Crook, S. 2019. Delivering allied health services to regional and remote participants on the autism spectrum via video-conferencing technology: lessons learned. *Rural and Remote Health* 19(3), pp. 5358-5358.

Jordan, R. 1995. Autism: The Case for Early Specialist Intervention. *Early Years* 16(1), pp. 46-50.

Kanner, L. 1943. Autistic disturbances of affective contact. *Nervous Child* 2, pp. 217-250.

Knowles, M. S. 1980. *The Modern Practice of Adult Education: From pedagogy to andragogy*. Chicago: Follett.

Knowles, Z., Gilbourne, D, Borrie, A. and Nevill, A. 2001. Developing the reflective sports coach: A study exploring the processes of reflection within a higher education coaching programme. *Reflective Practice* 2, pp. 185-207.

Kolb, A. and Kolb, D. 2006. Learning Styles and Learning Spaces: A Review of the Multidisciplinary Application of Experiential Learning Theory in Higher Education. In: R. Sims and S. Sims. eds. *Learning Styles and Learning*, pp. 45-91.

Kolb, A.Y. and Kolb, D.A. 2009. Experiential learning theory: A dynamic, holistic approach to management learning, education and development. *The SAGE handbook of management learning, education and development*, pp. 42-68.

Lanter, E., Millar, D. and Rossi, P. 2010. RiteCare Family Autism Camp at Radford University: An Innovative Clinical Education Model for Speech-Language Pathology Students. *American Speech-Language-Hearing Association (ASHA)* pp. 59-63.

Lave, J. and Wenger, E. 1991. *Situated Learning, Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.

Laws, S. 2013. *Research for Development: A Practical Guide* (2nd edn). London: Sage Publishing.

Leigh, J. 2014. A tale of the unexpected: managing an insider dilemma by adopting the role of outsider in another setting. *Qualitative Research* 14(4), pp. 428-441.

MacMahon, M. 1983. John Wyllie and the development of speech therapy in Scotland. *Proceedings XIX Congress of the International Association of Logopaedics and Phoniatrics Edinburgh, August 1983* London: College of Speech Therapists.

Mandy, W., 2018. The Research Domain Criteria: A new dawn for neurodiversity research? *Autism* 22(6), pp. 642-644.

Manley, K. and Garbett, R. 2000. Paying Peter and Paul: Reconciling concepts of expertise with competency for a clinical career structure. *Journal of Clinical Nursing*, pp. 347-359.

Mannay, D. 2010. Making the familiar strange: can visual research methods render the familiar setting more perceptible? *Qualitative Research* 10(1), pp. 91-111.

Mansfield, B. and Mitchell, L. 1996. *Towards a Competent Workforce*. Aldershot, Hants: Gower.

Marsick, V. and Watkins, K. 1990. *Informal and Incidental Learning in the Workplace*. London: Routledge.

Mathews, L.A. 2011. *Knowledge and competency of speech-language pathologists when serving children with autism spectrum disorders*. University of South Alabama.

McConachie, H. and Diggle, T. 2007. Parent implemented early intervention for young children with autism spectrum disorder: A systematic review. *Journal of Evaluation in Clinical Practice* 13(1), pp. 120-129.

McGovern, M.A. 1994. Speech and language therapy education in Edinburgh 1764-1993. *History of Education Society Bulletin* 54 (Autumn), pp. 34-43.

McMullan, M., Endacott, R., Gray, M.A., Jasper, M., Miller, C., Scholes, J. and Webb, C. 2003. Portfolios and assessment of competence. *Journal of Advanced Nursing* 41, pp. 283-294.

Mendonsa, L.E. and Tiwari, S. 2018. A survey of knowledge and beliefs regarding autism in speech-language pathologists in India. *Folia Phoniatrica et Logopaedica* 70(3-4), pp. 191-202.

Mezirow, J. 1978. Perspective transformation. *Adult Education Quarterly* 28, p. 100. London: Sage Publishing.

Mezirow, J.D. 2000. *Learning as transformation: Critical perspectives on a theory in progress*. 1st ed. San Francisco, CA: Jossey-Bass.

Miles, M.B. and Huberman, A.M. 2014. *Qualitative Data Analysis* (3rd edn) Thousand Oaks: SAGE.

Miller, G.E. 1990. The assessment of clinical skills and competence/performance. *Academic Medicine* 65, pp. 563-567.

Molloy, H. and Vasil, L. 2002. The Social Construction of Asperger Syndrome: the pathologising of difference?. *Disability & Society*, 17(6), pp. 659-669.

Moon, J.A. 2004. *A Handbook of Reflective and Experiential Learning: Theory and practice*. Psychology Press.

Moore, R. 2000. The (re)organization of knowledge and assessment for a learning society: the constraints on interdisciplinarity. *Studies in Continuing Education* 22, pp. 183-200.

Morriss, L. 2015. Dirty secrets and being 'strange': using ethnomethodology to move beyond familiarity. *Qualitative Research*, p.1468794115598194.

National Autistic Society. 2020a. *What is Autism?* [Online] Available at: <https://www.autism.org.uk/about/what-is.aspx> [Accessed: 14/5/2020]

National Autistic Society. 2020b. Autism profiles and diagnostic criteria [Online] Available at: <https://www.autism.org.uk/about/diagnosis/criteria-changes.aspx> [Accessed: 14/5/2020]

NHS Education for Scotland. 2014. *Optimising Outcomes: The NHS Education for Scotland Autism Training Framework*. Edinburgh: NHS Education for Scotland.

National Institute for Health and Care Excellence. 2011. *Autism spectrum disorder in under 19s: recognition, referral and diagnosis (CG 128)*. [Online] Available at: <https://www.nice.org.uk/guidance/cg128> [Accessed: 5/11/2017]

Newble, D.I. and Clarke, R.M. 1986. The approaches to learning of students in a traditional and in an innovative problem-based medical school. *Medical Education* 20, pp. 267-273.

Newble, D.I. and Entwistle, N.J. 1986. Learning styles and approaches: Implications for medical education. *Medical Education* 20, pp. 162-175.

Norman, G.R. 1999. The adult learner: A mythical species. *Academic Medicine* 74, pp. 886-889.

Oancea, A. 2014. Ethics in Social Science Research. In: K. Punch *Introduction to Social Research: Quantitative and Qualitative Approaches* (3rd edn). London: Sage Publishing.

O'Leary, Z. 2013. *The Essential Guide to doing your Research Project*. London: Sage Publishing.

O'Leary, Z. 2017. *The Essential Guide to doing your Research Project* (3rd edn). London: Sage Publishing.

Parsons, D., Cordier, R., Lee, H., Falkmer, T. and Vaz, S. 2019. A randomised controlled trial of an information communication technology delivered intervention

for children with autism spectrum disorder living in regional Australia. *Journal of Autism and Developmental Disorders* 49(2), pp. 569-581.

Piaget, J. 1952. *The Origins of Intelligence in Children*. New York: International University Press.

Plumb, A.M. and Plexico, L.W. 2013. Autism spectrum disorders: Experience, training, and confidence levels of school-based speech-language pathologists. *Language, Speech, and Hearing Services in Schools*.

Polit, D.F. and Hungler, B.P. 1999. *Nursing Research: Principles and Methods* (6th edn). Philadelphia, PA: Lippincott, Williams and Wilkins.

Prelock, P. 2001. Understanding autism spectrum disorders: The role of speech-language pathologists and audiologists in service delivery. *The ASHA Leader* 6(17), pp. 4-7.

Price, J.R. 2013. Preservice knowledge and training in autism spectrum disorders. *Division 10 Newsletter* 16(2), pp. 71-80.

Punch, K. 2014. *Introduction to Social Research: Quantitative and Qualitative Approaches* (3rd edn). London: Sage Publishing.

Ray, J.M. 2010. *Knowledge and confidence of speech-language pathologists regarding autism*. University of North Texas.

Rethans, J.J., Norcini, J.J., Baron-Maldonado, M., Blackmore, D., Jolly, B.C., LaDuca, T., Lew, S., Page, G.G. and Southgate, L.H. 2002. The relationship between competence and performance: implications for assessing practice performance. *Medical Education* 36(10), pp. 901-909.

