Working and learning across boundaries: classroom teachers and occupational therapists supporting learners who have profound intellectual and multiple disabilities

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A thesis submitted to Auckland University of Technology
in partial fulfilment of the requirements of the degree of
Doctor of Health Science (DHSc)

2021

School of Clinical Sciences

Abstract

Classroom teachers and occupational therapists need to work together if they are to meet the needs of learners with profound intellectual and multiple disabilities (PIMD), but how they navigate their multi-agency working in this area of practice is largely unknown. Guided by the conceptual framework of activity theory, where learning is recognised as being an intrinsic part of activity, this study has a specific focus on the multi-agency practice of classroom teachers and occupational therapists as they work and learn across professional boundaries and provides an understanding of the factors that have influenced their activity systems and interactive relationships as well as interpretations of their own, and each other's professional identities, roles and responsibilities in this specialist field of work.

A qualitative research design was used and included individual interviews and focus groups. The data gathered reflected the multi-layered nature of multi-agency practice in complex situations. The occupational therapy and classroom teacher participants were able to analyse and consider their everyday activities and how these supported or constrained their ability to work collaboratively towards joint goals and outcomes. This process aided expansive learning through an adapted change laboratory approach and boundary crossing learning mechanisms to allow for discussion and ideas to emerge for future enhanced ways of working which could impact on future practice. The suggestions made during this research were in two key areas: firstly in the professional roles and identity of the classroom teacher and occupational therapy participants in their roles and ways of working to meet the needs of learners with PIMD and secondly, in relation to the supports and constraints they experienced in their multi-agency working and learning as they carried out their roles.

This study enriches the literature on the multi-agency practice of classroom teachers and occupational therapists working with learners with PIMD and also makes a methodological contribution in its use of elements of activity theory and boundary crossing to link the beliefs and ways of working of the participants to provide a more comprehensive understanding of their multi-agency working and learning.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

30th October 2021

Karen Laing

Acknowledgements

I would like to thank Dr Ruth Boyask and Dr Ellen Nicholson for their unwavering support throughout my doctoral journey. Having supervisors with extensive experience from each of the two worlds of teaching and occupational therapy supported the interdisciplinary ethos of this research and provided wonderful discussions and insights into the topic.

I would also like to acknowledge the impact of Professor Liz Smythe who started me on this DHSc path with her unbounded enthusiasm and empathy.

My thanks to TEACHNZ for giving me the time and opportunity to pursue this research through a Teachers' Study Award for 2019. During this time I also attended and presented at the World Congress for the Scientific Study of Intellectual and Developmental Disabilities (IASSIDD) in the UK, which provided a wonderful opportunity to meet and talk with experts in the field.

This thesis would not have been possible without the classroom teachers and occupational therapists who gave their valuable time to participate in this study. I was humbled by their willingness to explore new ways of working to improve their multi-agency practice with learners with PIMD and their families. It has been a privilege and an honour to walk alongside them in this journey. Thank you to Sue Knox for her help in formatting this thesis and to other professional friends and colleagues who have shown interest in this study, shared their ideas and helped to challenge my thinking by asking the tricky questions!

Love and thanks are given to my family, especially my husband Gordon, who never complained when I was too busy with my studies and provided constant support in so many ways.

Finally, I dedicate this thesis to my mother Nancy, who for as long as I can remember has urged me to reach my full potential and instilled in me the belief that I can achieve anything I put my mind to.

Chapter 1 Introduction

This focus of this research has been the multi-agency working and learning of occupational therapists and classroom teachers as they worked together across professional boundaries to support learners who have profound intellectual and multiple disabilities (PIMD). Practitioners often work together across professional boundaries, especially in complex work settings where people from different professions need to respond to a wide range of demands (Akkerman & Bruining, 2016; Daniels et al., 2010; Schenke et al., 2017).

It is important at the outset of this thesis to clarify the complexities of the specialist and complex area of practice of the classroom teacher and occupational therapy participants in this study that requires their multi-agency working. Firstly, it is necessary that the participants work closely with each other in order to best meet the needs of the learners with PIMD (Ryan & Quinlan, 2018) who by the nature of their individual diagnoses tend to have highly complex and multifaceted needs (Coutinho & Hunter, 1988; Cunningham, 2017; Maes et al., 2020; Mansell, 2010).

Secondly, in Aotearoa New Zealand, learners with PIMD still mostly attend specialist schools, which is the shared workplace community of the classroom teacher and occupational therapy participants in this study. Specialist schools can be controversial as they are often seen to be "positioned at the margin of education's normative centre" (Florian, 2019, p. 695). This perception also adds to the complexity of the participants' work environment and in turn their ways of multi-agency working and learning. The classroom programmes for learners with PIMD can look very different even from other learners in specialist schools, as they often focus on developmental and functional activities more familiar to occupational therapists, rather than the achievement of traditional learning tasks that are the usual domain of the classroom and classroom teachers. This way of working increases the potential for the boundaries of practice between the professional roles of the classroom teacher and occupational therapist to be blurred or crossed as they step outside their usual roles to explore new ideas and solutions (Bakker & Akkerman, 2019; Engeström et al., 1995).

The classroom teacher and occupational therapy participants in this study reported that they often worked as part of a large extended team of people from education, health and social services as well as the learner, their families and carers. One of the most critical areas of learning needed to facilitate the success of multi-agency in practice, is for professionals to be able to grasp the rules and processes of multi-agency working and learning, particularly when working in large teams (Abbott et al., 2005; Daniels et al., 2007; Ryan & Quinlan, 2018). Multi-agency working is often an identified requirement in services for children due to their potentially complex, fragmented nature. Whilst the benefits of multi-agency working are widely recognised there are also many challenges which means it is not always easy to achieve. Despite the acknowledged need, the lack of co-ordinated multi-agency practice in services for children has consistently been recognised and highlighted as an issue of concern in several studies (for example, Atkinson et al., 2007; Carter et al., 2007; Edwards & Daniels, 2012; Edwards et al., 2009).

1.1 Multi-agency working and learning in the context of this study

The term multi-agency is used throughout this thesis to represent the joint practice between the classroom teacher and occupational therapy participants in this study as they carried out their professional roles. It signifies the formal and informal interactions between them and the other team members, for the planning, action and monitoring of their interdisciplinary interventions (Barnes & Turner, 2001). There can be several terms used to describe multi-agency working in the literature and in practice where other terms such as partnership, interprofessional collaboration, interdisciplinary working and inter-sectoral partnership can be interchangeably, often causing confusion (Atkinson et al., 2007).

Multi-agency working provides opportunities for individuals to learn by developing their own skills and knowledge as well as by learning from other professional colleagues (Greenhouse, 2013). The analysis of learning in practice is closely aligned to Activity Theory (AT) and its associated concept of expansive learning where the participants recognise and acknowledge the contradictions in their activities and move beyond their current thinking or practice to conceptualise new enhanced ways of working (Engeström, 2001).

Multi-agency working and learning are key foundations for this study and are discussed more fully in Chapter 3.

1.2 Conceptual Frameworks: Activity Theory and Boundary Crossing

AT is the conceptual framework used for this study and is well suited as an approach "designed for studying the complexities and contradictions in authentic workplace environments" (Engeström & Pyörälä, 2021, p. 7). As discussed more fully in Chapter 4, AT is derived from a Vygotskian socio-cultural perspective where human activity happens in a relationship where people whose actions are the focus of analysis (the subjects) resolve a shared problem which is their focus of learning (the object) by using mediating artifacts (tools) to achieve a goal (Vygotsky, 1987b).

AT can be complex. There are many theoretical and empirical books and articles available on this theory however, there are very few which give guidance on how AT can be approached and applied by beginning researchers. This has meant an ongoing and often challenging journey for this researcher, to consolidate the knowledge gained from the literature and to become familiar with AT and its concepts. Despite the complexity, the conceptual framework of AT and the constructs in the activity system model have offered a supportive framework for the analysis and understanding of the dialogue, multiple perspectives and networks of the participants in this study, while also acknowledging the added complexities of their work context and how this influenced them as they sought to achieve their objectives.

AT has been applied in many studies, although few that have been carried out on small-scale interventions such as this one, where the key aspects of AT were used predominantly to describe the roles and activities of the participants from their perspectives. The limitations of using AT in this way were that it was not always possible to gather information on the whole activity system or its interactions, such as those from the learners with PIMD or their families.

This study used an approach based on the AT principles of change laboratory and expansive learning focussing on the first three phases of the expansive learning cycle which are; charting the situation, analysing the situation and working towards creating a new model (Engeström, 1987; Engeström et al., 1999). Using this adapted change

laboratory approach allowed the participants in this study to undertake smaller cycles of learning actions by exploring the issues at a conceptual level as a foundation for their expansive learning.

If, when, and how learning has taken place within multi -agency practice can be difficult to critically analyse. The concept of boundary crossing has been integral to this study. Engeström (2018) defined boundary crossing as the interactions that occur between at least two activity systems resulting from internal contradictions within a single activity system, which impede reaching a goal or solving a problem. Boundary crossing therefore occurs when individuals or groups such as the occupational therapists and classroom teacher participants, work at the boundaries of their practice to establish or restore a continuity in action or interaction across their practice by stepping outside their usual professional or work domains to explore new ideas and solutions (Bakker & Akkerman, 2019; Engeström et al., 1995). The learning mechanisms of identification, reflection, coordination, and transformation that operate in boundary crossing were used in this study to support the analysis and reporting of the data and to aide understanding of how the participants worked together to discuss and co-create new enhanced ways of working (Akkerman & Bakker, 2011).

1.3 Research questions

The overarching question that guided this study was:
How do classroom teachers and occupational therapists work across professional boundaries to support learners who have profound intellectual and multiple disabilities (PIMD)?

The three sub questions asked were:

- How do classroom teachers and occupational therapists construct their professional roles when working with learners who have profound intellectual and multiple disabilities?

- What activities do classroom teachers and occupational therapists engage in, which support or challenge their multi-agency collaboration?

- How do classroom teachers and occupational therapists construct which factors will have a positive effect on their future multi-agency collaboration when working with learners who have profound intellectual and multiple disabilities?

1.4 Aims, rationale and contribution of this study

To create new knowledge

The key aims of this research were firstly to clarify and increase understanding of the professional roles and multi-agency practice of the classroom teacher and occupational therapy participants and to inspire their expansive learning to cocreate new enhanced ways of working. The perceptions and ways of working of the classroom teacher and occupational therapy participants were explored in order to develop an enhanced understanding of the multi-agency working and learning that contributed to their practice and the development of "new insights, theories, and solutions related to complex service challenges and opportunities" (Ostrom et al., 2010, p. 6).

Despite the focus placed on practitioner engagement in multi-agency working and learning in complex work settings such as this one with learners with PIMD in specialist schools, there is very little literature in this particular context. This could also apply to schools across Aotearoa New Zealand where it has been acknowledged that despite strong support for building collaborative networks, there is still little evidence about what is required for effective multi-agency collaboration to take place in schools (Education Review Office, 2019). This study makes a contribution to knowledge in this field.

To support enhanced outcomes for learners with PIMD

A shared understanding by classroom teachers and occupational therapists of each other's professional roles and ways of working is important to determine pedagogical and therapeutic approaches and how outcomes for learners should be evaluated, measured and reviewed. This type of multi-agency practice is generally considered to be an important factor in the achievement of successful outcomes for learners, although how this way of working contributes to the development of programmes and outcomes is not fully understood (Barnes & Turner, 2001; Fairbairn & Davidson, 1993; Villeneuve, 2009).

The needs of children and young people with PIMD are not well recognised and are often invisible within disability studies (Mietola et al., 2017). Although the focus of this research is on the occupational therapists and classroom teachers, the needs of the learners with PIMD are very much at its heart, and it is hoped that this study will support enhanced outcomes for the learners through an increased understanding of those providing key services to them, such as the occupational therapist and classroom teacher.

To contribute to the discussion of the use of AT and boundary crossing frameworks

The conceptual frameworks of AT and boundary crossing were applied to this study in order to explore and describe the multi-agency working and learning of occupational therapists and classroom teachers as they navigate their practice when supporting learners with PIMD in the specialist school setting. This study specifically adds to the discussion and knowledge base in this area by offering different perspectives about multi-agency working and learning across professional and agency boundaries.

To apply an interdisciplinary lens

Undertaking this study as a researcher who has experience as both an occupational therapist and classroom teacher working with learners who have PIMD provided an opportunity for an interdisciplinary lens to be applied to the study so that a valuable contribution could be made to the knowledge base of both professions working in this specialist area of practice.

Throughout this research journey my knowledge and experience in each of these roles has been invaluable in developing a deeper understanding. For example, when I was in communication with the classroom teacher participants, as well as being a professional colleague I could call upon my experience and perspectives as an occupational therapist. Likewise when with the occupational therapy participants, I was a fellow OT and could also be cognisant of my pedagogy and perspectives as a classroom teacher.

I was also familiar with the activities discussed by the participants in their professional roles with learners with PIMD in specialist schools. It is these activities that are the basis for the unit of analysis in this study. Blunden (2009) supported Davydov's (1999) suggestion that activity and the concept of activity are interdisciplinary by nature and so are able to provide a common theoretical foundation across disciplinary boundaries.

As a researcher with first-hand knowledge of the activities of both professions and of the specialist school environment, this provided “privileged insight” to explore multi-agency working and learning across professional boundaries (Denscombe, 2014, p. 301).

1.5 Positioning of the researcher

The experience that was the catalyst for this study and inspired the research questions, was when I was working as a classroom teacher in a specialist school. I had six learners in my class, all of whom had complex individualised needs and five of whom could be classified as having PIMD. Of these learners, four were not independently mobile, two were tube fed and five were not toilet trained. Four were non-verbal and used a variety of alternative augmentative communication systems. Four of the learners also had a visual impairment, two of whom had a dual sensory (vision and hearing) impairment. Four learners required physical support or hoisting to change their position, for example to and from a wheelchair, standing frame or walking frame. One learner was medically fragile and spent much of the day in different lying positions on a hospital type bed in the corner of the classroom. As the classroom teacher, I had two teacher aides to support the classroom programme, which was predominantly a multi-sensory one and focussed on foundational learning and functional activities. Each learner in the class had learning outcomes, however these were often linked to functional as well as learning goals, for example “x will work towards independently pressing a switch to enable him to access the switch toy” or “y will hold an object in his hand for five seconds”. It struck me that the activities I was carrying out on a daily basis were more aligned to those of an occupational therapist than a classroom teacher, and I often reflected that I was spending my days working on functional independence goals rather than any specific goals relating to the learning curriculum. I was able to see the value of these functional goals and incorporate them into the daily classroom programme, but I wondered how teachers without my occupational therapy background managed this?

Visitors to the classroom was an everyday occurrence and most were visiting for reasons not related to the learning curriculum. Some were there to assess the learner’s physical needs, review their progress or to update equipment, and would often also provide activities that they recommended be included into the learner’s daily

classroom programme. The therapists employed by the school (occupational, speech and language and physiotherapists) had weekly timetabled visits to the classroom, but they would also carry out impromptu visits at other times. I valued and encouraged these visits from the therapists as I considered them to be an important part of my classroom team. However, it was apparent to me that my previous experience and professional knowledge as an occupational therapist was key to helping me to manage these encounters. I was able to understand the medical/ therapeutic language and reflect this back to the therapists and the many other visiting specialists which included wheelchair therapists, public health nurses, dieticians, social workers, hearing and vision specialists. As the classroom teacher, I was expected to have an overview of all of my learners' medical conditions and needs. This could be quite challenging and the question that frequently came to my mind during these times was how do classroom teachers who do not have additional knowledge cope with these demands?

As I further reflected on and explored my experiences as a classroom teacher and an occupational therapist working in specialist schools, I became more intrigued by the commonalities of these two professional roles, particularly when working with learners who have PIMD. My experience of working closely with the occupational therapist when I was a classroom teacher, and vice versa working with the classroom teacher when I was an occupational therapist, highlighted some tensions at the boundaries of our practice. I was aware that these could reduce the effectiveness of our multi-agency working and at times may also have hindered the achievement of the joint goal of our activities which was positive outcomes for the learners. I also questioned if these two professions had their own understandings of what should be happening for learners with PIMD if they viewed them from within their own, singular professional lens. From my workplace discussions with classroom teachers and occupational therapists, it was apparent that they had a varied understanding of each other's role. They also sought to protect their own agendas within the framework of their own culture, which could often be reinforced by the specialist school environment in which they worked.

My perspective as a researcher is embedded in my own experiences, and it is from this viewpoint that the potential complexities of the relationship between the classroom teacher and occupational therapy participants were highlighted, as well as the potential constraints and supports to their multi-agency relationships and ways of

working. As identity, values and beliefs cannot be separated from the research process, it was imperative that data gathering was as objective as possible and based on sufficient engagement with the participants through the individual interviews and focus groups. This process was also supported by the use of AT as a conceptual framework for the study. I had no prior knowledge of AT but was drawn to it because of the focus on joint activities and the structure of the AT constructs of subject, object, tools/artefacts, rules, division of labour, community and outcomes which enabled me to gather data for this study in a more focussed way. The activity system model also provided an accessible and systematic process to explore the complexity of activity and reconceptualised any arising tensions or contradictions to be viewed positively for their potential to be drivers for learning and new enhanced ways of working. I know that this approach has had an ongoing impact on my own practice, and I also believe that of the classroom teachers and occupational therapists who were the participants in this study.

1.6 Overview of the structure of the thesis

This thesis is presented over eight chapters.

Chapter 2 considers the historical, organisational and cultural aspects which impact on how classroom teachers and occupational therapists work with learners who have PIMD in specialist schools in Aotearoa New Zealand. The three contextual AT constructs of community, rules and division of labour are used as headings throughout this chapter to group and illustrate these different contextual factors.