Robson, C. 1993. *Real World Research: A Resource for Social Scientists and Practitioner-Researchers*. Oxford: Blackwell.

Rockey, D. 1980. *Speech Disorder in Nineteenth Century Britain: A History of Stuttering*. London: Croom Helm.

Rogers, S. J. 1996. Brief report: Early intervention in autism. *Journal of Autism and Developmental Disorders* 26(2), pp. 143-146.

Rowland, S. 2000. *The Enquiring University Teacher*. Milton Keynes: SRHE/Open University Press.

Royal College of Speech and Language Therapists. 2005. *Clinical Guidelines*. Bicester, Oxon: Speechmark Publishing Ltd.

Royal College of Speech and Language Therapists. 2010. *Guidelines for Pre-Registration Speech and Language Therapy Courses in the UK*. [Online] Available at: https://www.rcslt.org/about/Courses_and_training/curriculum_guidelines [Accessed: 18/10/2017]

Royal College of Speech and Language Therapists. 2014a. *Dysphagia Training and Competency Framework: Recommendations for knowledge, skills and competency development across the speech and language therapy profession*. London: RCSLT.

Royal College of Speech and Language Therapists. 2014b. *Tracheostomy Competency Framework*. London: RCSLT.

Royal College of Speech and Language Therapists. 2017. *Curriculum guidelines and Newly Qualified Practitioner (NQP) Framework update*. [Online] Available at: https://www.rcslt.org/members/pre_registration_education/curriculum_guidelines_nqp_Framework [Accessed: 25/10/2017]

Royal College of Speech and Language Therapists. 2018. *RCSLT Curriculum Guidance for the pre-registration education of speech and language therapists*.

[Online] Available at:

www.rcslt.org/-/media/Project/RCSLT/curriculum-guidance-2018.pdf

[Accessed 5/11/2020] 33333

Royal College of Speech and Language Therapists. 2019. *Trans and Gender-Diverse Voice and Communication Therapy Competency Framework*. London: RCSLT.

Royal College of Speech and Language Therapists. 2020a. *A Brief History of Speech and Language Therapy in the UK*. [Online] Available at:

<https://www.rcslt.org/-/media/Project/RCSLT/a-brief-history-of-speech-and-language-therapy-in-the-uk.pdf> [Accessed 11/1/2020]

Royal College of Speech and Language Therapists. 2020b. *What is speech and language therapy?* [Online] Available at:

<https://www.rcslt.org/speech-and-language-therapy/> [Accessed: 14/5/2020]

Royal College of Speech and Language Therapists. 2020c. *Role of speech and language therapy in autism*. [Online] Available at:

<https://www.rcslt.org/speech-and-language-therapy/clinical-information/autism#section-2> [Accessed: 14/5/2020]

Royal College of Speech and Language Therapists. 2020d. *Newly-qualified practitioners*. [Online] Available at:

<https://www.rcslt.org/members/your-career/newly-qualified-practitioners#section-1>
[Accessed: 5/11/2020]

Rutter, M. 1978. Diagnosis and definition of childhood autism. *Journal of Autism and Child Schizophrenia* 8, pp. 139-161.

Sapsford, R.J. and Abbott, P. 1996. Ethics, politics and research, in R. Sapsford and V. Jupp (eds.) *Data Collection and Analysis*. London: Sage Publishing.

Scanlon, J. and Chernomas, W. 1997. Developing the reflective teacher. *Journal of Advanced Nursing* 25, pp. 1138-1143.

Schlesinger, E. 1996. Why learning is not a cycle. *Industrial and Commercial Training* 28, pp. 11-17.

Schmidt, H. G. and Boshuizen, H.P.A. 1993. On acquiring expertise in medicine. *Educational Psychology Review* 5(3), pp. 205-221.

Schön, D. 1983. *The Reflective Practitioner: How professionals think in action*. London: Temple Smith.

Schön, D. 1987. *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions*. San Francisco: Jossey-Bass Publishers.

Schwartz, H. and Drager, K.D. 2008. Training and knowledge in autism among speech-language pathologists: A survey. *Language, Speech, and Hearing Services in Schools*.

Silberman, S. 2017. *Neurotribes: The legacy of autism and how to think smarter about people who think differently*. Atlantic Books.

Skinner, B. 1954. The science of learning and the art of teaching. *Harvard Educational Review* 24, pp. 86–97.

Song, M. and Parker, D. 1995. Commonality, difference and the dynamics of disclosure in in-depth interviewing. *Sociology* 29(2), pp. 241-256.

Sonuga-Barke, E. and Thapar, A. 2021. The neurodiversity concept: is it helpful for clinicians and scientists? *The Lancet. Psychiatry*, pp.S2215-0366.

Sutherland, R., Trembath, D., Hodge, M.A., Rose, V. and Roberts, J. 2019. Telehealth and autism: Are telehealth language assessments reliable and feasible for children with autism? *International Journal of Language and Communication Disorders* 54(2), pp. 281-291.

Symonds, J.E. and Gorard, S. 2008. The death of mixed methods: research labels and their casualties. In *British Educational Research Association Annual Conference*.

Tashakkori, A. and Teddlie, C. (eds). 2003. *Handbook of Mixed Methods in Social and Behavioural Research*. Thousand Oaks, CA: SAGE.

Taylor, D. and Hamdy, H. 2013. Adult Learning Theories: Implications for Learning and Teaching in Medical Education (AMEE Guide no. 83). *Medical Teacher* 35(11), pp. e1561-1572.

Thomas, G. 2017. *How to Do Your Research Project: A Guide for Students* (3rd edn). London: Sage Publishing.

Thorndike, E. 1911. *Animal Intelligence*. New York: Macmillan.

Van Thal, J. 1945. A short history of speech therapy. I: Past History. *Speech*, IX(1), pp. 7-8.

Vygotsky, L. 1978. *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Wenger, E. 1998. *Communities of Practice: Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.

Welsh Government 2018. Additional Learning Needs and Education Tribunal (Wales) Act. [Online] Available at:

<https://gov.wales/additional-learning-needs-and-education-tribunal-wales-act>

[Accessed: 20/5/2021]

Whaley, C.H. 2002. *Special Education Teachers' and Speech Therapists' Knowledge of Autism Spectrum Disorder*. East Tennessee State University.

Wiederhold, A. 2015. Conducting fieldwork at and away from home: Shifting researcher positionality with mobile interviewing methods. *Qualitative Research* 15(5), pp. 600-615.

Wilson, N.K. 2016. *Psychological diagnosis, the 'Package Deal' and constructions of ASD* (Doctoral dissertation, City University London).

Wing, L. 1997. The Autistic Spectrum. *The Lancet* 350(9093), pp. 1761-1766.

Wing, L. and Gould, J. 1979. Severe impairments of social interaction and associated abnormalities in children: Epidemiology and classification. *Journal of Autism and Developmental Disorders* 9, pp. 11-29.

Wittemeyer, K., English, A., Jones, G., Lyn-Cook, L. and Milton, D. 2012. *The Autism Education Trust Professional Competency Framework*. AET.

World Health Organization. 1992. *The International Classification of Diseases (ICD-10) The classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines* (Vol. 1). Geneva: WHO.

Yardley, S., Teunissen, P.W. and Dornan, T. 2012. Experiential learning: AMEE guide No. 63. *Medical Teacher* 34(2), pp. e102-e115.

Appendices

Appendix 1 - Email invitation for recruits for Phase 1 interviews (Chap. 6)

Research into Speech and Language Therapy with Children with Autism

Dear Colleague,

**Achieving competency to work with children with ASD:
A UK project**

You will be aware that RCSLT is currently updating the national guidelines for training SLTs. I am writing to you as a fellow RCSLT adviser/Lead Specialist in autism because I am interested in finding out your views about how SLTs achieve competency in working with children with autism spectrum disorders.

I am seeking the views of speech and language therapists from different parts of the UK who have been working for more than five years and who are specialists in ASD, service leads for ASD and/or RCSLT advisers in ASD.

Can you spare an hour in January or February 2018 and would you be willing to participate? This is a UK-wide research project that is part of a professional doctorate with Cardiff University and it is hoped that the findings will contribute to training curriculum and practice guidelines nationally.

In the interview I would ask you to

- reflect on your own experience in acquiring competence
- provide your thoughts about training needs, experience, confidence and competence of junior colleagues

I am happy to talk by telephone, Skype or face-to-face depending on your preference, distance or circumstances. Please contact me if you would like more information.

Work tel XXXXXXXXXXXX

Mobile XXXXXXXXXXXX

Work email XXXXXXXXXXXX

Home email XXXXXXXXXXXX

Appendix 2 - Example of interview transcription with initial identified themes (Chap. 6)

<p>Well, it's a combination of things. Yes, <u>experience</u> because there's not only the learning that I've had personally but all the information I've gathered. I've worked a lot in <u>multi-disciplinary teams</u>. So it's all those skills that I've absorbed from other disciplines and how they deal with issues and that whole multi-disciplinary shared thinking and case planning and programme planning where you're not just looking at it from the speech and language therapist's point of view. Adopting maybe different ways of thinking and looking at a problem and really <u>bringing the parents in as a partner</u> in it. That often really helps. And then of course it is things like <u>the training and knowing how to structure things up, how to break things down, some of the simple things like how you lay the materials out, you know the kind of TEACCH training that you would have about how to make it visually obvious</u> to a child, those very practical activities.</p>	<p>Experience</p> <p>MDT work</p> <p>Working with parents</p> <p>Training in approaches</p>
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Appendix 3 - Example of section of coded data (Chap. 6)

<p>I: What kind of questions, what reasons do you think people would come to you for advice about?</p>	
<p>P: Sometimes they come to talk through whether they think they should refer somebody or not. Those are the simpler ones. Other times <u>they might come to me because they can't get a child to engage, they can't maybe keep the child in the room, the child is very distressed.</u></p>	3.3.4.
<p>I: For support with management of behaviour?</p>	
<p>P: Yes, you know, <u>how do I get this child to engage, how do I work with this child</u> and then <u>sometimes what I'm talking to them about is doing it a different way altogether</u> and it not being about coming into clinic</p>	3.3.4.
<p>sometimes it's about finding where the child is settled really <u>giving the therapist the freedom to think like that, to think differently about it.</u> And then</p>	3.3.5.
<p>other times it could be that they're a bit stuck in therapy and they're not sure how else to present information to a child or how they can move them on. <u>Sometimes a parent might really want to do something like ABA and the therapist might phone me and say that they're finding it very difficult to know how to work with this.</u></p>	3.3.5.
	3.3.6.

Appendix 4a - Example 1 of section of framework analysis (Chap. 6)

	P2	P3	P4	P5	P6	P7
3.1.			<p>I feel that they come into a role where they are given quite a large proportion of children with complex needs within their caseload and I think they're terrified to be honest. I think they will go in armed with a DLS or a pre-school CELF and then really, really panic about the child they see in the classroom who won't respond to their name let alone sit down and engage with whatever they plan so I think they come out really, really terrified and not ready at all for the caseload that they receive.</p>	<p>I think that they probably are maybe not as confident, or it might be a pressure on the service issue, to kind of offer advice on social interaction, objects of reference, developing attention through structured play. They will require more support to do that and sometimes it seems that they would see that job as a specialist job rather than actually it should be a core part of children's work</p> <p>Confidence in implementing interventions. They don't have the skill yet to implement them in an attuned way.</p>	<p>I find they feel very lacking in knowledge compared to other clinical areas</p> <p>certainly one of the clinical areas that they either ask for or that they want experience of or feel quite apprehensive about.</p> <p>We have a waiting... an allocation system whereby the children on the waiting list are just allocated to the next available person. So they are very comfortable to take off the next phonological disorder, the next early language development problem, but then as children come to the top of the waiting list who have ASD or query ASD beside them, they would themselves be thinking I'd need to do that with somebody else or I would rather somebody else pick that child up</p>	<p>You'll always have to do this. It is a confidence issue but I also think it's about ... people don't seem to know how, so how do you do it though?</p>

Appendix 4b - Example 2 of section of framework analysis (Chap. 6)

3.2	<p>What impresses me is how much they know when they come out now. In terms of they've got some ideas about the need to use visual structures, they've got some ideas around PECS. They definitely have some knowledge coming out. I think that has definitely improved and I think with the right support they can do really effective work with children with autism and I think my experience here is that they've been quite good at picking up on children showing signs and symptoms as well - it's a tough enough thing to do with some children.</p>	<p>What we usually assume is that they have very little and we want to induct them into the X way anyway because we have a comprehensive pathway and support package within X. So we always say to any therapist that starts with us 'we're going to assume you've got no knowledge' and then we will give you an understanding of what we're saying to our partners, what we're saying to the schools we work with, the doctors we work with, so everybody's on the same page with it really, so we begin from the beginning really.</p>	<p>She said that the information they had received in their lectures had been theoretical, she said she had no...no really clinical skills training on actually what to do with that child so that feels like an enormous gap and I think there's very few placements out there where students are encouraged to get hands on with children with complex needs</p>	<p>They were both third year, so they were final year speech therapy students. And I felt they had very limited knowledge of the interventions and very limited skill in interacting with children who are difficult to reach. I found they had very low confidence around interacting with these children</p>	<p>Well, we give them the option when they come out, but as yet haven't had a newly qualified member of staff not take us up on it. I don't know whether that's just to consolidate or to reassure them that they did know it</p> <p>I find they feel very lacking in knowledge compared to other clinical areas</p> <p>Certainly one of the clinical areas that they either ask for or that they want experience of or feel quite apprehensive about.</p>	<p>I usually say to them, tell me what you know about this condition or this population and they've got an idea it's about social communication but some of it's a little bit sketchy, probably is the word.</p> <p>I would say there's a lack of depth, and a lack of...what's the word? ... secure foundational knowledge of ...it's a neurodevelopmental disorder, it's a dyad...some of the basics...what sort of incidence would you expect to see... and some of the key characteristics, and that sort of thing ...my experience is that they don't necessarily know that when they start.</p>
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Appendix 5 - Email invitation to complete Phase 2 questionnaire (Chap. 7)

Dear colleague,

Are you a newly qualified speech and language therapist (up to five years post-qualification)? If the answer is 'yes', here's an opportunity to get your voice heard on how well you feel you were prepared to work with children with autism, even if you are not working with them now.

I am a speech and language therapist carrying out research as part of a professional doctorate with Cardiff University, to answer the question:

How do Speech & Language Therapists develop competence to work with children with autism spectrum disorders?

I am interested in finding out about your views and experiences relating to the education and training you received. All questions are *optional* and information gathered will be completely *anonymous and confidential*.

Please click on the link below to complete this survey which should take about 10 to 15 minutes:

<https://cardiff.onlinesurveys.ac.uk/autism-training-for-speech-language-therapists>

I apologise if you have also received this request from elsewhere. I am hoping to recruit respondents from all parts of the UK. Please forward this link to any colleagues you know who may wish to complete the survey or who may forward it further.

If you have any questions about the study, please email me – MullisJA@cardiff.ac.uk or Julie.mullis@wales.nhs.uk.

Thank you
Julie Mullis

Appendix 6 - Online questionnaire (Chap. 7)**Autism Training for Speech & Language Therapists****Page 1: About the study**

Thank you for your interest in this survey.

My name is Julie Mullis. I am a practising Speech and Language Therapist and I am undertaking a Professional Doctorate at Cardiff University.

As part of my research I am gathering the perspectives of newly or recently qualified speech and language therapists (SLTs) with up to five years post qualification experience. I am interested in learning about the training that SLTs receive to work with children with autism spectrum disorders (ASD). I am interested in the views of all newly or recently qualified SLTs, whether currently working with adults or children.

I will be asking questions about the pre- and post-qualification training you received, your clinical placements, current caseload and the continuing professional development (CPD) opportunities available to you. This should take around 10 to 15 minutes of your time.

- Your answers will be confidential and anonymous - no individual will be identifiable
- Participation in the survey is voluntary
- All responses are valid - there are no right or wrong answers

Please click on the consent box if you agree to this. If you have any questions about the survey please email me, Julie Mullis, at mullisja@cardiff.ac.uk. Thank you.