In chapter three, an overview of the concepts of boundary crossing and multi-agency practice are given. The competencies required to work effectively within a multi-agency framework are also explored and discussed in relation to current theory and research.

Chapter four sets out the conceptual framework of AT that has been used to guide the processes and meet the objectives of this study. The chapter begins with a historical overview of the development of the three generations of AT. The seven constructs of AT (subject, object, tools/artefacts, rules, division of labour, community and outcomes) are then unpacked and discussed to allow the reader to gain a better understanding of

how they were used to guide this study. The role of expansive learning in relation to the methodological framework is also explored and discussed.

Chapter Five outlines the study design, procedures and overarching ontological and epistemological stance. How knowledge was generated and the data analysis process for this study, including aspects of data preparation and the analytical framework used are also outlined. Due consideration is then given to issues of ethics and trustworthiness.

Chapter six reports on the contradictions manifested from the individual interviews with the classroom teacher and occupational therapy participants. The contradictions and data from the individual interviews are considered within the conceptual framework of AT and reported according to the concept of boundary crossing and the learning mechanisms that operate within it (Akkerman & Bakker, 2011; Engeström et al., 1995). The overarching tensions and contradictions arising from the individual interviews are then outlined and used to form the basis of the next phase of the data collection at the two subsequent focus groups.

Chapter seven reports on the conclusions from the two focus groups. The arising contradictions and ideas are reported within the framework of Akkerman and Bakker's (2011) learning mechanisms that operate in boundary crossing to explore the multi-agency learning that took place.

Chapter eight is the final chapter in the thesis and summarises the conclusions from this study in response to each of the research questions. A summary of the suggestions made by the participants for enhanced future ways of working is also given. The significance and contribution of this study is presented as well as implications for the future practice of classroom teachers and occupational therapists working in the field of specialist education with learners who have PIMD.

1.7 Chapter summary

This introductory chapter has provided a background and rationale for this study. The research questions have been articulated and the intent and focus of the study has been described. The importance of multi-agency working and learning and the specific

context of the participants who work with learners with PIMD in specialist schools in Aotearoa NZ has also been highlighted.

In accordance with the social-constructivist positioning of the researcher, the personal and professional experience brought to the study has been shared and acknowledged. The potential significance of the study to contribute to what is currently known about the multi-agency working and learning of classroom teachers and occupational therapists as they work across professional boundaries with learners who have PIMD in the specialist school setting has been highlighted. Finally, the structure of this thesis has been outlined.

Chapter 2 The cultural-historical context

2.1 Introducing the context

This research was carried out with occupational therapists and classroom teachers who worked with learners with PIMD in three specialist schools in urban Aotearoa New Zealand. Different professionals often have different conceptual understandings of their ways of working with learners. This study adopts a social constructivist stance which acknowledges that people make sense of their worlds in personal and complex ways, influenced by time, place and culture (Kim, 2014). In order to help clarify and understand the various factors and contextual complexities that impacted on the occupational therapists and classroom teachers as they worked together to achieve goals for their learners with PIMD, a need was identified for an overarching conceptual framework that could acknowledge and help make sense of this complex context.

Activity theory (AT) has been demonstrated as an effective educational contextual analysis research tool (Engeström, 1987) and was chosen as the conceptual framework for this study, to enable the complex interactions and relationship between the contextual influences on the classroom teachers and occupational therapists to be explored and analysed.

The key constructs of AT are the subjects, the occupational therapy and classroom teacher participants in the activities, who are motivated towards a purpose or the attainment of the object or goal. The subjects use tools to work towards the object of their activity which takes place within a community where several subjects act together within or between their activity systems. The community is characterised by a division of labour and rules or norms which influence how the subjects work together in their activities. The rules and tools within the activity systems are developed historically as the subjects experience them. Whether the outcome of an activity resembles the original object or goal, depends on these constructs and how they have been used (Engeström, 2014). AT is discussed further in Chapter Four.

The professional identities and practices of the classroom teachers and occupational therapists have the propensity to blur as they work in close professional proximity in this complex context. Engeström's concept of boundary crossing is a key tenet of the

third generation of AT and takes place as a result of the collaborative activity between the subjects in the activity systems where they work and learn together creating opportunities for boundary crossing as they share their knowledge and experiences to envision new ways of working (Akkerman & Bakker, 2011). Boundary crossing was therefore an important lens used in this study to explore the challenges to identity formation that take place at the boundaries of practice between the occupational therapy and classroom teacher participants.

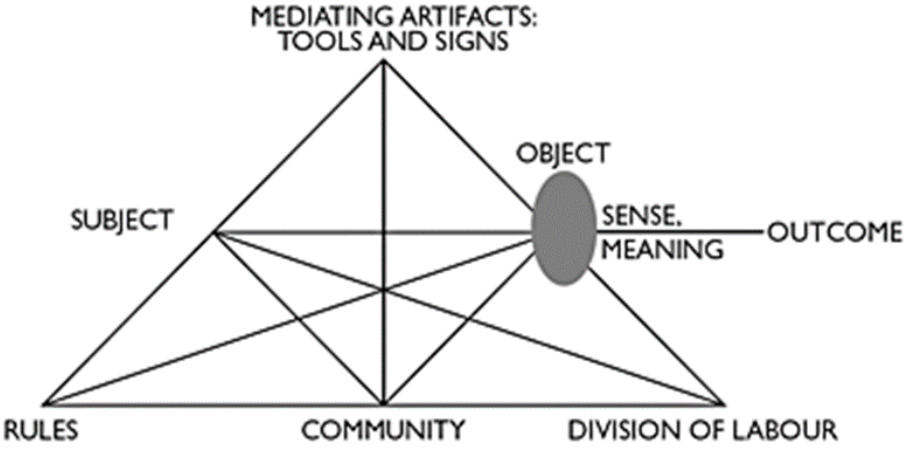
This chapter will outline the context of this study within the conceptual framework of AT, specifically the third generation of AT where the focus is joint activity between the subjects and their two interacting activity systems (Engeström, 2001). Boundary crossing has been highlighted as a key tenet of AT used in this study. Boundary crossing will be foregrounded in this chapter and the applications of boundary crossing will be discussed further in chapter three.

2.2 The importance of context

In the model of an activity system illustrated below in Figure 1. the uppermost triangle which includes the constructs of subject, tools and object is known as the action triangle. The context of these actions is represented by the lower end of the triangle which incorporates institutional level components in the constructs of rules, community and division of labour (Postholm & Vennebo, 2019).

Figure 1

Model of an activity system



From *Learning by expanding: An activity-theoretical approach to developmental research* by Y. Engeström, (p.63), 2015. Copyright 2015 by Cambridge University Press, reprinted with permission.

The three contextual constructs of community, rules and division of labour are used in the remaining sections of this chapter to illustrate the context of the activity systems of the occupational therapists and classroom teachers in this study. While AT emphasises the localised contextual setting of the activity systems, it is also important that potential sources of influence beyond the activity systems are considered (Quirk-Marku, 2019). Context cannot be understood as simply the external situation of the specific setting, artifacts and other people, because it is also aligned with the internal context of the individual subjects who have their own specific objects and goal. Context therefore includes whatever takes place in activity systems composed of object, actions, and operations (Nardi, 1996). Researchers are able to understand the cultural-historical influences of the context of the study by exploring the object of the activity systems which acts as a 'sense-maker' to help both the subjects and the researcher understand otherwise fragmented pieces of evidence (Kaptelinin, 2005). Although the object of an activity may not always be clear or articulated by the participants, their actions take place individually or collectively to achieve goals which are directed towards this object, and are shaped by the contextual practices in which the object of the activity are located (Edwards, 2011). These actions are comprised by operations, which are often the unconscious, routine actions using the tools available to them (Engeström 2015). In this study, the role of the classroom teachers and occupational therapy participants to work together to provide optimal outcomes for learners who have PIMD was identified as the object (or objective) of their activities.

2.3 Subjects and community: Classroom teachers and occupational therapists working with learners with PIMD in specialist schools

2.3.1 Classroom teachers

Classroom teachers are central to everything that happens in the classroom. They are responsible and accountable for co-ordinating the assessment, learning programmes and environment for the learners and act as the key point of contact for other members of the team. Ballard (2004) emphasises the need to focus on the teacher's role with learners who have disabilities as "it is a teacher whose professional role it is to teach and who has the professional responsibility to understand how to teach, so that all children may learn" (p. 320).

Teachers working in specialist schools come from a variety of different backgrounds and have different levels of education and experience. For example, some may have early childhood, primary or secondary school teaching qualifications or have additional postgraduate special education qualifications. This is a minority field of work with only 3% of the total New Zealand teaching population (2,134 of 71,729 teachers) in the 2020 teacher census stating that they worked in specialist schools (Ministry of Education, 2020). Within the field of specialist education, teaching learners with PIMD requires additional, specialised expertise in all areas of teaching as well as an understanding of childhood development, disability, psychology, sensory impairments and communication (Ayres et al., 2011; Norwich & Lewis, 2007; Salt, 2010). As well as these areas of expertise, the participants who contributed to the Salt review of UK educators working with learners with PIMD, highlighted the need for teachers to be able to manage a team and to work collaboratively with other team members and parents/carers, while having a clear focus on achievement for their learners (Salt, 2010).

Tertiary institutions offering initial teacher education receive very little guidance or standards on the information to include in relation to learners who have special and additional learning needs, instead supporting teachers to be inquiring professionals who make decisions for their own learning priorities and teaching strategies (Aitken et al., 2013; Ministry of Education, 2010). This means that most newly graduating teachers have had very little pre-service training in the area of specialist education and are challenged to independently develop and validate effective practices appropriate for learners, such as those who have PIMD, to ensure that their learning needs are met. Courtade et al. (2014) discussed the importance of basing teaching practice on evidence-based research for learners with severe intellectual disability (their chosen term to describe this group of learners) but identified that although this research existed there was less evidence that it was being used to inform teaching programmes and interventions, so had little effect on the achievement of learning outcomes for these learners. Some developments are being made, for example the Education Council of New Zealand have been working with initial teacher education providers and have published a strategy document (Education Council of New Zealand, 2016) which has as a key priority to build the professional learning of teachers and the

development of professional leadership. In this same document, the Education Council have also recognised that there is a significant shift in the work of teachers with a growing emphasis on collaborative working and the increasing demand for shared practice. More recently, the Ministry of Education's Learning Support Action Plan 2019-2025 (Ministry of Education, 2019) highlighted the importance of building teacher capability and the need for better guidance and training.

The Teaching Council of Aotearoa New Zealand is the professional body for teachers. It provides a code of professional responsibility and standards for the teaching profession which sets out a regulatory framework of what it means to be a teacher in Aotearoa New Zealand (Education Council of New Zealand, 2017). This framework applies to every teacher regardless of their teaching environment and requires that they meet the needs of all learners including those who have disabilities and learning support needs.

In Aotearoa New Zealand, the National Curriculum sets the direction for teaching and learning (Ministry of Education, 2007) and proposes that "learners' identities, languages, abilities, and talents are recognised and affirmed" and that their "learning needs are addressed" (p. 9). There is no specific guidance for teachers regarding how learners with PIMD in Aotearoa New Zealand can access the National Curriculum. However, it has been recognised in the literature of other countries that because the lack of diversity in curricula and programmes does not meet the needs of all learners, there is a need for teachers to adapt their pedagogies and curriculum to fit the learner with calls internationally, for separate and distinct pedagogies to be introduced for those with severe and profound learning difficulties (Imray & Hinchcliffe, 2012; Munde & Zentel, 2020; Rochford, 2016; Warnock et al., 2010). Carpenter et al. (2010) commenting on the UK context, also suggested that a one size fits all approach to teaching learners who have PIMD is naive and that teachers are finding themselves to be pedagogically bereft as their current teaching styles and curriculum frameworks are unable to adequately meet the learning needs of this group of learners.

Classroom teachers also have a key role in liaising with families and are required to work collaboratively with a wide range of professionals, including occupational therapists, in order to meet the diverse and often extensive needs of the learners with

PIMD (Hartas, 2004; Munde & Zentel, 2020; Salt, 2010; Westwood, 2009, 2018). A key value underpinning the Teaching Council of Aotearoa New Zealand's code of professional responsibility and standards for the teaching profession is whanaungatanga, which means engaging in positive and collaborative relationships with colleagues, learners, their families and the wider community (Education Council of New Zealand, 2017). In order to match the learning curriculum, environment, methods and materials to each learner's individual needs, the practice of whanaugatanga between classroom teachers and occupational therapists is undoubtedly an important requirement for their multi-agency relationship. A key attribute required by teachers to enable them to fulfil this role, is that they are confident in their own professional identity, role and responsibilities, and that these are understood both by themselves and by others.

2.3.2 Occupational therapists

Occupational therapists are an allied health profession, historically embedded within a health, medical and rehabilitation worldview (Creek et al., 2005; Crepeau et al., 2003; Hagedorn, 2001). Therapy is term most often used in the medical sense to mean treatment or intervention of some kind, likewise therapist implies a person who provides treatment or intervention. Occupational therapy distinguishes itself from other fields by analysing occupations and activities: looking at the person, their occupations and their environment.

Like the name suggests, occupational therapy is founded on the concept of occupation centred practice which can be defined as "the daily tasks and activities in which people engage, coupled with the meaning or personal, subjective value these tasks and activities provide" (Hinojosa et al., 2017, p. 28). The terms occupation and activity (often preceded with the word purposeful), have similar meanings and in some situations are used interchangeably. To help clarify these two terms, which are so significant within occupational therapy practice, Pierce (2001) writes that an important perspective for differentiating between them is subjectivity. Activities are general, descriptive categories whose meanings are culturally shared such as "going to school", whereas an occupation is the experience of a particular person who is in charge of the occupation's meaning, for example "I need to pack my bag to go to school". Despite the longevity and mass of literature on this topic, occupation and activity continue to

lack a clear definition and remain a subject of debate for occupational therapists which may contribute to uncertainty regarding professional focus and identity (Hinojosa et al., 2017; Pierce, 2001).

Occupational therapy is a relatively new profession which first emerged in America, Canada and the United Kingdom in the early 1900's with the first occupational therapist being recruited to work in Aotearoa New Zealand from the UK in 1940 (Wilson & Stablein, 2017). Shortly after this in 1949, a professional regulatory authority, the New Zealand Occupational Therapy Board was established. Occupational therapy is one of the twenty-two health professions governed by the Health Practitioners Competence Assurance Act (New Zealand Parliament, 2003) which is administered by the Ministry of Health and provides a framework for the regulation of all health practitioners in order to protect the public where there is a risk of harm from their professional practice. Occupational therapists are required to be registered and hold an annual practicing certificate from the Occupational Therapy Board of New Zealand (OTBNZ) which is a health regulatory authority ensuring that they meet the specifications of the HPCA. The Code of Ethics for Occupational Therapists (Occupational Therapy Board of New Zealand, 2015) contains three principles; relationship with those receiving occupational therapy services; relationship with society and potential clients and most relevant to the context of this research; relationship with colleagues and the profession. For example, in the third principle there is a requirement that occupational therapists acknowledge and respect other colleagues, professionals and peers and "use a collaborative approach to practice when working within (or referring to) a multi-professional team" (p.8).

Occupational therapy is a relatively small profession within Aotearoa New Zealand, the most recent data available states that there are 3,219 occupational therapists registered as holding a current annual practicing certificate, the mandatory requirement for practice (Occupational Therapy Board of New Zealand, 2021). It is difficult to determine exactly how many of these occupational therapists work in a school setting, employed by the Ministry of Education and funded as part of the approved specialist service component of ORS funding. Only 6% of the total number of occupational therapists registered reported that they were employed in education. However, the number working in specialist schools would be significantly less than

this, as in addition to being employed by schools the 6% would also include those working in the centralised Ministry of Education's Learning Support and in tertiary education. These percentages are significantly less than in the USA for example, where the school-based setting is a major work environment for occupational therapists and a recent workforce survey found that 19.9% of all occupational therapists were employed in schools (American Occupational Therapy Association, 2015).

The child or young person and their participation as a learner in the environment of a school is the focus of the school based occupational therapist, whose role can be defined as to "enable, support and promote full participation and well-being of school-aged students by supporting the strengths and finding solutions, reducing or removing learning activity limitations and participation restrictions" (Pattison, 2017, p. 3). Despite being present and working within schools for several decades, it is suggested that there is still a need for occupational therapists to better explain how their interventions relate to education (Bolton & Plattner, 2020; Royeen & Marsh, 1988). The lack of understanding of the occupational therapist's role within schools is often raised in the literature, frequently with recommendations that occupational therapists need to be able to clearly articulate their role in the school setting (For example, Benson et al., 2019; Bolton & Plattner, 2020; Case-Smith & Cable, 1996; Vaughan-Jones & Penman, 2004). The occupational therapist's role and ways of working in the specialist school is even more complex but is rarely specifically addressed in the literature.

Occupational therapy interventions in schools have been influenced by many different theoretical models and ways of working from both education and health. The types of service delivery used by occupational therapists in educational settings have historically been dependent on the structures in place at the time. Initially, this was a medically oriented model, brought from the therapist's conventional employment settings in health and were usually one-to-one, individual interventions aimed at curing or fixing the learner's deficits in performance components (Mu & Royeen, 2004; Vaughan-Jones & Penman, 2004). However, in more recent times, school based occupational therapists have moved away from one-to-one direct intervention towards a more consultative model, thought to be more beneficial and less restrictive

for learners and team members alike (Campbell et al., 2012; Case-Smith & Cable, 1996; Mu & Royeen, 2004).