1. I agree to take part in the survey under the conditions described above
Required

- Yes
 No

Page 2: Pre-registration training

2. Thinking back to your pre-registration training, do you remember the taught component having any autism specific content?

- Yes, there was some autism specific content
 No, there wasn't any autism specific content
 I don't remember

3. Approximately how much time was allocated to the taught component of this

topic of study?

- There wasn't any autism specific content
- About an hour or less
- More than one hour but less than a day
- One whole day
- More than one day
- n/a - I don't remember

This part of the survey uses a table of questions,

4. Do you remember learning about:

- | | yes | no |
|---|-----------------------|-----------------------|
| - the communication characteristics of children with ASD? | <input type="radio"/> | <input type="radio"/> |
| - specific assessment strategies to use with children with ASD? | <input type="radio"/> | <input type="radio"/> |
| - specific intervention strategies to use with children with ASD? | <input type="radio"/> | <input type="radio"/> |

5. Which of the following were you made aware of? *Click on all that apply.*

- Using visual support strategies, e.g. cue cards, schedules
- Picture Exchange Communication System (PECS)
- Providing communication opportunities, e.g. choices
- Adult/Child interaction strategies, e.g. joint attention strategies
- None of the above

This part of the survey uses a table of questions,

6. How well do you feel the following areas (recommended in the RCSLT Curriculum Guidance) were addressed in relation to working with children with autism?

Please don't select more than 1 answer(s) per row.

Please select exactly 8 answer(s).

	Very well	Quite well	Quite poorly	Very poorly
Theoretical knowledge of autism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Approaches to assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Theoretical knowledge of assessment tools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Approaches to intervention	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative and augmentative communication (AAC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Multi-disciplinary working	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outcome measures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Evidence based practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Did you meet any children with autism on any clinical placements?

- Yes
 No

8. Did you work directly with any children with autism on any clinical placements?

- Yes
 No

9. At the end of your pre-registration training, how satisfied were you with the training you had received to work with children with autism?

- Very unsatisfied
 Quite unsatisfied
 Quite satisfied
 Very satisfied

10. At the end of your pre-registration training, how confident did you feel about working with children with autism?

- Very unconfident
 Quite unconfident
 Quite confident
 Very confident

11. Did you feel that there were any clinical areas that were given too much emphasis?

- No
 Yes

a. If you selected 'yes', please specify:

12. Do you have any other comments about the pre-registration training you received in relation to working with children with ASD?

Page 3: Experiences since starting work

13. After starting your first post as a qualified SLT, how soon did you work with children with autism?

- Within the first year

After one or two years

After working for three years or more

I have not worked with children since qualifying

I have worked with children but none with autism

14. Did your employer/SLT department provide you with any ASD training prior to working with children with autism?

Yes

No

n/a - I do not work with children with autism

a. Have you received any training in working with children with autism since working as a SLT?

Yes

No

n/a - I have not worked with children with autism since starting work as an SLT

b. What training was provided? *Click on all that apply.*

In-house training

External training course

n/a - my employer has not provided any autism training

15. Have you attended training courses in any of the following areas? *Click on all that apply.*

General autism awareness

Specific diagnostic assessment tools, e.g. CHAT, ADOS

Specific communication approaches, e.g. PECS, verbal behaviour, pivotal response training

Broad autism intervention approaches, e.g. ABA, TEACCH, SCERTS

Parent training programmes, e.g. EarlyBird, Hanen, PACT

n/a - I have not attended any autism courses

Other

16. Have you been trained to use any of the following diagnostic assessment tools? *Click on all that apply.*

M-CHAT

ADOS

ADI

- DISCO
- n/a - I have not been trained to use any diagnostic assessments
- Other

17. Which of the following specific communication approaches have you been trained to use (in-house or external accredited courses? *Click on all that apply.*

- Picture Exchange Communication System (PECS)
- Voice output communication aids (VOCAs)
- Verbal Behaviour Approach
- Other
- n/a - I have not been trained in any specific communication approaches for children with autism

a. If you selected Other, please specify:

18. Which of the following parent training programmes have you been trained to use? *Click on all that apply.*

- EarlyBird or EarlyBird Plus
- Hanen 'More than words'
- Adult/Child Interaction
- n/a - I have not been trained to use any parent training programmes
- Other

a. If you selected Other, please specify:

19. Since qualifying as a registered SLT, have you funded any autism training yourself?

- Yes
- No

20. Which of the following self-directed continuing professional development (CPD) activities have you engaged in with regard to children with autism? *Click on all that apply.*

- Reading books

- Reading journal articles
- Online learning
- E-learning modules or courses
- Webinars
- YouTube content
- Other
- n/a - I have not engaged in any self-directed learning in relation to working with children with autism

a. If you selected Other, please specify:

21. Have you ever sought advice from a colleague with more experience in working with children with ASD?

- Yes
- No
- n/a - I have never worked with children with ASD

22. If you have sought support or advice from a more experienced colleague, what was the purpose of this? *Please click on all that apply.*

- For help with assessment for diagnosis
- For help with assessment of needs
- For help with management
- Other

23. What do you feel would help you most to develop your competence to work with children with autism?

Page 4: Current caseload and job role

24. Do you currently work with children with autism?

- Yes
- No - I work with children but not those with autism
- No - I do not work with children

25. How often do you encounter children with autism in your current post?

- Very frequently (nearly every day)

- Frequently (at least once a week)
- Often (at least once a month)
- Rarely (a couple of times a year)
- Never - I work with children but not those with autism
- n/a - I don't work with children

Page 5: Confidence

This part of the survey uses a table of questions,

26. When you first qualified how confident did you feel to work with children with the following conditions?

Please don't select more than 1 answer(s) per row.

Please select exactly 5 answer(s).

	Very unconfident	Quite unconfident	Quite confident	Very confident
Children with language difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Children with speech difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Children with social communication difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Children with voice difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Children with dysfluency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

This part of the survey uses a table of questions,

27. How confident did you feel about the following?

Please don't select more than 1 answer(s) per row.

Please select exactly 5 answer(s).

	Very unconfident	Quite unconfident	Quite confident	Very confident
Recognising social communication difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assessing social communication difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Treating social communication difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Working with non-verbal children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training others to work with children with autism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Page 6: Demographic information

28. What year did you qualify as a Speech and Language Therapist?

- 2013
- 2014
- 2015
- 2016
- 2017
- 2018

29. At which university did you receive your pre-registration Speech & Language Therapy training?

- Birmingham City University
- Canterbury Christ Church University and University of Greenwich
- Cardiff Metropolitan University
- City University, London
- De Montfort University, Leicester
- Leeds Beckett University
- Manchester Metropolitan University
- Newcastle University
- Queen Margaret University, Edinburgh
- University College, London
- University of East Anglia
- University of Essex
- University of Manchester
- University of Reading
- University of Saint Mark & Saint John, Plymouth
- University of Sheffield
- University of Strathclyde, Glasgow
- University of Ulster
- Other

a. If you selected Other, please specify:

30. Did you attend as a mature student?

Yes

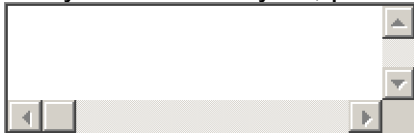
No

31. Did you have any experience of working with children with autism prior to attending your training course?

No

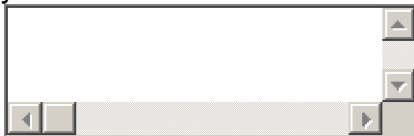
Yes

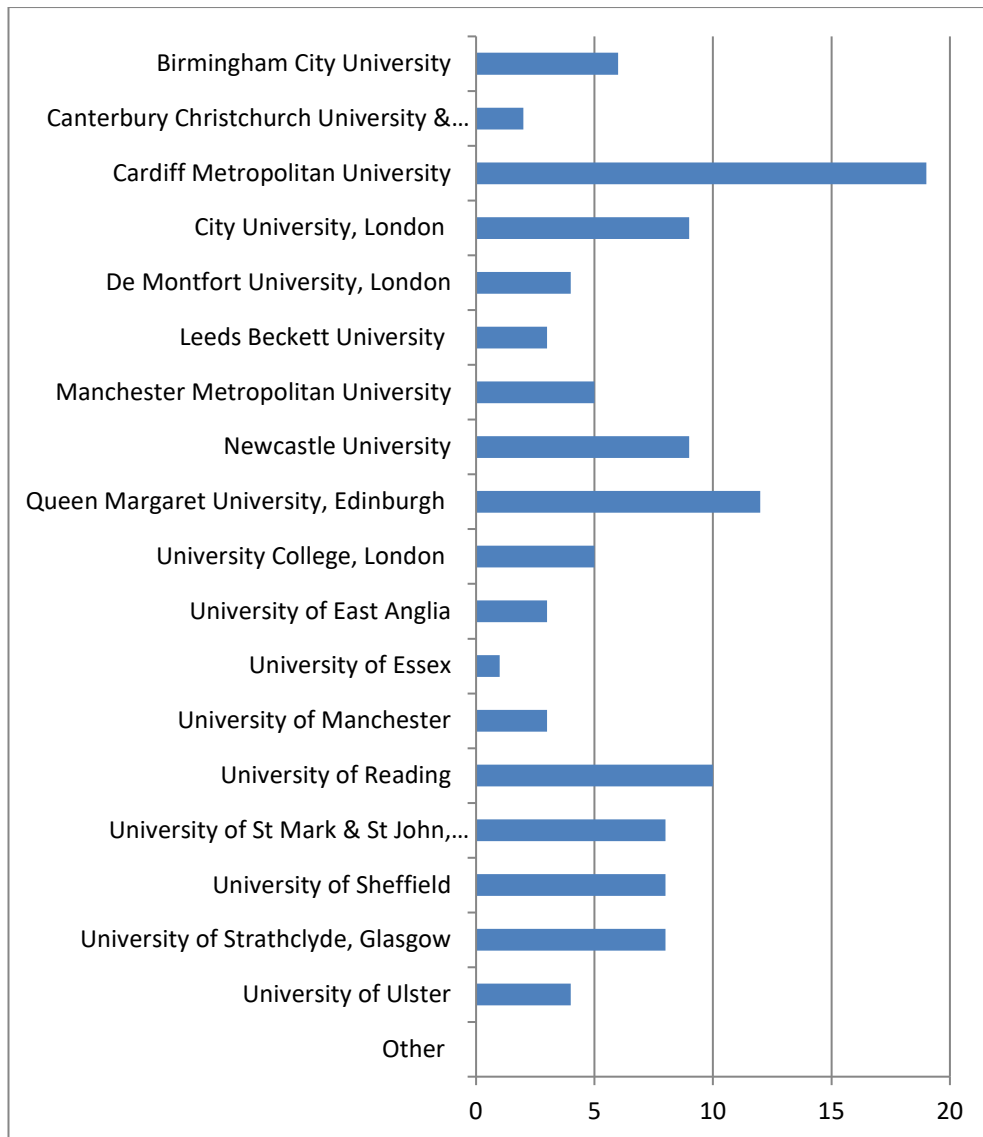
a. If you selected 'yes', please state what kind of work this was

A rectangular text input field with a light gray border. It contains a horizontal scrollbar at the bottom and vertical scrollbars on the right side, indicating it is a multi-line text area.

Page 7: Any further comments?

32. Do you have any other comments you would like to add related to the training you have had in relation to working with children with autism?

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Appendix 7 - Training establishment attended (Chap. 7)

Appendix 8 - Qualitative responses (Chap. 7)

a) Clinical areas that respondents felt were given too much emphasis

'Red flags' identification of ASD.
More focus on phonological speech difficulties which does not make up a great proportion of clinical caseload. perhaps this is due to changes in criteria for therapy but in hindsight there was too much emphasis on things we hardly see in clinic
Transgender voice
Voice
Neurodegenerative diseases
Dysphagia, considering that we still have to do further training to work with this client group. We also had a full module on LARSP - a phonological assessment, because it was designed by one of our lecturers.
paediatric voice, stammer
I had a full module on audiology which included a written assessment at the end of the semester. I found this interesting and the assessment made me research more into hearing impairment but I feel I would rather have had a full module on ASD with an end assessment and only a few lectures on hearing impairment. In practice I refer children to audiology and there is an SLT hearing impairment specialist who I can seek advice from in the very few cases of hearing impairment I have worked with. I work with children with ASD on a daily basis in different settings and of different ages. Learning more about assessment and intervention would have been much more beneficial.
Stammering
Voice
Autism is over-emphasised and over-researched in comparison to other conditions affecting language and communication.
Theoretical side of assessment i.e. what assessment to you, what the diagnosis is
Theory instead of how to work with children with ASD in practice e.g. managing meltdowns.
ASD was given a similar amount of time/ content to other disorders/ disabilities which are much less prevalent in an average caseload e.g. cerebral palsy (both were one individual module).
Foreign Accent Syndrome
Audiology.
a lot of in-depth knowledge/skills regarding speech sound difficulties, linguistics.

Majority of the paediatric time was on developmental disorders such as speech sound disorder or DLD
Phonology and transcription Grammar
Aphasia therapy.
SLI
Aphasia Stammering
mainstream assessment tools, mainstream placements
LINGUISTICS!! Not even really a clinical area. But WAY too much time taken on this.
Very specific Evidence based approaches like PECS. Would've be useful to know about broader range e.g. PACT
Phonological difficulties Conversational analysis (areas of research /special interest for lecturers within my department)
I felt the majority of the clinical modules were aimed at an adult caseload
Audiology
Theoretical linguistics and psychology
Theory of Aphasia Theory behind assessments - very little focus on actual interventions
Aphasia, Dysarthria - felt my training was more adult focused.
Linguistics
More focus could have been given to actual therapeutic intervention for children with ASD. There was a lot of time allocated to the theoretical side of ASD rather than actual management strategies.
Probably the range of assessment approaches instead of more time being given to intervention.
transgender voice (this is a highly specialist area)

Phonological therapy
Acquired neurological conditions
hearing impairment and audiology
Dysphagia
Linguistics
Speech sounds
maybe not too much emphasis but we had a lot of modules specific to other conditions but autism not so much
Paediatric speech sound disorders and schizophrenia.
Stammering
Stroke client group, especially details of assessment. Particularly as this is a client group I am unlikely to work in.
DLD
We had a whole module on fluency but only 2 guest lectures about Autism - Autism is a lot more common to my caseload than fluency
Strong focus on speech disorders.
child psychology
research module
Too much about the characteristics of ASD - not enough about assessing re: functional strategies leading to intervention.
Verbal children as priority
Adult, neuro type stuff. Course was very heavily adult based, which seemed to stem from course director's area of interest
It's difficult because we didn't know whether we'd go into paediatrics/adults and so you have to cover everything to a certain degree. I felt that some areas were given more time than others, but I see less of that on my caseload e.g. stammering vs ASD
adult speech and language therapy - specifically aphasia
Possibly speech sound difficulties
Stroke

b) Other comments about pre-registration training

It would have been good to also have a focus on functional, relevant therapy approaches for children with ASD.

I felt more confident as I had a Learning Disability placement where I received a lot more information than others did that did not have this specific placement. would be beneficial to have lectures delivered by ASD specialists and also some video footage

Most learning came from placement. Focus of uni learning was theory of the triad/dyad of impairment and very little on intervention

It was very textbook & didn't really apply to the reality of ASD. Nothing was mentioned about girls/women & how they present differently. Nothing was taught about TOMS, targeted interventions, co-morbid features etc. Very poor!!!

Lots of emphasis put on triad of impairment but I do feel that we lacked practical advice on intervention - this knowledge came from clinical working post-university

It was poor. I only felt confident due to my work with children with ASD outside of my course.

did not adequately prepare me for the amount of autistic children that i would be involved in assessing and managing.

Limited understanding of SLT's role from a Care Aims perspective.

Very little opportunity to see the materials that could be used for interventions for children with autism - it would have been useful to have gone through how to create a social story or deliver social behaviour mapping

We were given no information about how to plan therapy, measure change, measure outcomes, or approach intervention. Very little to no practical information about the heterogeneity of the condition. Autism is currently 90% of my NQP caseload and I feel it's a huge part of SLT schools jobs. It's a massive gap.

Assessment and intervention was often Americanised/not readily available or used in the NHS. An assumption when started working that I had greater experience in ASD and few shadowing opportunities offered. Never saw an ASD initial assessment on placement, saw school-age children who were more able.

Unfamiliar with many interventions/approaches in clinical practice (different to ones they teach you about pre-registration).

I was lucky to have a good majority of my placements based in specialist provisions, e.g. with children with PMLD, and range of ASD diagnosis.

It would have been beneficial to have had more practical seminars regarding the use of visual support e.g. first/then board, communication boards, PECS. Also how to engage a pre-school child with ASD as typical PCI strategies will not be suitable.

I think the teaching was great, it just took me a while to build up confidence in my SLT

clinical skills

no

I feel that developing effective skills for working with children with autism needs hands on practice. I received this through voluntary work as a Floortime Playworker which i did alongside my degree. I didn't feel I learnt any practical skills on how to engage a child with autism on my course. Without being able to engage a child with autism you cannot assess them accurately and provide appropriate intervention strategies.

Not enough time spent on this area especially when it is the majority of a community SLT's caseload.

There is so much to cover in a speech therapy degree, I understand it is hard to go into depth with everything. We got the headlines in our course which is a good foundation, but would have liked much more. And there were attempts to consider ASD within other modules/subjects e.g. AAC.

Theoretical knowledge of ASD was covered well but practical approaches weren't covered in teaching, then we were expected to know this on placements

I had prior experience of working with children and adults with autism so was very surprised by the lightness of the input

Very little input regarding autism during my training, however I came from an autism background with several years experience of working with young people with autism in both school and support work settings. I feel that I learnt most here, and during my autism placements (that I requested). Very little lecture/workshop based input, which was disappointing - although with autism I feel that it is better to learn 'on the job' rather than theoretically

I feel there is a distinct lack of training in this area and also with learning disabilities

I attended Queen Margaret University for the postgraduate diploma/masters course and there was a whole module (which lasted for 1 semester, 3 months) focused on ASD and DLD (divided into 2 halves). I feel I was prepared extremely well for working with children with ASD.

Our lectures on ASD came from an SLT outside of university working with an ASD caseload. Having her practical knowledge and expertise was very useful and enough time was given as part of the course to provide an acceptable starting point for working in a newly qualified role with children with ASD.

Did not receive training on many different strategies beneficial for working with children with autism, e.g. intensive interaction or face watching

Could have been better. There are learning gaps that I think would have made me feel more confident about working with children who have ASD. E.g. too much emphasis on assessments/diagnostic process but not on the effective conversations that need to be had with parents who often are not expecting a diagnosis.

I had experience of working with high functioning autism and did not have any placement experience of low functioning nor did we have much teaching on either, it was more

overall autism teaching.

At the time it seemed detailed and informative but when in practice I don't feel I have many ideas for therapy.

I felt like virtually all my knowledge of ASD was based on my placements. The teaching we received in class was very short and the assessment and interventions were not relevant to real life. The idea that SLT tend to be the first to see children before they are diagnosed and feed into the ASD assessment was completely ignored - we just learnt about ADOS rather than considering the assessment we would be carrying out as NQPs.

I would have liked to receive more training on assessment tools to be used with children with autism as well as intervention techniques used with non-verbal children. I feel there wasn't enough covered in terms of the range and variation found in the ASD population.

Would be better to have more hands-on experience

Would have benefitted from support with PRACTISING intervention strategies such as PECS or Intensive Interaction. I don't feel this is something you need just the theory for, you need to SEE it to understand it.

A lot of focus on ASD theory. Would have been good to pick apart the DSM or ICD and known exactly how to assess to look for different areas

It was not adequate particularly given what a large chunk of our client group this makes up and this group is a big priority for many schools

Very little in house (university) training. I was fortunate enough to have an excellent final year placement that was all ASD related which gave me the confidence to work with an ASD caseload as an NQT. If it wasn't for that placement I wouldn't of had the confidence, skill or knowledge to do so.

Teaching of triad of impairments was good. In hindsight, AAC teaching was not helpful, I've learnt everything about it post qualifying.

I think perhaps something like SCERTS training should be given during pre-registration. Our Autism day/half-day was spent on statistics and characteristics of ASD but not actually intervention or how to work with ASD, from a Speech and Language perspective.

I have come into my first job feeling quite underprepared for the child I have been given who is a social partner stage child with ASD.

Very theoretical - very little training around assessment or intervention of children with ASD

I attended ASD awareness training designed for health visitors and SLTs on one of my clinical placement and felt that it left me with a brilliant understanding of all presentations including female presentations of ASD. Alongside my placements, other training outside university gave me the best knowledge of ASD.

It was taught within the learning disabilities module so it was very much focused on non verbal individuals and those with co-occurring learning disabilities. There was much less focus on verbal individuals with autism or those in mainstream settings

I would have liked more information and experience working with children with ASD before starting work. It is an area I feel is increasing in our caseload.

Happened to receive a specialist placement working within an ASD team which aided my knowledge and confidence but the course alone did not fully support me

I had a placement working with adults with ASD

In general, the training was great and it covered a lot. But I feel more time should have been designated to the discussion of practical management strategies which can be implemented with children with ASD for example through peer case discussions or such.

It should be a module

More understanding on how to implement autism strategies and train others. A basic knowledge is give about potential interventions, but little opportunity to develop an understanding of how these strategies or intervention should be introduced.

Everything we had was not in enough depth considering it is a large part of the paediatric field

On My paediatric clinical placements I was always given children with speech sound difficulties to work with. Theory of autism was covered in some detail- however assessment and management covered briefly.

There really wasn't enough, it took up one 3 hour lecture as a part of one module during my second year whereas as teaching on other topics was integrated through the whole 3 and a half year course.

Very little on therapy approaches, it's all post grad

I was fortunate enough to have complex needs placements - it was only during this placement that I built up the confidence and skills for working with children with ASD. Without these placements, my knowledge would be much less.

Would have liked to learn about the spectrum and the differences between all of the ASD children that we see. ON my course, there was some emphasis on ASD from a special school point of view but not the mainstream.

Theory was general across age groups, but I only met one child at preschool age during placement with ASD characteristics, who was yet to be diagnosed. I did not have opportunity to meet or work with any other age groups. However, in my working role (as an NQT) I have a large proportion of ASD clients of all ages/key stages and feel unprepared for them.

Would have liked more

It was inadequate - the taught component and the availability of a practical/placement element.

Limited opportunities for looking at non-verbal ASD. Often non-verbal was introduced as part of learning difficulties but not specifically autism alone

N/A

Most knowledge gained from clinical placement experience rather than theoretical teaching

I think we were given enough basic overview, but not enough practical experience. More time spent on going through a typical ASD pathway would also have been useful

Unsatisfactory information given (both in terms of quality and quantity). Felt inadequately prepared for working with children with ASD in first job. Developed the vast majority of my skills and knowledge on the job.

We had a lecture about the theory of ASD e.g. triad-dyad of impairment but very little discussion about assessment or intervention. Only developed skills in this area through placements.

Everything was covered briefly and was more theoretical rather than any specific information about assessment or intervention.

c) What do you feel would help you most to develop your competence to work with children with autism?

A parent training programme such as Hanen More Than Words.
more experience working with children with autism

Shadowing ASD specialist or being in ASD setting once in post for some time so that there is opportunity to think about how to apply strategies (rather than at induction stage when you are being overwhelmed with lots of information). Sometimes the training or support is not delivered at the most pertinent stage

More formal training on specific assessment and therapy approaches.

Training on therapy approaches/observation of more skilled therapists

Funded NHS courses

Further training opportunities and through general experience working with the ASD population/MDT working

Training in certified approaches - PECS, SCERTS

Training courses and further in house training

i would really like to access Hanen more than words training.