Even though many different factors must be considered in the design and delivery of the educational programmes for learners who have PIMD the skills and knowledge of therapists such as occupational therapists are acknowledged as being critical to these programmes being effective (Dule et al., 1999).

> Advisers from other disciplines, with their specialist foci, can identify barriers to learning for a child that are invisible to generalist educators. They can advise on changes – sometimes very small – that will extend the educational possibilities for a child. They may suggest reading and professional contacts to support educators in meeting the child's needs, and will know the most effective routes to obtain specialist equipment (Carpenter et al., 2015, p. 99).

Given the scope and nature of their disabilities, people with PIMD often need intensive support for all aspects of their functional daily living. This is an established and recognised role of the occupational therapist however, this is also an area of practice where the occupational therapist must work across professional boundaries to share these activities with the classroom teacher who, when working with learners who have PIMD has similar functional assessments, goals and interventions. This has the potential to impact on the interface of the roles, identities and multi-agency relationships of the occupational therapist and classroom teacher as they work at and across these professional boundaries.

2.3.3 Learners with PIMD

The focus of this study was to explore the ways of working and learning of the classroom teachers and occupational therapists, therefore gathering the unique experiences and perspectives of the learners and families themselves was outwith the scope of the formal data collection. However, learners with PIMD and their families are obvious stakeholders in the activities of the occupational therapists and classroom teachers and are therefore an important part of the community and context for this study.

Working with learners with PIMD was the focus of practice that was explored by the classroom teacher and occupational therapy participants, who also identified that the

object of their activities was to support optimal outcomes for these learners. It is therefore important to this study to define this group. However, learners with PIMD are not a homogenous group and it can be difficult to find words to describe or define their very complex and individualised needs. Additionally, the language used to describe their needs is often deficit based as it generally describes the 'problems' of their disability (Bellamy et al., 2010; Imray, 2019).

Mansell (2010) defined people with PIMD as those who have a profound learning disability, have additional sensory disabilities, complex health needs and/or mental health or behavioural challenges; have great difficulty communicating and need high levels of support with most aspects of daily life. He also emphasised that it was important to be clear that the definition of PIMD does not include people who have disabilities or complex medical needs, without the associated profound intellectual impairment which the diagnostic criteria in the American Psychiatric Association's DSM-4 (based on IQ) determined as being less than an IQ of 20, and DSM-5 (classified on the basis of daily skills) designated as requiring 24 hour care (Boat et al., 2015).

The term Profound Multiple Learning Disabilities (PMLD) is the one most commonly used interchangeably with PIMD. The UK's PMLD network has produced the following definition:

> Children and adults with profound and multiple learning disabilities have more than one disability, the most significant of which is a profound learning disability. All people who have profound and multiple learning disabilities will have great difficulty communicating. Many people will have additional sensory or physical disabilities, complex health needs or mental health difficulties. The combination of these needs and/or the lack of the right support may also affect behaviour. Some other people, such as those with autism and Down's syndrome may also have profound and multiple learning disabilities. All children and adults with profound and multiple learning disabilities will need high levels of support with most aspects of daily life.
>
> (PMLD Network, 2017, p. 3)

Use of these terms or labels can in itself be controversial. Throughout history, there have been many, mostly unflattering, labels used to describe people who have disabilities. The language and terms used have changed for the better, although there remains an argument against using any type of label for fear of offence or discrimination. The use of descriptive labels can therefore be contentious and seen as

an example of 'bureaucratic language objectifying individuals in a process of medicalisation" (McClimens, 2007, p. 257). However, terminology can be important for service delivery and planning as the way in which a condition is conceptualised has a direct effect on how decisions are made and education and therapy programs are developed and funded. This has been identified by Norwich (2007) as the "dilemma of difference" where the learner can be recorded as having an identified need risking labelling and stigma or not recorded and risk losing additional support and resources. Imray (2019) suggested that the accurate labelling of learners with PIMD is particularly important in order to identify and establish "appropriate pedagogy, teachers pursuing a curriculum and class staff applying specific skills and expertise, that will allow learners to educationally do the best that they can do and be the best that they can be" (p.21).

It is acknowledged that there are controversies associated with using language and labels which may influence people's thinking about an individual, particularly when these emphasise the person's limitations. However, the reticence to refer to the significant and complex needs of learners with PIMD contributes to the lack of understanding of these needs and the role of those, such as classroom teachers and occupational therapists, to support them.

2.3.4 Family and home influences on the object

The families and carers of learners with PIMD are often the key spokespeople and advocates for them, and as such are an essential part of the team to share their needs and wishes in order to influence the way services are provided (Jansen et al., 2013; Kruithof et al., 2020).

The New Zealand Ministry of Education's Success for All document (Ministry of Education, 2018) states that it's three key foundations are the learner, their family and professionals. This document contains a section on what inclusive actions families should expect to experience, such as being able to understand the various services that are available, the right people to talk to and to ensure that they can have a say in what goes on for their child and their future. However, there has been feedback from families of learners with PIMD that they often feel overwhelmed and confused by the health and education system that they find themselves having to navigate. They often

find it difficult to deal with the many different professionals involved with their child and conflicting information and jargon relating to services adds to this confusion and was found to be unhelpful (Complex Care Group, n.d.). This perspective is backed by a study by Ryan and Quinlan (2018) where 24 parents shared their experiences of communication and collaboration with health and education staff working with their child with disabilities, in which parents noted the need for improved multi-agency practice between parents and professionals. The parents also commented that they experienced a divide between health and education professionals and the subsequent lack of collaboration between them, which could impact on service provision and which some parents attributed to power struggles.

There has been criticism of the service provided by professionals in general to this group of learners and their families, highlighting their perceived lack of continuity and coordination, as well as insensitive and ill-timed approaches (Mengoni et al., 2015; Ryan & Quinlan, 2018). It has been suggested that new patterns of working are required where "skilled professionals will no longer become concerned solely with their own disciplinary boundaries, but with their capabilities as empathetic human beings and their disciplinary skill base in order to enhance the lives of the families that they support" (Carpenter, 2000, p. 141).

There are several parent and carer groups in Aotearoa New Zealand which provide support to families and carers to enable them to advocate for their child. As well as supporting families, these organisations also provide information and promote multi-agency practice by acting as a point of contact for professionals working with children and young people who have a disability. Examples of these are Disability Connect (formerly The Parent & Family Resource Centre Inc.) an umbrella organisation to support families raising a child with a disability, and the Complex Care Group which is a support and information network run by carers who look after young people with high and complex needs such as PIMD.

2.3.5 The wider community around the learner

Classroom teachers and occupational therapists work alongside many others to meet the needs of learners with PIMD, for example, physiotherapists, speech and language therapists, psychologists, resource teachers for hearing and visual impairments,

nurses, dieticians and social workers as well as the learners' families and carers. Because the majority of learners with PIMD in Aotearoa New Zealand attend a specialist school, most of these visiting specialists are based on-site at the school and are frequent visitors to the classroom. The large number of people visiting the classroom and the many different goals and activities that they recommend be included in the classroom programme can be very difficult and stressful for classroom teachers to manage, adding significantly to the challenges faced by all team members in their attempt to work collaboratively.

2.4 Rules that support or constrain practice

The AT construct of rules refers to the regulations, norms and conventions that support or constrain the actions and interactions within and between the activity systems of the subjects. This section considers the key internal and external policies and processes that impact on the professional roles and identities of the classroom teachers and occupational therapists in the specific context of their work with learners with PIMD in specialist schools in Aotearoa New Zealand.

2.4.1 Health legislation and policy

Occupational therapy is a profession founded in the health domain. Occupational therapists and classroom teachers work together with learners who have PIMD who are known to have significant health needs and many health providers involved in their care, both within and out with the school setting. It is therefore appropriate to explore the impacts of health-specific legislation on the work and multi-agency relationships of occupational therapists and classroom teachers, even though this study is situated in an education setting.

The Ministry of Health is responsible for implementing and supporting others to apply many of the actions in the New Zealand Health Strategy (Ministry of Health, 2016), which also recognises the wider context and the connections between health and other aspects of people's lives, such as education. The Health Strategy is underpinned by eight guiding principles which reflect the values of New Zealanders and their expectations of the health system. Two of the eight guiding principles relate specifically to people working together and are aligned to this research topic. These are "active partnership with people and communities at all levels" and "thinking

beyond narrow definitions of health and collaborating with others to achieve wellbeing" (Ministry of Health, 2016).

The Māori Health Strategy: He Korowai Oranga has an overarching aim of Pae Ora (healthy futures). This strategy is also relevant to this research as it encourages everyone in the health and disability sector to work collaboratively, to think beyond narrow definitions of health and to provide high quality and effective services to all (Ministry of Health, 2014). One of the Health Strategy's five strategic themes is Kotahi te tīma (one team) which speaks specifically to this study, as it stipulates the need for an integrated and cohesive system that puts people and their families at the centre of all interventions. When discussing this requirement, the document makes the important observation that this "will only be possible when people within the system have a clear view of their own roles, responsibilities and accountabilities" (Ministry of Health, 2014, p. 18).

The New Zealand Health Strategy also provides direction for providing health services for people with disabilities and requires that there be a strategy for disability support services. This is contained in The New Zealand Disability Strategy (Ministry of Social Development, 2016) which guides the work of all government agencies on disability issues through to 2026.

2.4.2 Education legislation and policy

It is difficult to comprehend that before 1989, children with disabilities did not have a right to access state funded education in Aotearoa New Zealand. It was only when the Education Act of 1989 was passed that it was asserted that all learners (including those with disabilities) had equal rights to access an education at their local school. However, Clause 9 of this Act also allowed for parents to choose to enrol their child who had special educational needs in an alternate facility. This meant that specialist schools and units were retained.

Aotearoa New Zealand reportedly has one of the most inclusive education systems in the world with less than 1% of learners (3875 out of 826,447) who attend specialist schools, or specialist satellite classes situated within regular schools (Hornby, 2012; Ministry of Education, 2020). In New Zealand and throughout the world, learners with PIMD are generally within the 1% who attend specialist schools (Agran et al., 2020;

Kleinert, 2020). Enrolment in a specialist school is often a long, thought out process informed by the large team working with the learner and their family (McMenamin, 2011). Parents and carers should be integral to all decisions about where their child with PIMD will attend school. Some choose to send their child to a specialist school to ensure access to therapy and other specialist services which are often more readily available in these facilities (Clegg et al., 2008).

However, many parents and carers of learners with PIMD have restricted choice of where their child can attend due to the funding, resourcing and availability of education services to meet their needs. In terms of total population, learners with PIMD are small in number and are often forgotten or only considered as an afterthought in terms of educational policy and planning (Carpenter et al., 2015; Colley, 2020). This may be because they generally attend a specialist school rather than a regular school, and because of their high and complex needs are most commonly based at the main specialist school site rather than in a satellite class attached to a regular school. They are therefore often invisible to the educational majority resulting in their "bureaucratic absence of presence" from the decision making process (Swenson, 2020, p. 51).

Today, all schools in Aotearoa New Zealand are required to be inclusive under the Education and Training Act 2020, reinforced by the New Zealand Disability Strategy. However, specialist schools remain very much part of the continuum of provision which raises some questions about whether there is a discord between the rhetoric and the reality of the goal for inclusive education (McMenamin, 2011; Selvaraj, 2016; Vandercook et al., 2020; Westwood, 2018).

Inclusive education is one of the guiding principles of the New Zealand Curriculum (Ministry of Education, 2007). The Ministry of Education no longer uses the phrase 'special education' in any of their documentation. Instead, the term 'learning support' is used, and it is emphasised that this learning support is provided in the context of inclusive education to provide the additional support to enable learners to engage and achieve in education (Ministry of Education, 2017). This linguistical change came with the introduction to Parliament of the Education (Update) Amendment Bill (New Zealand Parliament, 2016) when the formal renaming of the special education sector

to ‘learning support’ for inclusive education took place. These new terms were introduced in response to some concerns noted regarding the Ministry’s continued use of special needs language (MacArthur & Rutherford, 2016). A press release from the Ministry expanded on their reasons for this change stating, “in supporting all learners we're leaving behind terms like special education and special needs, which can accentuate difference and act as a barrier” (Ministry of Education, 2016). The use of language is obviously still a concern as more recently, the Ministry of Education acknowledged that they removed the word disability from the title of their Learning Support Action Plan 2019-2025 but stated that they “were interested in working with others to identify the language we should use to describe the system we want to have in a way that encourages new approaches” (Ministry of Education, 2019, p. 4) . In this document the Ministry also emphasised that they were continuing to build a fully inclusive education system where all children could progress and achieve to their very best at whichever school they attended and declared one of the key initiatives was to take a more strategic and planned approach to the overall network of education provision including specialist schools and satellite units.

Despite the shift in semantics, the policies and frameworks for special education within Aotearoa New Zealand still exist, underpinned by the policy Special Education 2000 (Ministry of Education, 1996) which was progressively implemented from 1996 to 2000. This policy provides specific individualised funding options known as the Ongoing Resourcing Scheme (ORS) to meet the cost of providing specialist assistance to support the additional needs of learners with significant physical, intellectual, sensory or communication impairments. Resources for learners who have ORS funding include specialists, such as occupational therapists, specialist teachers, teacher aides, and a grant for consumables. Learners with PIMD generally meet the criteria to be verified by the New Zealand Ministry of Education as requiring ORS funding, and due to their significant physical and complex disabilities are usually verified as having Very High Needs and requiring the highest level of funding available.

2.4.3 The Aotearoa New Zealand context

The population of Aotearoa New Zealand is currently around 5 million people (www.stats.govt.nz). Information from the New Zealand Government’s Education Counts website (www.educationcounts.govt.nz) tells us that in July 2020, 826,347

young people were attending school. Of these school students, 10,160 were identified as having significant additional learning needs and verified for funding under the Ministry of Education's Ongoing Resourcing Scheme (ORS). This represents approximately 1.2% of the total school-aged population in Aotearoa New Zealand, which is in line with the Ministry of Education's target that ORS will provide specialist services and support for learners with only the very highest additional learning needs (Education Counts, 2018). The application process for this support package is long and rigorous, and students have to meet one or more of the nine eligibility criteria. Once a student has ORS funding this support stays with them throughout their time at school, which can be up to the year they are 21 years old. Of the 10,160 school students who are ORS verified, 2,563 (roughly a quarter of the 1.2% of students who are ORS funded) were funded at the very high needs (VHN) category of ORS. This higher resourced category is generally where the learners with PIMD sit.

There are five categories of VHN ORS funding allocation. Information supplied by the NZ Ministry of Education (Personal communication June 6th, 2021) showed that the 2,563 students verified as VHN ORS were distributed across these categories as follows.

Table 1

Distribution of school students verified VHN ORS

VHN ORS Category	Number of students verified in this category as of June 2021 Total = 2563
Hearing or Vision	239
Learning	849
Language Use and Appropriate social communication	1018
Physical (help with mobility and positioning, or with personal care)	328
Multiple Needs	129

There are no specific data available on the number of learners who have PIMD, as there is no single ORS reporting category that they would automatically fit into. However, it can be seen that learners in this VHN ORS category make up a very small 0.003% proportion of the total population of school students, and those with PIMD

would be an even smaller group who have very high needs for education, care and support. Likewise there are no data about where these learners attend school. However, given their known high and complex needs, it is logical to assume that they are among the 1392 ORS verified learners (out of the total 2563) who attend a specialist school.

Although there are no reliable data on the true number of people, or school aged learners with PIMD in Aotearoa New Zealand, it can be deduced that the numbers are small and relate to those found in other countries where the prevalence of children with PIMD is estimated to be between 0.4 and 1.3 % (Petigas & Newman, 2021). This is thought to be a group whose numbers are rising, mostly due to advances in medical treatments and more learners with PIMD are being diagnosed with complex, co-existing conditions that present new challenges and profiles of learning, resulting in this area of practice being described as a "21st century frontier for education" (Carpenter, Cockbill, Egerton, & English, 2010, p. 3).

2.4.4 Perspectives on inclusive versus specialist education

This study is situated in specialist schools because that is where the majority of learners with PIMD attend school. However, understanding perspectives on inclusive education are important to this study because they impact on the education of learners with PIMD in Aotearoa New Zealand and also illustrate the "democratic deficits in educational and policy-making processes in general" (Norwich, 2019, p. 1).The explicit and implicit conventions arising from perspectives on inclusive education also exemplify the AT construct of the 'rules' which support or constrain the activities and professional relationships of the classroom teachers and occupational therapy participants in this study.

Inclusive education aims to provide meaningful access to education for all learners and can be defined as "a multi-dimensional concept that includes the celebration and valuing of difference and diversity, consideration of human rights, social justice and equity issues, as well as of a social model of disability and a socio-political model of education" (Hornby, 2015, p. 234).

Inclusive education has had a significant impact on policy, research and practice internationally. Although the development of inclusive practice has been uneven,

inclusive education theories have challenged traditional systems of specialist education (Florian, 2019). Some advocates of full, authentic inclusion contest that segregated placement in specialist schools or units is wrong because a key goal of education should be to fully include children in the community in which they live, attending a regular school and receiving additional support as required (Agran et al., 2020; Slee, 2011). However, it has also been acknowledged that specialist schools exist and may even "represent a valuable resource for the development of inclusive schools" (UNESCO, 1994, p. 12) although maintaining the ultimate aim that all learners with disabilities could and should attend their local school.

There is ongoing debate about the moral rights of learners to be able to access an education suited to their needs rather than one that fits inclusion policies (Hornby, 2015; Warnock et al., 2010). Although at a pragmatic level it is naive to think that any school could cater for all learners, no matter their needs (Hornby, 2012; Imray & Hinchcliffe, 2012; Slee, 2004), the option of specialist schools continues to have an awkward existence where the inclusive education policies state that all school learners are entitled and expected to attend regular schools (McMenamin, 2011). This is a much-debated topic in Aotearoa New Zealand as well as internationally, with most countries in the developed world now advocating for full inclusion where schools are able to meet the needs of learners across a very wide range of abilities, from giftedness to intellectual impairment (Konza, 2008; Terzi, 2014; Westwood, 2018). The term responsible inclusion (Hatlen, 2017) is sometimes used to highlight the importance of allowing for different educational settings to be part of a "just provision for children with disability and difficulties" (Terzi, 2014, p. 490). This seems to be the position adopted by most developed countries; and few if any, have attempted full inclusion and the abolition of specialist education facilities, with most generally emphasising a policy of inclusion for the majority of learners, while recognising the need for access to specialist education for those who require it. Governments' mission statements may espouse high expectations and a focus on equity and excellence for all learners, however, there is often a disconnect between the vision and the actual educational systems and practices that are in place to educate learners with profound and complex disabilities (Vandercook et al., 2020).

Although the drive to make education more inclusive and equitable remains, as recently noted by (Ainscow, 2020) “the field remains confused as to the actions needed in order to move policy and practice forward” (p.7). This is certainly true when it relates to learners who have more profound disabilities such as those with PIMD who are rarely considered in discussions on inclusion and the continuum of placement from regular to specialist schools. This has led to some, such as Kauffman and Hallahan (2005) to speak about the ‘illusion of full inclusion’. Agran et al. (2020) also noted that the educational separation of learners who have the most significant disabilities such as those with PIMD, is an ongoing challenge with very little progress made. This is in contrast to the provision for learners who have mild to moderate intellectual and physical disabilities and are more widely accepted into regular school settings.

There has been some acknowledgement of the diversity of need between learners, with the recognition that “the nature of a student’s disability or difficulty clearly influences the outcomes from inclusion, and some disabilities are more easily accommodated than others” (Westwood, 2018, p. 6). In the past, inclusive education was thought to only be about including learners with disabilities within general education settings, however it is now more broadly considered to be a general principle that supports and welcomes diversity amongst all learners (Ainscow, 2020).

Learners with PIMD have very high needs which pose many challenges for educators, parents and policymakers, particularly in the context of the national and international movement towards inclusive education where the continued presence of specialist schools is only just tolerated. However some, like Imray and Hinchcliffe (2012) are hopeful that “the concept of a fully inclusive education system need not be shelved, providing we are open about how that might be achieved, including the adoption of distinct pedagogies for pupils with severe learning difficulties and profound and multiple learning difficulties” (p. 156).

2.5 Division of labour

2.5.1 Health vs education of learners with PIMD in specialist schools

It has been established that learners with PIMD form a small group who have high and complex educational, health and care needs which require ongoing support. Disability, such as that experienced by learners with PIMD is a multidimensional and complex

concept. Understanding the different models of disability can help practitioners working in schools to explore the socially constructed and contextualised nature of disability, what it means, and to provide a framework to plan for how these needs can be met.

The medical model and the social model are the two main discourses of disability that influence practice in schools at a wider, policy level and at an individual, practice level. The medical model views disability as being within the individual, therefore treatment must come from an external source, such as a doctor or therapist (Shyman, 2016), so that the person may be "treated, changed, improved or made more normal" (Mason & Rieser, 1992, p. 13). The social model of disability was developed in response to the deficit-based medical model, inspired by the activism of the civil rights and disability movement in the 1960s and the 1970s. The social model of disability contrasts with the medical model by reconceptualising disability as a social issue instead of a personal issue, emphasising that although a person may have an impairment, it is societal barriers that causes disability (Beaudry, 2016; Dirth & Branscombe, 2017).

The New Zealand Disability Strategy (Ministry of Social Development, 2016) sees disability as resulting from environments that are designed to meet the needs and wishes of the non-disabled majority which may, therefore, exclude the disabled (Ballard, 2004; Dalziel, 2001). Disability and impairment in Aotearoa New Zealand are therefore defined within a framework of the social model of disability.

> Disability is something that happens when people with impairments face barriers in society; it is society that disables us, not our impairments, this is the thing all disabled people have in common. It is something that happens when the world we live in has been designed by people who assume that everyone is the same. That is why a non-disabling society is core to the vision of this Strategy.
>
> (Ministry of Social Development, 2016 p.12).

In a review of international trends in the education of learners with special educational needs, Mitchell (2010) examined the three most dominant models or paradigms of disability in education. These were firstly the psycho-medical paradigm (aligned to the medical model of disability) which focuses on the assumption that deficits are located within individual learners; secondly the socio-political paradigm (aligned to the social model of disability), which focuses on structural inequalities at the macro-social level

and reproduced at the institutional level, and lastly the organisational paradigm where special education is considered to be the consequence of inadequacies in regular schools. Mitchell concluded that while most countries use a range of these paradigms in their educational provisions for learners with special needs, the dominant paradigm continues to be the psycho-medical model, even though other paradigms have gained more prominence in recent years.

The social or socio-political model of disability resonates with inclusive education as well as inclusion in society as they both encourage the acceptance of all individuals, regardless of impairments (Terzi, 2014). Conversely, it also suggests that segregated education in specialist schools or units must be dominated by a psycho-medical paradigm aligned to the medical model of disability, focusing on the assumption that deficits are located within individual learners rather than in the school system itself (Naraian & Schlessinger, 2017). However, social models of disability have been criticised for over-socialising the phenomenon of disability and undermining the actual lived impairments experienced by people and the "important dimensions of disabled people's lives" (Beaudry, 2016, p. 212). Reindal (2008) also argued that whilst the social model of disability criticised specialist education for preserving and framing disability within the medical model, it has also unintentionally placed it in a state of crisis resulting in "the embarrassment of talking about categories and levels of functional difficulty; as well as diagnoses, all of which enable individual assessments necessary for building the IEPs (Individual Educational Plans) and child-centred teaching within special needs education" (p135).

Gallagher et al. (2014) respond to the disagreements between those who support the medical model of disability and those who endorse its alternatives as being "the distinction between biological differences and the social meaning of those differences" (p.1128). In an attempt to realign the social and medical models of disability Bøttcher and Dammeyer (2016) suggested that a cultural-historical model of disability would provide a more interactional understanding and could be used as a platform to support the education of learners with complex needs such as those with PIMD. This model cites Vygotsky's (1993) approach where a child's development is conceptualised as being situated in concrete historical and cultural practices and the developmental incongruence that can take place when there is a potential mismatch between a

learner's impairment and the proposed learning activities (Bøttcher & Dammeyer, 2016; Gallagher et al., 2014; Rees, 2017).

2.5.2 Tensions in the ways of working between teachers and occupational therapists

Many factors impact on how classroom teachers and occupational therapists work together towards the object of their activities, build professional identity relationships and enact their multi-agency working and learning. The values that they hold may be very different and lead them to work in accordance with their own beliefs, conceptions and manifestations of themselves. There may also be a mismatch between individual perceptions of what each other's roles can offer and what the objects of their activities are (D'Amour et al., 2005; Eteläpelto et al., 2013).

As the key person managing the learner's educational programme, it is important that classroom teachers understand the occupational therapist's role. However, as highlighted earlier in this chapter, the professional ambiguity experienced within occupational therapy in specialist education means that it is not surprising that teachers are also sometimes uncertain of the role. A study took place with 263 teachers working in specialist schools in Hong Kong to explore their knowledge and perception of the occupational therapist's role in their school, with the results showing that this was generally poor. The teachers' lack of knowledge and understanding of the occupational therapists role was attributed to constraints such as limited contact between teachers and occupational therapists, professional ambiguity about the occupational therapists role, and poor promotion of their services by the occupational therapists themselves (Chow & Chung, 1996). Although this study was undertaken more than twenty years ago, more recent studies concur that there is often an unclear perception of the occupational therapy role in schools by teachers, other colleagues and parents. For example, a study by Majasic et al. (2015) in the US also surveyed teachers and found similar results where they expressed a desire for a more proactive approach to consultation and role clarification, also indicating their view that occupational therapists needed to develop a greater awareness of the needs of the educational system. On a positive note, this study also found that as collaborative behaviours increased, the teachers' perceptions of the occupational therapist's

contributions and their understanding of the occupational therapist's role also greatly improved.

The classroom is the domain of the classroom teacher, who interacts with the other team members who work with the learners, such as the occupational therapist. This is therefore one of the most important professional associations which needs to be sustained in order to facilitate the successful integration of occupational therapy into the classroom and to achieve the best outcome for learners. Vlaskamp and Nakken (1999) highlighted the importance of this relationship in their recommendations that therapists and teachers needed to be more open about their work and to adopt reciprocal monitoring, to ensure that the most appropriate and best quality interventions were taking place for individuals with PIMD.

2.5.3 Issues of professionalism and identity

What it means to be a professional and the way that professionals view the role, identity and status of both themselves and others is not an easy concept to describe. In an attempt to define the professionalism of teachers, Demirkasımoğlu (2010) concluded that professionalism and the status of teaching are dynamic and that they are so dependent on political and social changes, that it is difficult to attain a consensus on what the term means. She cited Whitty's (2000) recommendation that teacher professionalism be viewed as having competing versions rather than seeking any one as an "essentialist definition of professionalism" (p.2050). Likewise, in their literature review to conceptualise professionalism in occupational therapy, Hordichuk et al. (2015) agreed that professionalism was "dynamic, continuous and ever changing" (p. 152) and recommended that the acceptance of professionalism as being multifaceted and multi-cultural was essential in order to conceptualise how it applied specifically to occupational therapy.

Use of the term professional usually invokes the expectations that the person holding this title is autonomous, self-directing, and embodies trustworthiness through adherence to ethics and knowledgeable skill, taking into account how this was learned, and how, and in which context it is used (Bossers et al., 1999; Eraut, 2002). Being able to make informed decisions based on an analysis of the issue at hand also seems to be

a particular requirement for professionals, as they are “not usually engaged in rigid and predictable work practices where routines dominate” (Edwards et al., 2009, p. 21).

The status of professions, such as teaching and occupational therapy, are commonly considered in terms of trust, financial reward and professional autonomy (Hargreaves et al., 2007). Governments can also therefore contribute to the decline in the status of professions by reducing their autonomy, for example by having increasingly centralised control over the parameters in which they work, or by having low pay (Pearson & Moomaw, 2005). This can also lead to a potential decline in less suitably qualified candidates being attracted to such careers (Masters, 2015).

As occupations that have a shared knowledge base, a clear status in society, and a commitment to providing a service, the professionalism and status of classroom teachers and occupational therapists can be undermined by describing these roles as a calling or a vocation, implying that it is a natural gift, rather than the advancement of professional knowledge and skill that has to be studied and crafted (Abbott, 1981; Madero, 2020).

The ability to construct a professional identity is necessary because it speaks to how individuals view their own uniqueness as a professional in the context of the activities they carry out and is also known to be an influential factor in their personal development and overall job satisfaction (Billot, 2010; Danielewicz, 2001; Olsen, 2015). Professional identity is impacted by and impacts on practice, so the construction of professional identity continues to build throughout a person’s career and is known to develop and be sustained through experiences of negotiation and social interactions with others (Wenger, 1999). Therefore, in order to better understand teachers’ and occupational therapists’ perceptions of their professional identity, it is important to also understand their professional roles in the particular social and historical context in which they work.

Rodgers and Scott (2008) outlined four assumptions relating to conceptions of teacher identity: firstly that it is influenced by and formed within multiple social, cultural, political, and historical contexts; secondly that it is formed through relationships and involves emotions; the third assumption was that identity is constantly shifting, and therefore unstable; and finally that it involves the construction and reconstruction of

the meaning of stories told over time. The key message in these assumptions was for teachers to "work towards an awareness of their identity and the contexts, relationships, and emotions that shape them, and (re)claim the authority of their own voice" (p. 733), in essence encouraging them to make a psychological shift in how they considered their professional identity as teachers.

Shared identities are also important. For example, in a study of teachers working with learners with PIMD, Jones (2004) used a sociological paradigm to explore challenges to professional identity, and found that the teachers' key relationships and shared identities were with their teaching colleagues who worked in the same specialist field rather than those working in regular education. This strong shared professional and social identity as specialist PIMD teachers supported the cohesion of their group, but also emphasised their difference and presented challenges to their ability to identify as a 'regular' teacher.

The professional identity of occupational therapists is also recognised as a problematic issue, with a lack of clarity around their professional role which may lead to a perceived low status for their profession and difficulty maintaining a professional identity, particularly when in multidisciplinary teams (Lauckner et al., 2007; Moir et al., 2021; Molineux, 2011; Turner & Knight, 2015; Wilding & Whiteford, 2007, 2008, 2009). In their literature review Turner and Knight (2015) found that the most common reasons for difficulties with professional identity cited by occupational therapists was the tensions that they experienced between the medical, social and occupational discourses on health, with the dominance of the health and social care perspectives leading to a perceived lack of professional status and credibility of the less prominent occupational perspective.

Professionals are expected to strive to reinforce the collective meanings of their practice and to construct a professional identity for themselves as part of their professional community, with recognition of the particular skills, relationships and identities required to achieve the requirements of their role (Grossman et al., 2009; Shulman, 1998). However, it has also been suggested that new, multi-agency ways of working and learning may have impacted on the way professionals view their own, and other roles and that these "fluid, collaborative and distributed working practices have

destabilised traditional professional roles, identities and values" (Daniels et al., 2007, p. 532). This in turn requires them to work at the boundaries of their practice in order to address the tensions and challenges to their own, and each other's professional roles, values and identity.

2.6 Chapter summary

The work context of the occupational therapy and classroom teacher participants in this study as the subjects of their respective activity systems is complex. It encompasses not just the immediate classroom or specialist school environment where they work with learners with PIMD, but also wider social and political contexts which influence their practice. This chapter has provided an overview of these contextual influences according to the AT constructs of rules, community and division of labour. The following chapter will explore the key concepts of boundary crossing and multi-agency working and learning in response to the tensions experienced by classroom teachers and occupational therapists as they work and learn together in their professional roles working with learners with PIMD in specialist schools in Aotearoa New Zealand.

Chapter 3 Boundary crossing within multi-agency working and learning

3.1 Introduction

The ability of classroom teachers and occupational therapists to work and learn together is a required critical competence. This is particularly true when they work in specialist schools with learners with PIMD where their activities call for "qualitatively different forms of multi-agency practice, in which providers operate across traditional service and team boundaries" (Daniels, 2013, p. 109). This chapter will focus on the importance of boundary crossing and multi-agency working and learning in this complex work setting. The concepts and rationale of boundary crossing, agency and multi-agency working and learning will be explored including some of the organisational and cultural factors which facilitate or act as barriers to these practices.

3.2 Boundary Crossing

Boundary crossing is aligned to the third generation of AT (Engeström, 2009) which is discussed further in the following chapter, and to situated learning theory (Lave & Wenger, 1991). Both theories emphasise the importance of the potential for learning at the boundaries of practice.

Boundaries are created by professionals' routines, cultures and historical work practices (Akkerman & Bakker, 2011). In this study, a boundary is defined as a tension or challenge experienced by the participants when different areas of their practice meet or interact. Boundaries therefore surface socio-cultural rather than physical barriers between people and their practices. For example, occupational therapists may experience boundary crossing when they find themselves working in the less familiar environment of a school rather than a rehabilitation or medical setting whereas classroom teachers may experience boundary crossing when working in unfamiliar situations such as providing medical or care activities for learners. Knowledge may also be perceived as a boundary, for example when there is an intersection of different types of explicit or implicit knowledge within the shared practice of the classroom teachers and occupational therapists (Yeo, 2020). Despite these definitions,

boundaries are never static but are known to change depending on the context, so cannot totally be defined.

When people are working together, boundaries may exist without consideration of the other person's perspective adversely impacting on their multi-agency working and learning. Whereas when boundaries are made explicit and the other person's perspective is acknowledged or even integrated, multi-agency and joint working are enhanced and new, transformative ways of working outcomes are made possible (Akkerman, 2011).

Many studies have identified boundaries as being as powerful places for learning (Akkerman & Bakker, 2011). Those studies using the theoretical perspective of boundary crossing often focus on multi-agency collaborations where the participants acknowledge, negotiate and integrate elements from different perspectives. Positive observations have been made that when people are required to respond to the challenges presented at the boundaries of their practices, it can provide deeper insight into their learning. Boundary crossing therefore is viewed as an aspect of the learning process and has been identified as a way to create the greatest potential to facilitate dialogue and resources for learning (Akkerman & Bakker, 2011; Engeström et al., 1995; Wenger, 1999)

The researcher was unable to locate any New Zealand based studies relating to boundary crossing. However, in a recent Australian study Garner et al. (2021) used a boundary crossing lens to explore how educators from early childhood centres and schools were able to engage in boundary crossing at the intersection of their practices when participating in professional learning workshops on effective transition processes for children between their services. The findings of this study were based upon the outcomes of responses to two qualitative questions within an online questionnaire completed by the participants at the conclusion of the workshops. This followed on from a previous study by the authors which drew on pre-workshop participant data which identified what the teachers perceived as being the most significant challenge in the transition to school process. The findings from the post workshop data indicated a greater evidence of boundary crossing for those participants who attended the face-to-face workshops than those who did not, and it was surmised that in this setting they

could engage in reciprocal conversations that necessitated boundary crossing in order to understand the professional life of each other. In Garner et al's study, the professional learning workshops were identified as being the boundary object with which teachers from across both sectors could identify, this caused me to reflect on the purpose and scope of the focus groups used in this study and to view the data gathered from them with a boundary crossing lens.