Training and a clearer outline of SLT role when working with children with ASD
assessment

intervention strategies

Greater access to resources which give more guidance on assessment and intervention methods

Training in parent-based approaches and specific communication approaches
more training around intervention and assessment

Training in TEACHH and practical discussions about case studies

More training for assessment/approaches to intervention.

Readily available information about the pathway for diagnosis in each locality. Often parent's coming into clinic don't understand how the pathway works e.g. referral to Paediatrician etc. and it would be useful to have a clear cut visual aid to show them all the appts they will need to go to, how long it will take etc.

Shadowing more experienced colleagues, specific ASD training in PECS and assessment

Parent training programme such as PACT

SCERTS training

more autism specific training to be provided by employer

Sensory Integration training

Training opportunities and more exposure to children with ASD.

Supporting non-verbal children with ASD who are in a mainstream setting (through parental choice)

Shadowing, more awareness training, working with older children, support from more experienced colleagues.

Information on where to get advice/what to do etc

Having someone who I can approach to get answers/support from

Experience - wide range of interventions to help support families with what they need when they need it

Training courses, shadowing

Working with autism in a range of settings can provide a lot of insight - I regularly draw on my support work and teaching assistant experience for strategies and knowledge.

More specific training on the parents/child approaches to working with those with ASD, e.g. Hanen More than words. Additional training on verbal behaviour approach.

in house training

Further training on managing ASD to give advice to teachers and teaching assistants.

Training in communication approaches for example PECS.

Attending more training courses

Practical experience of working with children whilst having robust and supportive supervision was the most valuable in developing my confidence with working with children with ASD.

Differential diagnosis in early years

People to be offered CAN rotations to gain more experience. I feel I have been well supported in my workplace.

More training regarding with girls with autism

My service offer an ASD mentoring program which I have found very useful to review cases, joint sessions and to shadow a more experienced colleague.

Exposure to this in a real life situation on placement.

Experience with the client group, training in specific ASD interventions/strategies

Working at a primary school specialising in ASD and working with more experienced colleagues who have shared their knowledge with me.

More experience as I only work with children before they receive a diagnosis and only to make the decision to place them on the list for an assessment

PRACTISE. Shadowing ASD professionals.

Use of intervention approaches

Observing colleagues

More funding for training e.g. Hanen

More resources for attention autism

SCERTS training has been excellent and Sheffield is adopting a city wide SCERTS approach

To have more opportunity to work with specialists within our NDT service.

My brother has autism so I draw on my experience of him most often. Training in assessment methods and further intervention approaches would be helpful as they can be so varied you need a large toolkit of options available.

More specific training while a student. Also being given training on the job, before being given a child with ASD.

Formal training courses and more in house specialist support

Training in AAC (specifically PECS), attention autism, further knowledge of the evidence base for intervention

Training on the specific communication characteristics of autism and specific management approaches that are applicable to children with autism.

On the job experience and shadowing more experienced therapists

Training on specific techniques, for example with preverbal children - attention autism.

Regular training/ seminars

Further training on presentations of ASD.

Attention Autism Training

ADOS training

More training around ASD

More practise!

Working through specific autism-focused competencies within my service - this is what is currently supporting me to develop as an autism specialist

More specific training at university -

Shadowing more experienced therapists.

Shadowing a child through the assessment procedure.

Shadowing opportunities and joint working with more senior therapists to learn in a practical case-based capacity.

Working more closely with SLTs with more experience/training around autism

More shadowing experience and training in different intervention approaches work based learning and teaching on the job once in role

A good post grad accredited course

Opportunities to attend Hanen training.

Shadowing and learning from specialist speech and language therapists' working with children with ASC

More involvement in the assessment process e.g. not only being AX by ND team.

More training around intervention approaches.

More teaching on intervention

Further training on management

More training

More supervision

Your own small caseload

More experience on clinical placement and case studies and practicals on course

Working with specialist colleagues

Confidence in delivering parent child interaction. As well as more knowledge of specialist packages e.g. PECS, PACT etc.

More experience, I have learnt a lot since beginning as an NQP therefore more placement experience during training would have been beneficial.

Further training around assessment and intervention, and further strategies to support with behaviour management

More information regarding the assessment process and the criteria that children are scored against to determine whether they receive a diagnosis or not

Continued CPD in assessment and therapy approaches

We have received in house training and have an autism specialist but I feel that I require professional courses to be able to fully support parents e.g. PECS, ADOS training etc.

General training regarding assessment and approaches at the start of working as an SLT. In house or external training with a case study in mind, or observations of a supervisor with case study. SCERTS training would be brilliant as I often use it as a useful tool even though I haven't been trained to use it.

More knowledge and practical experience of specific communication approaches e.g. PECS

More opportunities/ time to shadow specialist therapists. Training of any sort.

Specific training for assessments and shadowing opportunities with clients of differing age/key stage. Additionally, an EHCP goal bank aimed at reasonable targets for ASD further formal training

More external training opportunities- have been told there is limited funding for external training for things such as PECS.

More training courses offered by the specialists. More in depth lectures on the topic at university.

More information during pre reg

More formal teaching on assessment and interventions above at degree level

After four years of working with children with Autism, I feel now skilled in informal assessment and identifying intervention strategies, but I have no experience of formal ASD assessments.

Availability of e-learning modules

Gaining practical experience by actually working with the children. All children with autism are different and no single training approach will cover competence in understanding everyone's needs.

Opportunities to shadow colleagues at an early stage in assessing for autism. Whilst studying, focus on how intervention varies from children with severe ASD and those with mild-moderate diagnoses.

more experience with the client group and an understanding of the diagnosis of ASD

More training offered in specific social comm interventions, however otherwise I feel that I have developed a fairly good competence through clinical experience and supervision

More specific training in Autism diagnosis and joint observations with someone more experienced to check that I'm correctly observing the signs and symptoms

further training and protected learning time

Training on interventions and approaches.

Learning about assessment/intervention rather than the focus on the characteristics of autism, also more joint working so doing joint sessions/joint assessment with more experienced colleagues.

More experience and peer support.

A clear social communication pathway to guide my decision making and management of children with autism

d) Prior experience with children with autism

I used to run a Summer Kids Club at a hotel, where the ethos was 'everyone can play'. It was very inclusive.

LD

Work experience and worked with adults with learning difficulties.

Working with disability swimming club, work experience in mainstream schools

Support worker, play worker

Preschool for children with additional support needs in Canada

I was an early years worker and had previous experience of children in my key group with ASD

Working as a 1:1 LSA in a mainstream school

Summer play scheme for children with additional support needs

Work experience at a special school, helping out for 2 years at an NAS after school group for then known 'Aspergers' group, 1:1 for children with special needs at a summer club

As a care assistant.

Support worker for a holiday/ after school club with special needs (many of whom had ASD).

School teaching assistant.

working in a pre-school

Volunteering at summer schemes etc for children with additional needs

LSA

Support worker/carer

I worked as a community inclusion professional with disabled children, adults and families

4 years as a support worker with children and young people (age 3-19) who have autism and other disabilities

1 year lead support worker with children/young people (age 6-19) with autism and other disabilities -e.g. running a summer scheme for teenagers, running short break/respite sessions for young people

1 year as a 1:1 teaching assistant with a year 4 child with autism and challenging behaviour in a mainstream setting

3 years as a 1:1 support worker through direct payments for a teenager with autism experience as TA at a special school and some individuals with ASD at The Priory inpatient hospital

Working with children in nursery settings as an assistant.

I was a speech and language therapy assistant. I am also a sibling of an adult with autism.

Volunteering as a classroom assistant in a special school - ASD class

Through being a Cub Scout leader.

As a Teaching Assistant in special schools

Respite care 1 week with sense

No other experience

My brother. Volunteering at a special needs sports group.

As an SLTA in a PMLD school, some continuing PECS work, and also use of iPads for choice making and some communication. Some observation too.

Worked for Mencap (SEN holiday play schemes) for 5 years during school and university holidays

After training, before beginning work as an SLT, I worked as an LSA for a non-verbal child with ASD in a mainstream reception class for 1 year

1:1 ASD teaching assistant in mainstream primary school.