Some authors have raised concerns regarding boundary crossing as role blurring, for example, Brown et al. (2000) recognised that role blurring, and the erosion of traditional professional practices was an important step for practitioners but warned of "creeping genericism" where collaborative work settings may lead to challenges to professional identity. In their discussion of the findings from a 3-year research project which looked at both the process and impact of multi-agency working on families with a disabled child with complex health care, Abbott et al. (2005) also noted that even in services where teams were working in very collaborative ways, non-health professionals (in their example social workers) could sometimes feel marginalised by colleagues who had a medical background. They cited Revans (2003) who acknowledged that the blurring of professional boundaries was synonymous with joint working between health and social services, but that this also could lead to the erosion of the autonomy of social workers and their social model of care as they became more heavily influenced by those with a different, medical approach.

Boundaries are flexible and dynamic constructs where understandings are negotiated and any barriers to collaborative practice are identified. Boundary crossing is important to this study, because it is at the boundaries of practice where contradictions between the activity systems of the occupational therapists and classroom teachers in this study are raised and the potential for learning is realised (Akkerman & Bakker, 2011; Daniels et al., 2010).

3.2.1 Learning mechanisms of boundary crossing

In their review of 181 studies pertaining to boundaries and boundary crossing in the context of education, Akkerman and Bakker (2011) identified four learning mechanisms that operate in boundary crossing to set the processes of learning into motion. The first learning mechanism is *identification*, which involves the discovery of

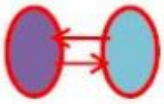
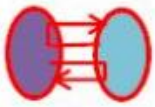
different perspectives and diversity in relation to each other, for example by questioning their own and others' core identities and practices (Akkerman & Bruining, 2016). This process enables boundaries between the different worlds to become more prominent, and can create a better understanding of their own and other's perspectives and to begin to overcome boundaries which can lead to movement between different practices, although the characteristics of the particular activity systems remain unchanged (Schenke et al., 2017). Othering and legitimising coexistence are two processes evident in identification. Othering delineates and emphasises differences allowing a person to define their practice in the light of another, whereas legitimising coexistence considers "the interference between multiple types of participation when working simultaneously in different organisational groups" (Veltman et al., 2019, p. 138). The second learning mechanism is *coordination*, which looks at the creation of cooperative and routine exchanges between people and their practices. For example, how they communicate with each other and exchange information. *Reflection* is the third learning mechanism which focuses on how people reflect on their own and other's roles and are then able to expand on perspective making and taking. This can result in an openness to take up others' perspectives and to look at one's own practice, leading to new understandings of their own and others' activity systems. The fourth learning mechanism is *transformation,* where collaboration and joint working at the boundaries of practice creates the potential for the creation of new knowledge and transformative changes in the activities of the subjects and their activity systems. A characteristic of the transformation learning mechanism is the raising of contradictions with a particular question or issue, and a recognition that this concerns "a shared problem space, a hybridization of perspectives and sometimes also activities, and a crystallization of new ideas" (Akkerman & Bruining, 2016, p. 245).

A study in the Netherlands by Gulikers and Oonk (2019) adopted Akkerman and Bakker's boundary crossing framework, and its four learning mechanisms to explore how it could be used to analyse, stimulate and value what their participants (students learning and working in twenty transdisciplinary sustainability projects from different higher education institutions) could gain from their learning sustainability projects. Multiple methods and rounds of data collection and interventions were used to

develop and refine a boundary crossing rubric based on the four learning mechanisms, as illustrated below in Figure 2.

Figure 2

Visualisation of the boundary crossing learning mechanisms

Visualisation of the learning mechanism	Aim of the learning mechanism	What questions to ask yourself to stimulate the learning mechanism
	Identification Gaining insight into complementarity and added value of the different practices around the boundary	• What expertise do I have? • What expertise do I lack in the context of the sustainability problem at hand? • Who are the stakeholders? • What is their expertise, stake and perspective? • How to they relate to each other?
	Coordination Collaboration to deal with the problem, but geared towards efficiency and working along each other (e.g. task division)	• How can I involve the different stakeholders? • How do I approach the different stakeholders? • How can we communicate and collaborate effectively? • What agreements do we make with each other? • What object can I use or develop to facilitate mutual communication
	Reflection Learning to see the problem through the eyes of another. Both defining and exchanging perspectives focused on mutual meaning making and connecting different perspectives and expertise.	• How do I help other stakeholders understand my perspective? • What can I learn from the perspectives of the other stakeholders involved? • What can we learn from each other?
	Transformation Development of new knowledge/practices; an end result that could not have been developed without actual collaboration and integration of perspectives.	• What is my vision on the new practice? • How can we combine our knowledge and perspectives into a (innovative, but realistic) solution? • How can I get others enthusiastic for this new practice? • How can I stimulate follow-up to build on the new practice (towards a sustainable new practice)?

From “Towards a rubric for stimulating and evaluating sustainable learning” by J. Gulikers and C. Oonk, 2019, *Sustainability* 11(4), p. 6. Creative Commons by 4.0.

Although Guliker and Oonk's visualisation of the boundary crossing learning mechanisms was not available to the researcher prior to the data collection phase of this study, it was a useful resource to help explore the data and learning in relation to the teacher and occupational therapy participants' experience of boundary crossing.

Schenke et al. (2017) used a boundary crossing framework and Akkerman and Bakker's four learning mechanisms in a different approach to interpret learning in terms of which of the particular learning mechanisms of identification, reflection, coordination, and transformation was characteristic of the different groups of boundary crossers within their study. This large-scale and systematic study involved school leaders, teachers, and researchers in the context of collaborative research and development projects that took place in schools. They found that different types of collaboration evoked different learning mechanisms which occurred in different combinations for particular groups of boundary crossers. For example, by nature of performing research, transformation was found as a characteristic of most researchers and many of the teachers and school leaders, whereas identification and coordination were less common learning mechanisms among school leaders and teachers who were interested in the results but were less involved with the research.

Akkerman and Bakker's learning mechanisms provide a multi-level approach (including personal, professional and cultural aspects) where learning is facilitated by boundary crossing across multiple areas of practice to generate "new understandings, identity development, change of practices and institutional development" (2011, p. 142). These four learning mechanisms can take place separately or simultaneously and at an intrapersonal (individual participation), interpersonal (between specific groups) as well as at an institutional level (between different organisations or units), (Akkerman & Bruining, 2016). They are not intended to be followed in sequence, although Schenke et al. (2017) suggested that they were positioned in relation to each other, but characterised this as a continuum rather than a hierarchy.

The boundary crossing framework of Akkerman and Bakker's learning mechanisms was used in this study as a lens to help understand the multi-agency learning that occurred for the occupational therapy and classroom teacher participants who as a component of their daily work, encounter boundaries between their activity systems and in doing

so become exposed to new learning regarding their different activities and objectives. The learning mechanisms of identification (investigating diversity in relation to each other); coordination (creating cooperative and routine exchanges between practices) and reflection (expanding perspectives of practice) were particularly relevant. The fourth learning mechanism of transformation (the collaboration and joint development of new practices) was less apparent due to the limitations of this study. This framework assisted in the analysis and reporting of the findings from both the individual interviews and focus groups held with the classroom teacher and occupational therapy participants which is reported in later chapters.

3.3 Multi-agency

The term multi-agency is used in many sectors, including education and health, and for many is an effective and efficient way of working, especially with children and young people with complex needs (Hood, 2010, 2012; Robinson & Cottrell, 2005; Soan, 2006). It can be used interchangeably with other terms such as partnership, interprofessional collaboration, interdisciplinary working, joint working and inter-sectoral partnership. The language used to discuss collaborative ways of working is known to be a "terminological quagmire" (Lloyd et al., 2001, p. 3) and the many terms used to denote multi-agency working indicates a wide range of structures, approaches and rationales that can cause confusion and be unhelpful (Atkinson et al., 2007; Cheminais, 2009).

In order to seek some clarity, Atkinson et al. (2007) carried out a literature review on multi-agency working and its implications for practice. They ascertained that the establishment of effective working relationships in multi-agency groups were impacted by four key aspects. The first key aspect was clarifying role boundaries and acknowledging professional differences, which was reported to lead to more effective working relationships. It was also noted that team morale could be adversely impacted as a result of the blurring of professional boundaries or role ambiguity. The second key aspect (and the most frequently identified facilitator of multi-agency working) was to secure effective multi-agency practice and commitment at all levels of the organisation. Conversely a lack of commitment was frequently identified as the greatest challenge to this. The third key aspect cited as being important to facilitate effective multi-agency working was the engendering of trust and being able to understand the role and work of other professionals or agencies. Lastly, creating a

culture of partnership and understanding between professionals and agencies was cited as being the fourth key aspect which was particularly important to promote multi-agency working.

The essence of multi-agency working has been discussed and advocated for many years, particularly in children's services, due to the known complexities of interprofessional practice (Hood, 2012) There has been a raft of policy initiatives throughout the world to promote this way of collaborative working, for example, the UK governments' non-statutory guidance for their policy Every Child Matters: Change for children (Common core of skills and knowledge for the children's workforce) supported the concept of collaboration and multi-agency working throughout children's services, stating that:

> Multi-agency working is about different services, agencies and teams of professionals and other staff working together to provide the services that fully meet the needs of children, young people and their parents or carers. To work successfully on a multi-agency basis you need to be clear about your own role and aware of the roles of other professionals; you need to be confident about your own standards and targets and respectful of those that apply to other services, actively seeking and respecting the knowledge and input others can make to delivering best outcomes for children and young people (Department for Education and Skills, 2004, p. 18).

A study by Horwath and Morrison (2007) related to the collaborative practices of those working together in the safeguarding of children, drew from a wide range of literature in this field to identify five levels of multi-agency collaboration which usefully demonstrated that collaborative partnerships existed along a continuum, from informal and local collaboration, to formal and whole agency collaboration. These five levels were: communication (individuals from different disciplines talking together); co-operation (low key joint working on a case-by-case basis); co-ordination (more formalised joint working, but no sanctions for non-compliance); coalition (joint structures sacrificing some autonomy) and lastly Integration (where organisations merge to create a new joint identity). Solomon (2019) used Horwath and Morrison's framework to describe his experience of collaboration when working to bring multiple agencies together to work with children attending a new specialist school and their families. Solomon also cites Elliott Jaques' (1956) idea of creating an "imaginal picture"

of the organisation as being a vital factor in the “designing and creating a new organisation before it even comes into being” (Solomon, 2019, p. 393). Solomon spoke of his imaginal picture as being one of full integration (Horwath and Morrison’s fifth level) which he saw as being even more integrated, as a level five plus. However, the other participants in the multi-agency team did not necessarily share this imaginal picture with some at levels two, three, four and five of multi-agency collaboration, and it was surmised that if there were no opportunities to explicitly share these different imaginal pictures, the differences in perspectives would persist. Solomon’s research struck a chord with this study, as it seemed to align with the use of AT and the quest for change, particularly with the shared emphasis that multi-agency collaborations have a better chance of success if they can be planned and enacted with a “collaborative advantage” (p.392) in order to achieve the desired outcome for the users of the service. However, Solomon also recorded opposition to this way of working, with some key contributors’ resistance to engage being attributed to the lack of explicitly articulated shared goals, no clear authorisation, unclear membership, confusion about territorial boundaries and a resistance to shared evaluation. This is supported by other studies which have highlighted similar barriers to multi-agency working, such as lack of clarity around different professional cultures, roles and responsibilities; different organisational and funding structures; staff commitment, engagement and communication within and between professions and agencies (Atkinson et al., 2007; Greco et al., 2005; Sloper, 2004).

In relation to collaborative practice considered most relevant to health professionals Suter et al. (2009) completed a large study in Canada and found that the two core competencies that consistently emerged as being important for effective collaborative practice were firstly communication, and secondly understanding and appreciating each other’s roles. The participants in the study by Suter et al also mentioned that it was important to be able to build trusting and respectful relationships and have a genuine desire for continuous learning and reflection. Likewise, a literature review by D'Amour et al. (2005) to identify conceptual frameworks for interprofessional collaboration in health professionals found that the two key elements of collaboration were firstly, the construction of a team relationship that integrates the perspectives of each professional and where team members respect and trust each other, and

secondly, the construction of a collective action that could address the complexities of the client's needs.

A key rationale in support of multi-agency working is for more efficient service delivery by way of increased partnership and joint problem solving leading to improved outcomes for the service users (Atkinson et al., 2007; Robinson et al., 2008). However, how multi-agency working has an impact on the development of programmes and improved outcomes for learners is not fully understood (Barnes & Turner, 2001; Fairbairn & Davidson, 1993; Villeneuve, 2009). For example, Villeneuve (2009) reviewed the research literature on collaborative consultation services in school-based occupational therapy in the Canadian context that examined the relationship between collaborative consultation and outcomes for learners with disabilities. Findings revealed that the research literature focused almost exclusively on constraints rather than supports to collaboration and although some studies emphasised student achievement of individualised education goals, they lacked descriptions of how collaborative consultation contributed to these outcomes.

Many studies have noted that a close working relationship involving cooperation and communication is crucial to successful multi-agency collaboration between classroom teachers and therapists and is also an important factor in achieving successful outcomes for learners (Barnes & Turner, 2001; Bose & Hinojosa, 2008; Fairbairn & Davidson, 1993; Hartas, 2004; Villeneuve, 2009; Villeneuve & Hutchinson, 2012; Wintle et al., 2017) . The study by Villeneuve and Hutchinson (2012) used AT as a conceptual framework to describe the nature of collaborative practices between teachers and occupational therapists in Canadian schools and how these practices supported educational programmes and outcomes for learners with developmental disabilities. The study identified three themes of workplace practices that supported collaboration; having a shared focus for educational programming; opportunities for formal communication and the importance of the leadership of teachers to facilitate the integration of therapy strategies in the learner's educational program.

Majasic et al. (2015) also found that as the occurrence of collaborative working increased, teachers' perceptions of occupational therapy contributions to student skill development also increased. These positive correlations suggest that multi-agency

working is an important component when working with learners with additional needs and may be influential factors for their educational outcomes.

It is well accepted and expected that multi-agency practice should be inclusive and involve the family and carers of learners with PIMD as integral members of the community in order to work together towards the object of activities in bringing positive changes for learners in terms of health gains, improved access to education and in the support for health care needs at home (Carter et al., 2007; Ryan & Quinlan, 2018; Soan, 2006). It is surmised that no family would feel worse off as a direct result of their involvement in multi-agency practice with the team working with their child. Studies such as those by Abbott et al. (2005) support this in their findings where the majority of families reported that multi-agency working had in fact made a positive difference to the steps towards multi-agency working have already been taken.

Professional learning within multi-agency settings was part of a major research project in the UK called 'Learning in and for Inter-agency Working' (LIW) which investigated the new learning that developed when teams of professionals worked together with children and young people who were at risk of social exclusion (Daniels et al., 2007; Leadbetter et al., 2007). The LIW research used AT as a theoretical framework to study multi-agency working and learning in order to answer four key questions. Firstly, who were the key players within multi-agency work, what were their perspectives and what were the relationships with other partners, agencies, disciplines and professionals. Secondly to clarify what they were working on, and why. Thirdly to understand what tools they used as part of their professional practice and how these compared to those used by other professionals and lastly, to understand the organisational contexts and constraints within which the professional carried out their roles.

Although on a much smaller scale, the present study was also guided by the conceptual framework of AT to explore the possibilities for reflection and professional learning. This was done through a consideration of the contradictions highlighted by the classroom teachers and occupational therapy participants during this study as they worked together within their specific multi-agency setting to imagine and learn new ways of working, both individually and collectively.

It can be seen that multi-agency working is generally considered to be a positive and often motivating practice which can provide a greater understanding of other professions and services who can then work together towards common goals. The attainment of multi-agency working implies shared expertise, mutual commitment and shared accountability (Friend & Cook, 2010). However, many studies have also highlighted a contradiction between the desire for collaboration and its limited practice, which suggests that there are barriers to its implementation (Barnes & Turner, 2001; Bose & Hinojosa, 2008; Fairbairn & Davidson, 1993).

3.3.1 The agency in multi-agency

Like multi-agency, agency is shaped by our interactions with others and particular contexts, so cannot be solely within the capacity of an individual person (Priestley et al., 2015; Priestley et al., 2012). It is therefore also closely related to authority, as through agentic actions we gain authority and control of our lives within the changing patterns of activity and mediation (Biesta & Tedder, 2006; Engeström, 2009).

The authority gained through agency can also be aligned to the essence of being a professional. The term professional agency has been used to refer to the belief that professionals have the power to act and make choices in ways that affect their practice and their professional identities (Eteläpelto et al., 2013). For example Vähäsantanen (2015) investigated how the professional agency of teachers manifested in times of educational change, and found that the challenges of change caused significant differences in teachers' agency in relation to their work, their involvement with the proposed changes, and their professional identity.

Ahearn (2001) defined agency as the socioculturally mediated capacity to act and is considered to play a crucial role in how a person negotiates and shapes their professional identity. However agency cannot be determined as an individual trait, rather it is something that they do or they achieve (Biesta & Tedder, 2006). The term relational agency was coined by Edwards (2005, 2011) and used to capture the agentic aspects of working with others to strengthen their purposeful responses to complex problems. Relational agency, focusing on the individual is therefore required in order to achieve the next level of collective expansive agency (Yamazumi, 2009). Priestley et al. (2015) also support this more ecological stance to agency, viewing it as a developing

phenomenon of the ecological conditions through which it is enacted and as a prerequisite in order to successfully engage in multi-agency working.

From the perspective of AT, which provides the conceptual framework for this study, the concept of human agency can be defined as the potential of the person (the subject) in the creation of new tools and forms of activity to impact on their own life and outcomes (Engeström, 2005, 2014). This socio-cultural stance aligns with and clarifies the meaning of agency by conceptualising it as being relationally embedded across social circumstances, tools, and people (Lipponen & Kumpulainen, 2011).

3.3.2 Ways of multi-agency working and learning

There are very few models which provide guidance on how classroom teachers and occupational therapists can work and learn together to best structure their multi-agency practice. The Partnering for Change (P4C) model from Canada, was one that was introduced to increase collaborative practice between teachers and occupational therapists working with learners who had a developmental coordination disorder (a common condition affecting physical co-ordination in children, also known as dyspraxia). The goal of this initiative was to support school based occupational therapists to make a significant shift in their practice and to build teachers' capacity to improve learners' success within the classroom through collaboration and coaching utilising a transfer of knowledge model between the two professional groups (Missiuna et al., 2012). This study reported outcomes of increased teacher satisfaction with learners' performance, based on the suggestions made by the occupational therapists with the implementation of the P4C model. Wilson and Harris (2018) extended the principles of Missiuna et al's study to explore how teachers experienced occupational therapy services within a P4C model with learners with a wider variety of needs. Using individual interviews and focus groups, they also found that teachers strongly preferred a collaborative way of working with occupational therapists based on the P4C school- based collaborative practice model. The opportunity to work alongside the occupational therapists in the classroom "in the thick of it all" was cited by the classroom teachers as being particularly effective in developing positive working relationships, which in turn supported teamwork and better outcomes for the learners (Wilson & Harris, 2018, p. 138). This model also aligns with social constructivist learning theories where those involved can make meaning from their experiences with

others and their shared activities and highlights the importance of both professions being present and available to each other to allow for these shared opportunities for activities and learning to take place.

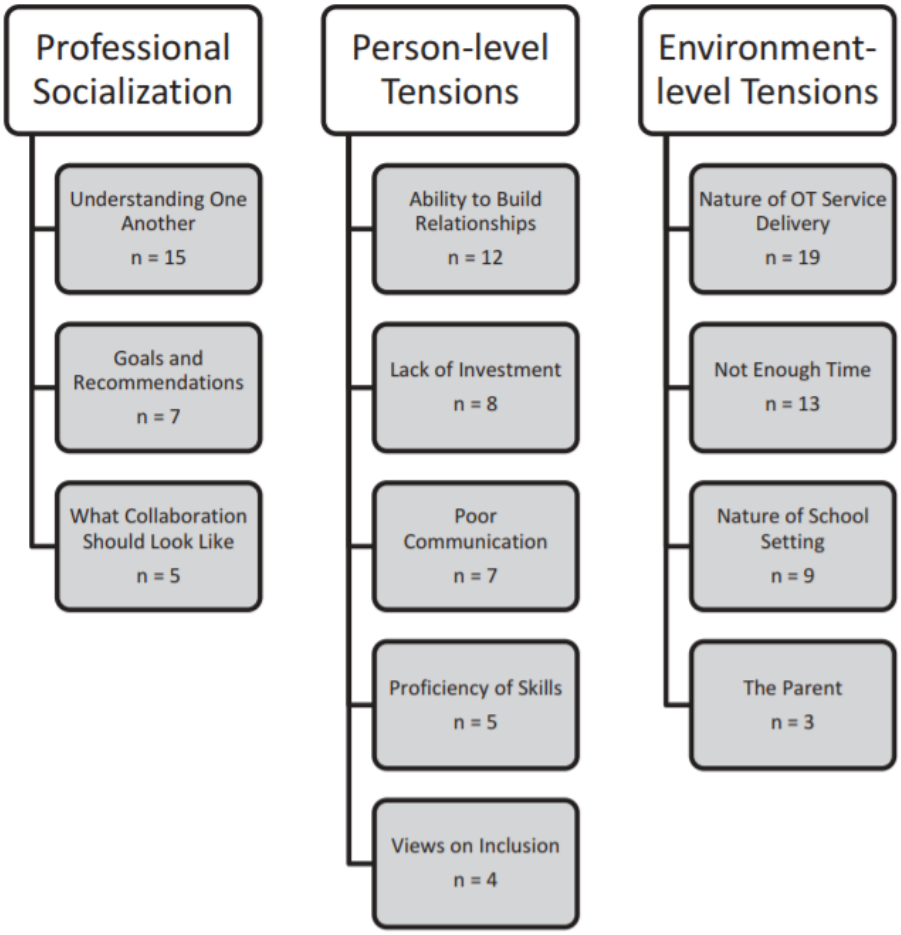
Multi-agency working has been defined as offering "participants a forum to debate issues, by giving professionals from different backgrounds the opportunity for inter-disciplinary discussion and by establishing a collaborative relationship between professionals and carers" (Marks, Burman, and Parker, 1995 p.41 as cited in Greenhouse, 2013). It has long been perceived as an efficient way to ensure the provision of quality services that are responsive to the needs of the service users.

3.3.3 Tensions in multi-agency working and learning

Although there is very little written about the relationship between classroom teachers and occupational therapists working together in specialist education there is a substantial body of research in the literature regarding mainstream school-based therapy services, such as occupational therapy, and their collaboration with teachers. For example, in their comprehensive review of international literature to determine the tensions in collaborations between occupational therapists and teachers, Wintle et al. (2017) identified forty-six unique tensions in collaborative practice which were grouped into three themes: professional socialisation, person-level tensions, and environment-level tensions. These findings were gathered from 31 research articles from the USA, Canada, Australia and the UK indicating that the challenges in collaborative practice between teachers and occupational therapists are widely recognised.

Figure 3

The categories of tensions in collaborations between occupational therapists and teachers



The three themes are illustrated with the number of times a tension appeared in that theme (total n = 107). From "A scoping review of the tensions in OT–teacher collaborations" by J. Wintle, T. Krupa, H. Cramm and C. DeLuca, 2017, *Journal of Occupational Therapy, Schools, & Early Intervention*, *10*(4), p.333. Copyright 2017 by Taylor & Francis. Reprinted with permission.

The information presented in Figure 3 illustrates that it can be easier to discuss and plan for effective collaboration than to achieve it in practice. This was supported by a critical review of literature relating to collaboration between occupational therapists and teachers by Kennedy and Stewart (2012) who found that although both teachers and occupational therapists generally expressed a desire for collaboration, the implementation of the actual collaborative practices were inconsistent.

While a joined up, collaborative approach to providing services is clearly the preferred option, this can be difficult to achieve and there is very little guidance on how to achieve it. Common findings from the literature highlight the need for time, mutual investment and clearly defined roles and responsibilities of team members for a

collaborative climate to exist and for it to be sustained (Fairbairn & Davidson, 1993; Suter et al., 2009; Villeneuve, 2009). This was also confirmed by the results of a more recent anonymous online study of teachers' perceptions of the role of occupational therapist in schools which gave some practical suggestions that school-based occupational therapists could use to support multi-agency collaboration. Again, the key issues highlighted were effective communication, role clarification and the need for adequate time to support the collaborative team process (Benson et al., 2016).

While there is undoubtedly some overlap in the knowledge, skills and approaches they use, a teacher's practice is embedded in an educational domain, whereas occupational therapists are viewed as an allied health profession which has the potential to lead to difficulties in their multi-agency practice. When working in Aotearoa New Zealand schools, classroom teachers and occupational therapists are required to work within the framework and language of the New Zealand Curriculum document and its five key competencies; thinking; relating to others; using language, symbols and text; managing self and participating and contributing (Ministry of Education, 2007). This structure is also used as a basis for the assessment, goal setting and programme planning for the learner. Teachers and occupational therapists are known to use different professional language (Wintle et al., 2017). The framework and language of the education curriculum is more familiar to teachers than it is to occupational therapists, who may continue to use medical based language that is more aligned to their own assessments and interventions. Use of a shared language is crucial when different professional groups are working together to avoid confusion about roles and to achieve common aims (Huang et al., 2011; Royeen & Marsh, 1988). The difficulties presented by the use of different professional language can therefore be a tension in multi-agency working as well as a factor in determining the best pedagogical and therapeutic approaches for learners and how their outcomes should be evaluated, measured and reviewed (Leadbetter, 2004; Vlaskamp & Nakken, 1999).

Organisational factors such as the structure, philosophy, resources and support of a workplace can also create tensions in multi-agency practice (San Martín-Rodríguez et al., 2005). For example, relating to the participants in this study, there are operational protocols between the Ministry of Education and the Ministry of Health (2010) which outline how professionals from health and education services should work together at

the local level, including how individuals will work together, who the key people are and what is required of each party. The protocol requires that therapists:

> …will have appropriate links with a full range of people, services and agencies in order to meet the individual needs of each child or young person. These could include, but are not limited to: Family and whānau, school staff, health or education therapists, early childhood teachers, Needs Assessment Service Coordination (NASC) organisations, other specialists such as dieticians, doctors, orthotists, audiologists, ophthalmologists and contracted providers of services such as wheelchair and seating, or assistive communication (Ministry of Education & Ministry of Health, 2010, p. 20).

The protocol also recommends that the provision of therapy services should be "flexible, child and young person focused, and based on a collaborative and complementary approach" (p.22). Working in a school environment is very familiar to teachers, but less so to occupational therapists whose previous ways of working may be challenged with the different structures and systems of authority in a school as opposed to a health setting which has very different perspectives and paradigms (Vaughan-Jones & Penman, 2004). As health care professionals delivering services in the educational environment, the occupational therapists' knowledge and understanding of educational systems, policies, curriculum, and classroom practices of teachers is an important aspect to consider as it impacts on the way they must work in order to develop and provide educationally relevant interventions (Fairbairn & Davidson, 1993; Villeneuve, 2009).

3.3.4 Multi-agency working and learning in a large team

There are many different terms, often used on a continuum, to describe the varying involvement of members of a team (Choi & Pak, 2007). Multidisciplinary teams are considered to be the most basic level of involvement where different disciplines work on a problem in parallel or sequentially, without challenging their disciplinary boundaries. Interdisciplinary teams are characterised by reciprocal interaction between the disciplines, necessitating a blurring of disciplinary boundaries, in order to generate new common methodologies, perspectives, knowledge, or even new disciplines. Transdisciplinary working is generally seen as being the 'gold standard' approach in relation to the higher extent of multi-agency working as disciplinary boundaries are transcended to look at the dynamics of whole systems in a holistic way

(Choi & Pak, 2006; Sloper, 2004). Individual, fragmented interventions are not recognised as best practice within large teams so multi-agency practice is often promoted as the key mechanism for delivery of services (Greco et al., 2005; Horwath & Morrison, 2007; Sloper, 2004; Solomon, 2019).

3.4 Chapter summary

This chapter has explored the key concepts of boundary crossing and multi-agency practice as they relate to the important relationship and prospective tensions between occupational therapists and classroom teachers within the environment of the specialist school and the wider team including the families and carers of the learners with PIMD.

The following chapter will introduce the theoretical and conceptual framework of activity theory that has been used to guide the processes and to meet the objectives of this study.

Chapter 4 Activity Theory

4.1 Introduction

In this chapter, the key concepts and principles of AT are discussed, and a brief historical perspective of its development is given to provide some insight into the epistemological positioning of this research. Learning theory and the process of professional learning in work settings are also considered, drawing on AT's socio-cultural perspectives and theories of expansive learning, boundary crossing and change laboratory for organisational development and change.

4.2 Activity Theory

AT is a philosophical and cross-disciplinary framework that can be used in complex organisations to analyse different forms of human practice as both individual and socio-cultural developmental processes (Engeström, 2009; Kaptelinin & Nardi, 2006; Nardi, 1996). AT was pioneered in the early 20th century by the constructivist work of Soviet psychologist Lev Vygotsky and his colleagues Alexei Leont'ev and Alexander Luria whose work on cultural-historical psychology is now considered to be "the most recognised part of Russian psychology outside Russia" (Kuutti, 1996; Mironenko, 2013).

AT was later initially used in the Western world in the field of educational research to understand and explore teaching and learning phenomenon, practices, experiences, and tools. This was largely due to Vygotsky's work in developmental psychology and his theory of learning, incorporating the influential concept of the Zone of Proximal Development which he defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). Vygotsky's perspective and influence within AT and the social constructivist paradigm is influential in this study to support the discovery of meaning and understanding through the researcher's active involvement in its construction (Kim, 2014). Vygotsky's work on learning and development and the Zone of Proximal Development is also important to the concept of expansive learning as it represents "terrains of possibilities between the present and

the future where activities can be collectively transformed as a solution to the contradictions at hand" (Engeström & Pyörälä, 2021, p. 8). Expansive learning is an import tenet of AT and this study, as it takes historically formed systemic contradictions as the starting point of an individual's learning through change and collective activities (Engeström, 1987; Engeström & Pyörälä, 2021; Engeström & Sannino, 2010).

In recent times AT has been used to guide research in a variety of fields, such as psychology, education, management, culture, technology and information systems (Hashim & Jones, 2007; Mwanza & Engeström, 2005; Nussbaumer, 2012; Sannino & Engeström, 2018). The use of AT in these diverse fields of research has grown over recent years and is being used by an increasingly international and multidisciplinary community as it develops into "an influential analytic framework for research into professional learning and work practices" (Warmington, 2011, p. 145).

A key purpose of AT is to discover "a viable root model of human activity" (Engeström, 1987, p. 8) and to increase our understanding of its meaning by focussing on the contradictions arising within and between activity systems. The researcher was drawn to the AT framework because of this focus on activities, and the possibilities it provided to explore the tangible aspects of the interconnected layers of practice of the occupational therapy and classroom teacher participants who were the subjects in this study, such as their individual professional sense-making and learning, their collaborative meaning-making and action and their collective/systemic responses and development (Edwards et al., 2009).

4.2.1 The Activity in Activity Theory

> Activities organize our lives. In activities, humans develop their skills, personalities, and consciousness. Through activities, we also transform our social conditions, resolve contradictions, generate new cultural artefacts, and create new forms of life and self.
> (Sannino et al., 2009, p. 1)

All human beings take part in activities. Our lives are defined by our ongoing participation in these activities which are orientated towards objects and driven by purpose. Activity might seem to be a simple concept but it can be difficult to define. Roth and Lee (2007) argue that the term activity cannot be equated with brief events

that have a definite beginning and end but instead are an “evolving, complex structure of mediated and collective human agency” (p. 198). Blunden (2009) also signalled the dilemma of how to delineate and define activity and suggested that an interdisciplinary concept was needed, citing the work of Marx and Engels and their three essential prerequisites of “real individuals, their activity and the material conditions under which they live, both those which they find already existing and those produced by their activity” (Blunden, 2010, p. 10).

The concept of activity as it is used in AT, focusses on everyday activities and people’s interactions within their historical, cultural and environmental context. According to AT, all activity is socially and culturally determined and cannot be explored outside the objective and ecological context in which it occurs, so can only be understood within the context of human interaction. This very human desire to interact motivates our activity, because even though activities can be individual or collective, they are always considered to be social because even if people carry them out alone, they are impacted by social and cultural practices, tools and values (Kaptelinin, 2005; Leont’ev, 1978). Vygotsky (1978) also emphasised that the close relationship between a person and their activity was a particularly significant factor, as he considered external activity to be inseparable from a person’s inner, mental activity.

Another key characteristic of activity is its objectivity. Objectless activity is devoid of meaning and is often quoted as being an impossibility as emphasised by Leont’ev (1978) who stated that,

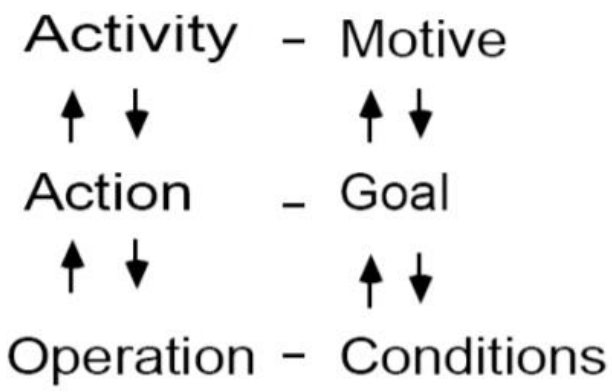
> …the object of activity is twofold: first, in its independent existence as subordinating to itself and transforming the activity of the subject; second, as an image of the object, as a product of its property of psychological reflection that is realized as an activity of the subject and cannot exist otherwise. (p. 52)

Activities are clearly object driven, as it is the objects which are the generators of attention, motivation, effort and meaning (Engeström, 2009). In fact, the object of an activity was described by Leont’ev (1978) as being the key to understanding the activity itself. He reinforced this in his well-known declaration that there was no activity without a motive, but merely activity where the motive has been hidden. Activities are long-term formations and in order to be transformed into outcomes,

activities and their objects must go through a process consisting of several steps or phases (Kuutti, 1996), as explained in Leont'ev's (1978) expanded hierarchical structure of activity, illustrated below in 4.

Figure 4

The hierarchical levels of an activity



From *The Change Laboratory: A tool for collaborative development of work and education*. P. 37 by J. Virkkunen and D. Newnham 2013, Springer Science & Business Media. Copyright 2013 by Springer Nature, reprinted with permission.