Nursery work

As a teaching assistant, within a research-based role

Teaching assistant at an SRB working with children with SLI/DLD in mainstream secondary school

Several children had a diagnosis of ASD.

Voluntary work at a school.

Working as a play worker.

Working in a school.

Volunteering

Work experience in a special school

1:1 play support worker then a supervisor for holiday activities, 1:1 support for teenager with ASD in the community

I had worked in a nursery and had some work experience with portage

Support work and respite care

I worked as a SALTA in special schools for 2 years beforehand.

Good level of understanding due to family member's diagnosis. However high functioning therefore did not require a high level of intervention

Voluntary work in schools and sports clubs (not exclusive to autism)

Work experience and also work as a teaching assistant/ volunteer girl guiding uk leader

<p>Work experience in schools and working with young people with a range of special needs in clubs.</p> <p>Learning Support Assistant for children with ASD in primary schools/ 1:1 tutoring with child with ASD following ABA programme, experience as SLT Assistant</p> <p>One year working as a Teaching Assistant with a child with ASD</p> <p>During the course I worked as a relief support worker for the National Autistic Society</p>
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e) Do you have any other comments you would like to add related to the training you have had in relation to working with children with autism?

My memory is not the best so maybe I was taught more about autism than I can remember... But I do know that I was not confident about this client group when starting work.	Lack of confidence
Having parents of ASD children speak to SLT students would be really helpful	Lectures from affected people
Expectations around SLT's role with autism is different to impression at University, which was heavily theory based.	Too much theory
I felt that I often saw Autism assessment on placement but nothing in the way of intervention, leaving me feeling as though once a child was diagnosed, I would not know where to go from there. It would have been useful to have spent more time in lectures actually looking at materials used for social communication interventions, as I only knew names of interventions and not actually what they were for or how they worked.	More training on assessment and/or intervention
I feel like a huge amount of my knowledge has come from working directly with (including observing) children with autism, and discussions with my line manager, which have been very helpful	Importance of experience/ placements
Practical, NHS based training for assessment and intervention of ASD is crucial in University training. It would result in more confident and equipped newly qualified therapists dealing with families going through an emotional experience much better. As well as improving therapist's own mental health in their first year of practice as this can be a daunting and overwhelming area of speech and language therapy, that is growing more and more.	More training on assessment and/or intervention Lack of confidence
The majority of this has been simply from my own experience at work and the knowledge I have gained from my colleagues.	Importance of experience/placements

<p>I'd recommend:</p> <ul style="list-style-type: none"> - wider range of hands on experiences with individuals with autism- going into special schools on placements- it seemed to be pot luck who went on an ASD placement. - Hearing adults with autism present - Bigger focus needed on engagement and building relationships for accurate assessments 	<p>Importance of experience/placements</p> <p>Lectures from affected people</p> <p>More training on assessment and/or intervention</p>
<p>I only had one paediatric placement which meant I did not feel confident in working with children and young people with speech, language and communication needs when I qualified.</p>	<p>Importance of experience/placements</p> <p>Lack of confidence</p>
<p>It was disappointing how little was covered during university (I specifically remember we had a rare lecture that was supposed to cover autism however this was cancelled and never rescheduled). I feel that I learnt most of what I know about working with and supporting someone with autism from my prior roles, my autism school and SEN school placement (I specifically requested this) and my work since qualifying (I work part time in an ASD specialist school and college, and part time in a community adult LD team)</p>	<p>Lack of training in general</p> <p>Importance of experience/placements</p>
<p>I feel there does need to be more emphasis in this clinical area within pre registration training because there are increasingly large numbers of children being diagnosed with ASD and our skills as SLTs need to match the needs of those we work with.</p>	<p>Lack of training in general</p>
<p>I was speaking to colleagues about this yesterday - that there is not enough time spent on autism and/or learning disabilities for both children and adults</p>	<p>Lack of training in general</p>
<p>My university offered a full module which was 1 semester divided into 2 halves - 1 half was ASD, 1 half was DLD. The training was very thorough and I believe that my strong interest in ASD is because of the thorough training I received. After speaking with colleagues and friends who trained at other universities, it has become clear that not everyone received the same amount of training. I feel very lucky that I received so much and it has set me up well for day to day working life as I see children with ASD almost every day.</p>	<p>Good training and good confidence</p>
<p>Realise this is aimed at children with autism, however I work with adults with learning disabilities, many of whom are autistic. The only training I received in uni was the training focused on autistic children, and now I am expected to apply this to patients in their late teens and early twenties. Chances are many of my older clients may</p>	<p>Lack of training in general</p>

be autistic, but were not diagnosed	
It would be beneficial if universities could offer more placements related to ASD. Also, more varied course content which covers assessment and management of non-verbal children with ASD. I also think touching on the sensory processing aspect related to ASD would be helpful as I have found that this is a big part of working with children with ASD.	Importance of experience/placements More training on assessment and/or intervention
I feel that it has been very focused on the theory but not enough on real-life experience	Too much theory
PECS training has been absolutely vital. It would also be great to get some training on Intensive Interaction, because I believe this benefits everyone. Even when working with children without ASD, sometimes an intensive interaction approach supports shared engagement.	More training on assessment and/or intervention
I think this is a key issue and training courses should provide more training for working with this group	Lack of training in general
There should be better training during the university course, that could incorporate SCERTS or something similar. I feel, regarding ASD, that I have come in to my first role quite unequipped.	Lack of training in general
I found that the university training focused highly on theory, with very little training around assessment and intervention (both for children with ASD and other difficulties), which was expected to be learnt on (quite limited days of) placement. I would support a change to model the training on other vocational courses, e.g. OT/physio/nursing which provide more placements and focus on developing practical skills alongside theoretical knowledge.	Too much theory More training on assessment and/or intervention Importance of experience/placements
Feel not enough training was given re social communication intervention	More training on assessment and/or intervention
I had a part time job as a student as a support worker with children with ASD. I received training and grew my knowledge through this. I feel I graduated with more confidence due to this rather than the information I learnt from my pre-registration course.	Importance of experience/placements
Most of my training has come from in-house, shadowing and learning from more specialist speech and language therapists. University gave me tools to understand communication difficulties for children with Autism, however working has taught me how to implement support, further assessment and work as a multidisciplinary team.	Importance of experience/placements
I will soon be attending an Attention Autism training	More training on assessment

course which I hope will be very useful.	and/or intervention
I find making decisions over discharge difficult. I also am unclear regarding our role and how it overlaps with other professionals (specialist teachers). I would like more support with appropriate target setting for children with autism	More training on assessment and/or intervention
It was focused on theory and not on therapy or approaches.	Too much theory
I feel that University should have had much more ASD focused training, as we had very little and now as a mainstream early years and schools therapist, this makes up most of my caseload.	Lack of training in general
I gained the most from working with children with ASD. Theory is general (however thorough) and children with ASD can present very differently.	Importance of experience/placements
I am pleased you are researching this. The one area I felt least prepared for after qualifying was ASD.	Lack of confidence
Variation in training received in my cohort depending on placement allocations during the course	Importance of experience/placements
I think autism should be covered more within the SLT courses as much of my experience and interest sparked from my placement experiences	Lack of training in general Importance of experience/placements
Between qualifying and getting my first SLT position, I worked in two schools supporting 4 boys with autism. I accessed general awareness training through this job and gained experience through liaising with SLT colleagues.	Importance of experience/placements
I felt that assessment was focused on more heavily than management/intervention for all client groups. I would've liked more detailed discussion of intervention approaches, we were given more of a summary of each approach. Practical experience of intervention approaches was only really available during placements.	More training on assessment and/or intervention Importance of experience/placements

**Appendix 9 - Missing data - information about questions not answered
(Chap. 7)**

- One respondent did not answer Question 8 ‘Did you meet any children with autism on any clinical placements?’
- One respondent did not answer Question 11 ‘Any clinical areas given too much emphasis?’
- One respondent did not answer Question 19 ‘Since qualifying as a registered SLT, have you funded any autism training yourself?’
- One respondent did not answer Question 21 ‘Have you ever sought advice from a colleague with more experience of working with children with ASD?’
- One respondent did not answer Question 30 ‘Did you attend as a mature student?’