This three-level model of activity distinguished between activity, actions and operations, where the highest level, activity (which is often collective) is driven by an object-related motive; the middle level, action or chains of actions (which are often individual) is driven by a conscious goal; and the lowest level, operations is driven by the conditions and tools available (Leont'ev, 1978; Nussbaumer, 2012; Virkkunen & Newnham, 2013). To illustrate the hierarchical levels of an activity, Leont'ev gave the famous example of a primeval collective hunt (cited in, Kuutti, 1996) where hunters would divide into two groups, one group would beat the bushes and flush out the prey, and the other group would trap the animal and conclude the hunt. This example sought to clarify the crucial difference between an individual action and a collective activity, because if the motive for hunting is to get food to eat, it would be difficult for an individual to explain why they were beating the bushes without knowing the context of the larger activity of hunting when their individual actions are made clear (Engeström, 2001; Kuutti, 1996).

Activity and occupational therapy

Activity is a familiar, core concept for occupational therapists who observe and analyse what people do, with a particular emphasis on the analysis of the performance components required to complete an activity (Hinojosa & Kramer, 1997; Radomski & Latham, 2008). The connotation and use of the English word activity are said to differ from the original meaning of the words used in the initial German or Russian AT texts ("Tätigkeit" and "dejatel'nost") with the English meaning closer to the word occupation. As the name of the profession would suggest, occupation is a central feature of occupational therapy intervention, both as a means and as an end (Gray, 1998). Occupational therapy scholars such as Pierce (2001) have attempted to untangle the two concepts of activity and occupation, defining occupation as the experience of a person who is the sole author of the occupation's meaning located in an occurring context, whereas activities are more general, descriptive categories whose meanings are culturally shared rather than originating with the person. As we have seen, activity as it is used in AT is focussed on achieving the object of the activity and would therefore correlate more closely with occupation and the concept of this word as it is used in occupational therapy, although without the specific professional connotation.

Occupational therapists have shown interest in the theoretical basis of AT with some, such as Fortmeier and Thanning (2002) using this approach to provide a foundation for some of the basic assumptions held in occupational therapy practice, such as the importance of meaningful activity in a person's personal activity history. Whereas, other occupational therapy researchers such as Toth-Cohen (2008) have used AT as an analytical tool to unpack areas of conflict and congruence within their clinical and professional reasoning processes by exploring shared activities within and across different activity systems. By contrast, Gretschel et al. (2015) explored how AT could be used to analyse the collective, contextually situated and socio-culturally mediated activities that occupational therapists carry out when designing and planning interventions, in this case for caregivers of HIV positive children living in low-income conditions in South Africa. It is evident from the examples given in these studies that the historical, socio-cultural factors which influence all human activity means that AT has relevance to the work of occupational therapists, and also to that of classroom

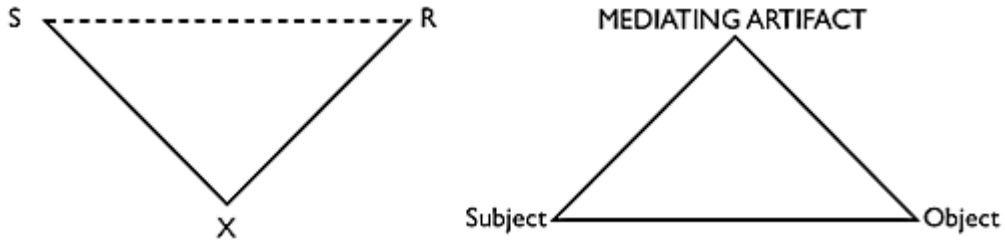
teachers who together are shaped by their cultural views and resources as the subjects of the activity systems in this study.

4.2.2 The three generations of Activity Theory

The development of AT is generally understood as a succession of three generations of theorising and research (Sannino & Engeström, 2018) where the work of Vygotsky and Leont'ev was built upon by Engeström (1987) to develop triangular representations of activity systems and their interrelationships which have evolved over these three stages. The first generation of AT, illustrated in Figure 5 below, is based on Vygotsky's well known triangular concept of mediation where, instead of focusing on the direct impact of a stimulus (S) on a response (R), Vygotsky introduced a complex mediating factor (X).

Figure 5

First Generation Activity System



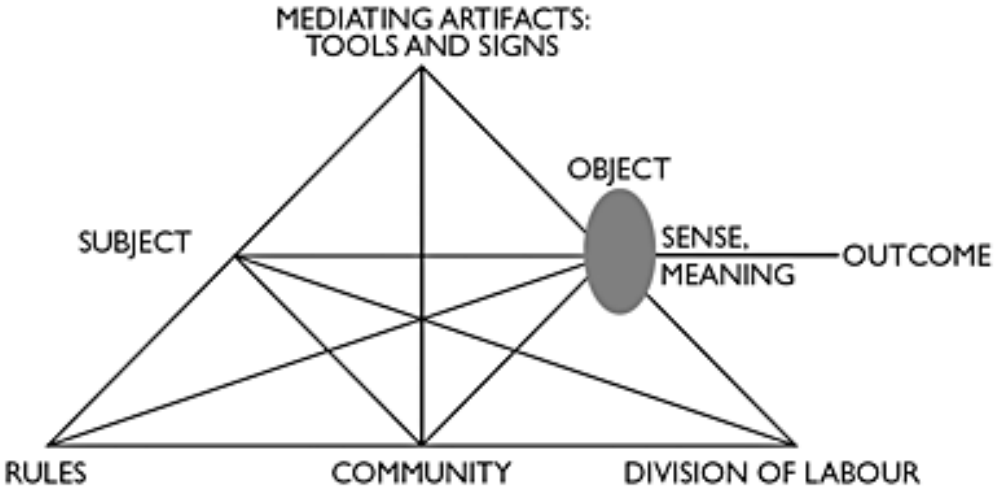
Adapted from *Mind in society*, p.40 by L. Vygotsky, 1978, Harvard University Press. Copyright 1978 by Harvard University Press, reprinted with permission.

This first-generation model of AT was based on Vygotsky's studies of child development, where he maintained that people react to, and act upon mediating artefacts in the environment such as tools, signs, and instruments which leads to an outcome (Vygotsky, 1978) and has been instrumental to help understand individual behaviour by exploring how a person's objectivised actions are culturally mediated. However, focusing predominantly on individual activity as the unit of analysis was considered a limitation of this theory and later, Vygotsky's simple triangular representation and idea of mediation was expanded by Engeström (1987) to include additional constructs which signified collective activity such as community (people and groups who share the same problem space with the subject), division of labour (which includes power relationships and ways in which tasks are distributed) and rules (the explicit and implicit norms and regulations that act upon the activity system) (Toth-

Cohen, 2008). These changes, building on Leont'ev's work on the collective nature of human activity, resulted in the development of the second-generation model of AT representing a complete activity system.

Figure 6

Second generation structure Activity Theory model



From *Learning by expanding: An activity-theoretical approach to developmental research* by Y. Engeström, (p.63), 2015. Copyright 2015 by Cambridge University Press, reprinted with permission.

The upper triangle in this second generation model of an activity system is the same as Vygotsky's first generation concept, but now with added elements incorporating the subject, object and community components as well as the tools, rules and division of labour, converting Vygotsky's individual focussed model into an expanded, systemic approach (Engeström, 1987, 2014). In this second generation model, personal and organisational factors are interrelated as both the subjects of the activity system and the wider community mediate their activities through the use of tools and rules. The activity system is the prime unit of analysis within AT and highlights these important social, collective elements, while still emphasising the importance of analysing interactions between the subjects (Sannino & Engeström, 2018).

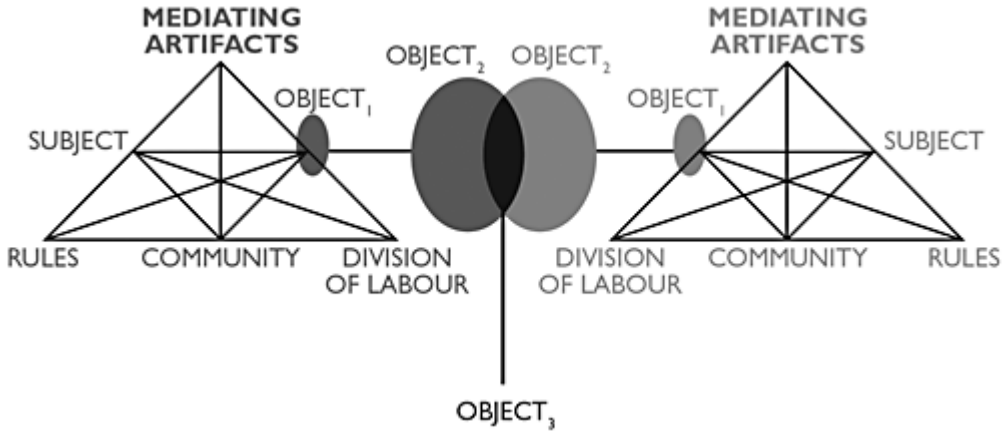
The object of the activity is an important construct within AT. In this second generation diagram it is depicted as an oval, emphasising it as a 'problem space' because object-oriented actions are known to be characterised by interpretation and sense-making, and hold the potential for change (Kaptelinin, 2005; Nardi, 2005; Sannino & Engeström, 2018). Kaptelinin (2005, p. 5) expands on this by stating that "the object of activity has a dual status; it is both a projection of human mind onto the objective

world and a projection of the world onto human mind". Understanding the object of the activity is therefore crucial to enable us to make sense and reach a greater understanding of the information provided, for example, not only what people are doing, but why they are doing it. This object-centred theory of activity proposed by Leont'ev, focused more on the practical activities of adult work in comparison to Vygotsky's developmental approach which addressed higher level mental processes, such as language and thinking. For example, Vygotsky stressed the importance of internalisation and externalisation which often work concurrently as the foundation for all levels of human activity. Internal reasoning is an important component of internalisation as is the planning and reconstruction of activity, for example a person observes something being used so observes and learns to use it (Allen et al., 2011; Leont'ev, 1978) whereas externalisation is the creation of new activities (Engeström & Miettinen, 1999), e.g. a person observes something being used and then uses it in a different way or for a different purpose. This is particularly important when a collaboration between several people requires their activities to be performed externally in order to be coordinated (Engeström et al., 1999).

The framework of the activity system facilitates multi-agency working to promote learning. For example, an occupational therapist and a classroom teacher (the subjects) may work together to support a learner to access a classroom activity through the use of switches. In this situation the subjects use mediating tools that may be concrete (e.g. the switches and assistive technology) or abstract (such as observations and knowledge) to support optimal learning outcomes (the object) while allowing for their own learning through reflective feedback. Engeström's third generation model of AT (Figure 7) further expanded the concept of activity systems to include networks of interacting systems which focussed on a partially shared object. In this third generation, joint activity, not individual activity is the unit of analysis, and therefore requires a minimum of two interacting activity systems (Engeström, 2001).

Figure 7

Two interacting activity systems as minimal model for the third generation of Activity Theory



From "Expansive learning at work: Toward an activity theoretical reconceptualization" by Y. Engeström. 2001, *Journal of education and work,* 14(1), p. 136. Copyright 2001 by Taylor & Francis, permission pending.

This model of two (or more) interacting activity systems enables the researcher to encourage collective learning through change by identifying contradictions and tensions. Engeström's evolution of the generations of AT is based on what is known as the Helsinki school of activity theory, affiliated to the University of Helsinki and the Centre for Research on Activity, Development and Learning (CRADLE) (Sannino & Engeström, 2018). They describe six basic features of AT: (1) it is historically grounded and longitudinal; (2) it focuses on object-oriented, artefact-mediated activity systems as its main unit of analysis; (3) it analyses contradictions within and between activity systems as the driving force of change and development; (4) it constructs future-oriented zones of proximal development in activity systems (5) it fosters and analyses cycles of expansive learning and (6) it uses formative interventions such as the change laboratory methodological resources (CRADLE, 2020).

Engeström's third generation of AT is the model used for this study, with the professional groupings of the classroom teacher and occupational therapy participants each representing an interacting activity system.

4.2.3 The framework and constructs of Activity Theory

The key constructs of AT are the subjects who are the participants in the activity, which is motivated toward a purpose or the attainment of the object or goal. The subjects use tools to act upon the object of their activity and this takes place within a

community where several subjects act together within or between their activity systems. The community is characterised by a division of labour and rules or norms which influence how the subjects work together in their activities. Rules and tools within activity systems are developed historically as the subjects experience them. Whether the outcome of an activity resembles the original object or goal, depends on these constructs and how they have been used (Engeström, 2014). Table 2 below provides a definition for each of these seven constructs of AT in relation to this study.

Table 2

Activity Theory Constructs

AT Construct	Meaning
Subject	The subject is an individual or a group from whose perspective the activity system is viewed and understood. In this study the subjects are the occupational therapists and classroom teachers who participated in this study. They are the people undertaking the activities and their relationship with the object or objective of the activity is mediated through the use of tools. The individual and social nature of human activity is reflected through collaborations and consultations which motivate the subjects to achieve the objectives. “The human subject is social in nature, shaped by culture, and influenced by language, acting with or through other people in organizations, groups, and communities” (Allen et al., 2011, p. 780).
Object	Objects are the goals that the subjects wish to achieve. They are the main driver of their activities, and therefore also reflect the motivational, purposeful nature of human activity. To emphasise the purposeful nature of human activity, the object is described as the key to the objective. As stated by Leont’ev (1978, p. 52) “it is the object of the activity that endows it with a certain orientation. The expression ‘objectless activity’ has no meaning at all”. Understanding the object of the activities that the classroom teacher and occupational therapy participants carried out together to promote positive outcomes for their learners with PIMD is therefore required to make sense and reach a greater understanding of the information provided.

AT Construct	Meaning
Tools/ Artefacts	Tools or artefacts are the physical or psychological devices used by the occupational therapy and classroom teacher participants to carry out their roles. The concept of the tools or artefacts as they apply to AT was developed by Vygotsky (1978) and can be broadly defined to include instruments and physical tools as well as psychological tools for human thinking, signs and language.
Rules	Rules (or norms) are the explicit and implicit regulations or conventions that mediate activities and relationships within the activity systems which in this study are characterised as the factors that the classroom teacher and occupational therapy participants perceived supported or constrained their roles. Socio-historical rules that have been developed over time can impact on how the subjects interact as a group, although different people within the same group may have different rules which guide their activity.
Community	The community are the stakeholders of the activity; the other people and/or services that are involved in the activities carried out by the classroom teacher and occupational therapy participants in this study. Community highlights the human factor of practice and the social and cultural context of the environment in which the subject operates. The activity may therefore be affected by the interactions of the subject with others in the community who may share in the object of the activity.
Division of Labour	The division of labour relates to who will undertake what part of the activity in order to reach the objective. A division of labour exists within every activity system, involving horizontal division of tasks and vertical division of power and status (Engeström, 2005) and can also refer to the "continuously negotiated distribution of tasks, powers, and responsibilities among the participants of the activity system" (Cole & Engeström 1993, p. 7). The division of labour therefore relates to how the occupational therapy and classroom teacher participants collaborate with other members of the team such as families, support staff and other colleagues.

AT Construct	Meaning
Outcomes	Outcomes are the result of the activities and for the participants in this study, related to goal planning and goal setting. For example what it was they hoped to achieve, for their learners and for their multi-agency practice with each other. As the subjects, the occupational therapy and classroom teacher participants were the ones engaged in the activities and motivated to reach an outcome, by acting individually or collectively on the object to achieve it.

An eight-step model was devised by Mwanza (2001) to support researchers to apply these AT constructs to explore activities and activity systems by posing open-ended questions as follows,

1. Activity of interest - What sort of activity am I interested in?
2. Object or Objective of activity - Why is this activity taking place?
3. Subjects in this activity - Who is involved in carrying out this activity?
4. Tools mediating the activity - By what means are the subjects carrying out this activity?
5. Rules and regulations mediating the activity - Are there any cultural norms, rules or regulations governing the performance of this activity?
6. Division of labour mediating the activity - Who is responsible for what, when carrying out this activity and how are the roles organised?
7. Community in which activity is conducted - What is the environment in which this activity is carried out?
8. Outcome - What is the desired Outcome from carrying out this activity?

Mwanza suggested that answering these eight questions would provide a foundation for the researcher to acquire basic knowledge about each situation in order to identify the activity system and areas of focus during the research. It is important to note that all of the key constructs of AT listed above are interrelated. As previously mentioned, AT emphasises the importance of focusing on the object of activity systems in collaborative, distributed work settings in order to help identify what professionals are working on and their perceptions of what they aim to achieve.

4.2.4 Contradictions

Contradictions are “historically accumulating structural tensions within and between activity systems” (Engeström, 2001, p. 137) and as such are key to understanding activities. Contradictions can be a common occurrence due to differences in professionals’ values, goals, organisational expectations and priorities (Daniels et al., 2007). They often develop over time and are “societally essential dilemmas which cannot be resolved through separate individual actions alone - but in which joint cooperative actions can push a historically new form of activity into emergence” (Engeström, 1987, p. 16).

The concept of contradictions was developed by Engeström (1987), initially as inner contradictions which resulted from a degree of inner tension which would then become the primary driving force for change and development. The concept was then developed to apply to AT research through the use of activity systems, the cycle of expansive learning, boundary crossing and change laboratory methodology (Engeström et al., 1995; Miettinen, 2009; Roth & Lee, 2007). AT adopts an explorative stance by looking for and valuing contradictions in and between activity systems as being drivers for change, innovation and progress. This assumes that activity systems have the capacity to change and develop as a result of the contradictions that exist within them (Engeström, 2014; Sannino & Engeström, 2018).

The unearthing and exploration of contradictions within the framework of AT and the change laboratory, were therefore not only desirable, but necessary in order to elicit new enhanced ways of working through expansive learning (Engeström, 2018).

4.3 An adapted change laboratory method

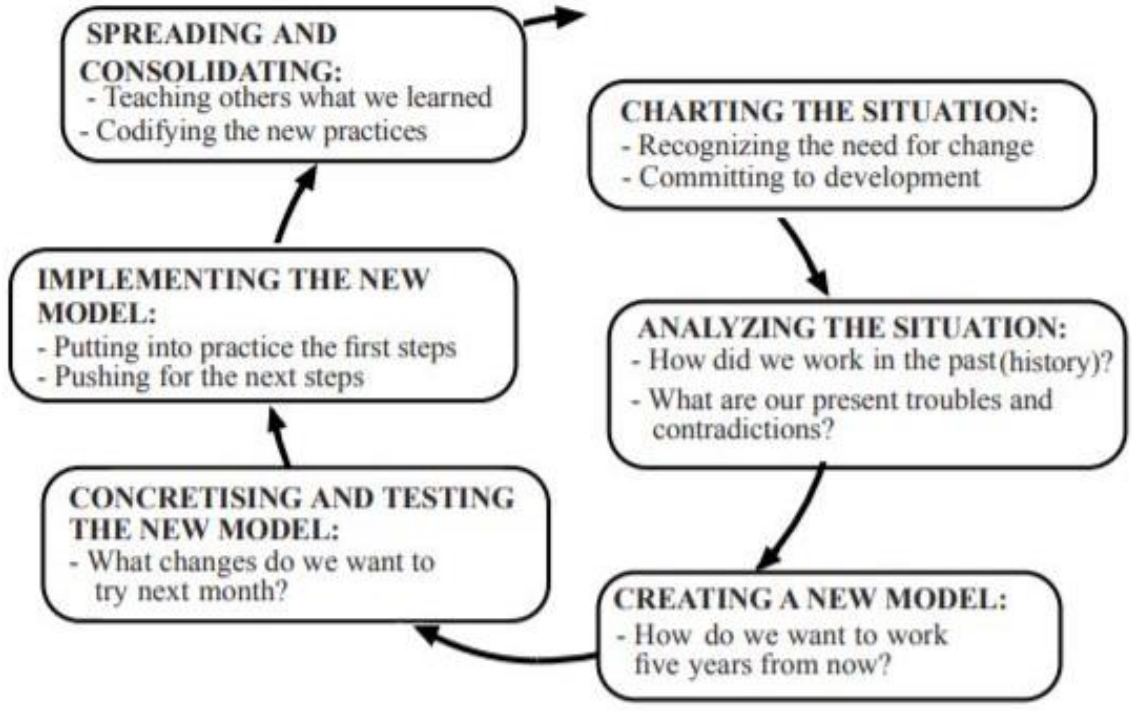
This study used principles of an adapted change laboratory during the focus groups to facilitate the possibility of change by providing the opportunity for the participants to re-conceptualise their ways of working, such as the objects that they were working on, the tools they used, and the rules in which their professional practices were embedded (Daniels et al., 2007; Edwards et al., 2009; Engeström & Pyörälä, 2021).

The change laboratory is an interventionist tool within AT that was developed in the 1990s by the Centre for Research on Activity, Development and Learning in Helsinki to

study workplaces that were in transition and to stimulate collaboration to enable improved patterns of activity (Engeström & Pyörälä, 2021). Through change laboratory, the analytical tools of AT can support the creation of knowledge through the expansive learning of the participants and their activity systems, based on their identification and exploration of the contradictions arising from, and impacting on, their practice (Edwards et al., 2009). Change laboratory sessions can therefore be considered as a dialogue and a process of co-production in boundary zones, where the participants surface the contradictions as being systemic, cultural and historical rather than as an outcome of individual performance (Ellis, 2008). In formal change laboratory settings, workshops are often facilitated by external researchers. However, in this study the researcher was the sole facilitator working alongside the participants and therefore had a stake in both professional groups in their attempts to navigate the expansive learning cycle.

Figure 8

The phases of a Change Laboratory process



From *The Change Laboratory: A tool for collaborative development of work and education* (p. 17) by J. Virkkunen and D. Newnham, 2013, Springer Science & Business Media. Copyright 2013 by Springer Nature, reprinted with permission.

This study used an adapted change laboratory approach (Edwards, 2010; Ellis, 2008) based on the principles of change laboratory, focussing on the first 3 phases of the

process as noted in Figure 8 above: charting the situation, analysing the situation and working towards creating a new model. By focussing on these initial steps of expansive learning, the aim was to enable the participants to explore the issues at a conceptual level and facilitate an initial advance towards a wider and longer expansive transformation, which is acknowledged would take more time and additional development.

4.4 Expansive Learning

Central to AT's analysis of learning in practice, is the concept of expansive learning, when the subjects recognise and acknowledge the contradictions in their activities and transform beyond their current thinking or practice to conceptualise new enhanced ways of working. In expansive learning, these transformations are described by Engeström (1987) as a "thoughtfully mastered learning activity" (p. 210) and are understood as being an example of the previously mentioned zones of proximal development (Engeström & Pyörälä, 2021; Vygotsky, 1978). The expansive learning cycle (shown in Figure 9 below) can be used as a framework for people to re-interpret and expand their definition of the object of their activities, enabling the rethinking of goals, activities and relationships so that they can begin to respond in enriched ways (Engeström, 1999; Engeström & Sannino, 2010).

Figure 9

Strategic learning actions in the cycle of expansive learning

From Innovative learning in work teams: Analysing cycles of knowledge creation in practice by Y. Engeström. In *Perspectives on activity theory*, Y. Engeström, R. Miettinen and R-L Punamäki-Gitai (Eds).1999, p. 384. Copyright 1999 by Cambridge University Press, permission pending.

This study focusses on the first three steps of Engeström's expansive learning cycle as depicted above. The first two actions of questioning and analysis are crucial to surface and define any tensions and the contradictions behind them. The initial questioning of existing practice by individual subjects can facilitate the analysis, learning and change process leading to an increased understanding within the collective group and enable the modelling of new patterns of activity to take place with the potential to change practice (Daniels et al., 2010; Engeström, 2001). Modelling results from the analysis of the contradictions and is fulfilled in the modelling of new solutions, for example during the focus group discussion in this study. The learning mechanisms that operate in boundary crossing also provided a multi-level approach to support the analysis and reporting of the data gathered from the focus groups.

4.5 Multi-agency and Learning

Multi-agency working can provide opportunities for individuals to learn by developing their own skills and knowledge as well as by learning from other professional colleagues (Greenhouse, 2013). AT supports the belief that a person's learning and development is a process between the person and their society, in which the key factors are the activities being performed (Leont'ev, 1978). Learning is therefore a social endeavour constructed through historical, social and cultural contexts so it can be difficult to separate professional knowledge from how it is learned and in which context it is used (Akkerman et al., 2007; Lave & Wenger, 1991; Wenger, 1999). Learning is always personal as well as organisational, the two cannot be separated as how people respond as individual professionals depends on the responses from their work environment (Daniels et al., 2007; Eraut, 2002).

Engeström et al. (1995) advocated for a broader, more multi-dimensional view of expertise rather than an exclusively vertical concept with advancing levels or stages of knowledge and skill. These relationships are underpinned by the concepts of polycontextuality, knotworking and boundary crossing, which aid our understanding of this more horizontal, lateral dimension of learning and expertise where activity can provide a common theoretical foundation to promote learning across professional boundaries. Polycontextuality is essentially co-ordinated multi-tasking, where the subjects of the activity systems engage "not only in multiple simultaneous tasks and task specific participation frameworks within one and the same activity, they are also

increasingly involved in multiple communities of practice" (Engeström et al., 1995, p. 320). Knotworking is another important term which is used to indicate an intensified version of teaming or networking between professionals who are required to establish, maintain and change the agreements necessary to work in complex contexts with many variables (Engeström, 2008; Scaratti et al., 2017). The analogy of knots being tied and retied binds together otherwise separate threads of activity and expertise requiring both rapid improvisation and long-term planning. Knotworking can be seen as a collective way of organising work to create continuity with a shared object and can be applied to allow services to be co-configured to positively change ways of working to meet the needs of colleagues and service users (Engeström & Pyörälä, 2021). Polycontextuality and knotworking also correlate with the key AT concept of boundary crossing.

4.6 Chapter Summary

This chapter has provided a description of AT, the conceptual framework that has guided the processes of this study including the analysis of the data collected in the socio-cultural-historical context of the specialist school community where the classroom teacher and occupational therapy subjects work with learners with PIMD. Using AT as a lens acknowledges that the activities carried out by the subjects cannot be separated from the influences of the context in which they work, which in turn shapes the object orientated focus of their activities. In particular, Engeström's third generation of AT has been used to integrate the concepts of boundary crossing, expansive learning and change laboratory to help identify potential contradictions and tensions within the activity systems of the classroom teacher and occupational therapy participants and to recognise the importance of these contradictions as a source of transformation and change. In the following chapter, the methodology of this study is discussed within the framework of AT.

Chapter 5 Research Methodology and Design

5.1 Introduction

This chapter will discuss the methodology and design of this study as it sought to explore how the occupational therapy and classroom teacher participants worked across professional boundaries to support learners who have PIMD. The previous chapter provided an overview of Activity Theory (AT), which is the overarching conceptual framework for this research. AT is the lens through which all aspects of this study have been viewed and provided "a specific philosophical and ethical approach to developing knowledge; a theory of how research should, or ought, to proceed" (Hammell, 2006, p. 167). Researchers face many challenges when making conceptual and theoretical choices, even more so in topics, such as in this study, where there are many complexities. Using the conceptual framework of AT provided an essential philosophical stance which informed the methodology of this study by providing context as well as increasing the researcher's awareness of the significance and interconnections in the data gathered (Crotty, 1998; Neuman, 2017). Within the AT framework, the use of activity systems as the unit of analysis considers the key social and cultural factors which a) affect the participants experiences and explore how their activities are shaped, supported and constrained by these factors, and b) how contradictions within and between their activity systems emerge and are resolved or unresolved, shaping the nature of their multi-agency working and learning.

This chapter will discuss the research framework; the epistemology, theoretical perspective, methodology and methods used in this study which underpin the research questions and aims. The rationale and strategies used for recruitment and selection of the participants will be shared, as well as their demographical information. The data gathering methods and strategies employed for data analysis will then be identified and discussed. Finally, ethics and the ethical considerations in relation to this research will be outlined.

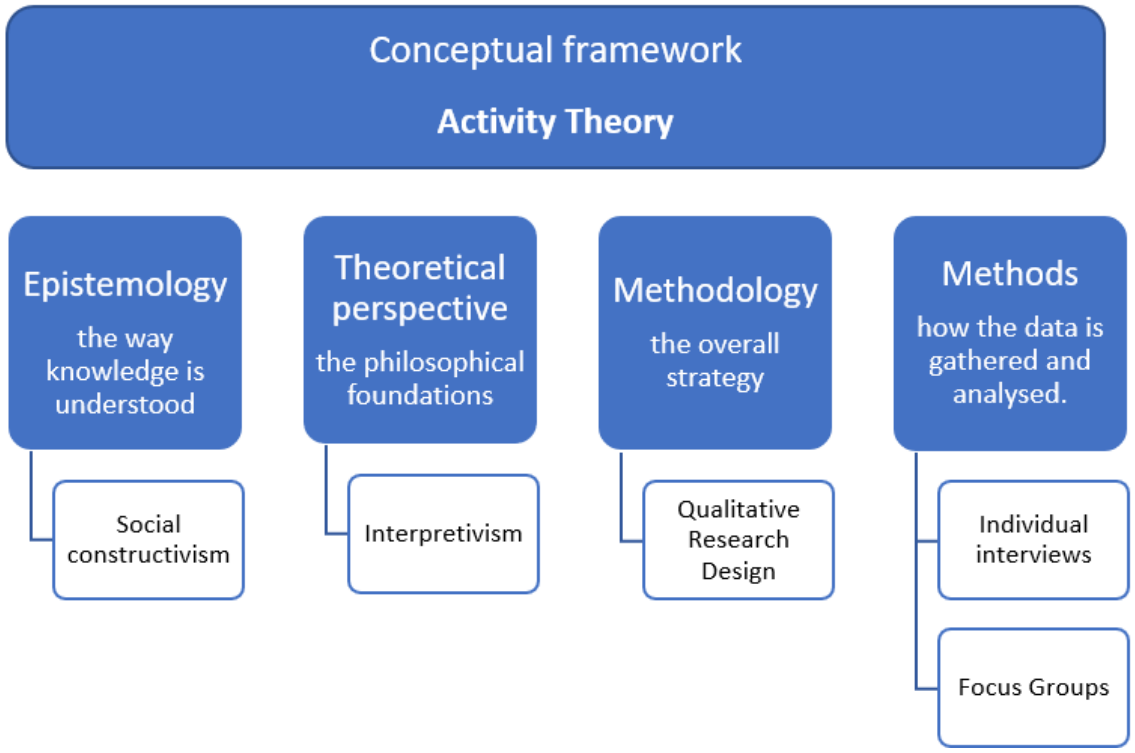
5.2 Research framework

Crotty (1998) described four crucial elements that are required in a research framework in order for beliefs to be made explicit. These four elements of

epistemology, theoretical perspective, methodology and methods are used to illustrate the research framework for this study in Figure 10 below.

Figure 10

Diagram of the research framework



This research is founded on a social constructivist epistemology and a theoretical perspective of interpretivism with AT as its conceptual framework. A qualitative research design was used to explore the classroom teacher and occupational therapy participants' perspectives by employing qualitative methods of data collection such as individual interviews and focus groups.

5.2.1 Epistemology

Epistemology is the theory of knowledge construction based on our personal epistemological development and beliefs, our world-view, what theories and beliefs we hold and how they influence our thinking and reasoning (Hofer & Pintrich, 1997). Personal epistemology is a multidimensional belief structure, it is how a person uses their ways of knowing to focus and filter their perceptions and interpretation of their world (Schommer, 1990). It is therefore an important philosophical concept to position research.

It is also important to consider ontology as a factor in the development of an epistemology. Ontology refers to the nature of reality and existence and "defines the nature of the relationship between enquirer and known, what counts as knowledge, and on what basis we can make knowledge claims" (Grant & Giddings, 2002, p. 12). Understanding the ontological positioning of the study is important as it sets out how reality is viewed and ultimately whether the research focus is objective, dealing with things that can be measured and tested, or subjective, dealing with the perceptions and interactions of living subjects. This study followed a subjective ontological perspective which sees facts as being "culturally and historically located, and therefore linked to the variable behaviours, attitudes, experiences, and interpretations of both the observer and the observed" (MacIntosh & O'Gorman, 2015, p. 57).

Social Constructivism

This research is underpinned by a social constructivist epistemology. Social constructivism is a common feature in qualitative inquiry which, in contrast to interpretivist understandings "focuses on the construction of meaning in terms of the social, cultural, and historical dimensions of understanding in order to make sense of human experience" (Kim, 2014, p. 541).

Social constructivism is closely associated with the work of Lev Vygotsky, mentioned in the previous chapters as one of the founders of AT, who derived this epistemological perspective from the belief that reality is ultimately co-constructed by individuals within social contexts (Vygotsky, 1987a). Vygotsky's work was significant to the development of constructivism because of his theories relating to language, thought, and their mediation by community and culture. He also believed that cognitive development was primarily the result of external factors such as cultural, historical, and social interaction through psychological tools rather than by individual construction. Vygotsky's sociocultural theory of learning "rejects the assumption of the objective nature of social reality and focuses on the construction of joint intersubjective experiences created during the research process" (Kim, 2014, p. 542) Vygotsky's previously mentioned theory of the zone of proximal development was originally developed in relation to how a child learns and develops. However, it is also an important concept for this research, as it represents the distance between what the

subjects of this study can independently accomplish, in contrast to what they could potentially achieve with the cooperation and support of others.

Social constructivism and the conceptual framework of AT align to view the development of knowledge as a human product, which is socially and culturally constructed and is therefore essentially social in nature, requiring people to be active participants in their learning and be able to recognise the social nature of learning (Phillips, 1995). This facilitated the exploration of how the classroom teacher and occupational therapy participants in this study shaped their knowledge and understanding of their particular contexts through their interactions and their environment, and so acknowledged that this has a socio-cultural component and is not just individually generated in isolation. It also reinforces the idea that knowledge is the result of a person's activity, rather than the passive reception of information or instruction and that a change in their knowledge might result in expansive learning and the possibility of new enhanced ways of working. The social constructivist interpretive paradigm and AT were a good fit to jointly provide a scaffold for this study to understand the experiences of the participants and the meaning that they ascribed to these experiences, by focussing on their activities and their descriptions and explanations of them.

5.2.2 Theoretical Perspective

The constructive epistemological stance of this study which is based on a subjective ontological perspective and concerned with the human world of meanings and interpretations, led to the adoption of an interpretive theoretical perspective. Interpretive researchers “begin with individuals and set out to understand their interpretations of the world around them” (Cohen et al., 2007, p. 22). An interpretivist view also emphasises the close relationship between the researcher and the environment acknowledging that they are not independent but impact on each other. The researcher cannot therefore completely distance themselves from the research process as they continually interpret and construct meaning based on their own experiences as well as those of their participants.

5.2.3 Methodology

This study uses a qualitative research design, with a "customized, inductive, emergent process that permits more of the researcher's personal signature in study design, implementation and write up" (Saldaña, 2014, p. 3). For social constructivist researchers, qualitative research is an appropriate vehicle to allow for the study of practice in natural contexts, which can have a more significant impact on understandings of everyday behaviour than quantitative methods (Guba & Lincoln, 2005; McMurray et al., 2004). There are a variety of approaches within qualitative research that have been developed over the centuries by several different schools of thought. Each approach has different views on how data should be collected, recorded and analysed however most have common themes of being holistic (observing people in the contexts of their environments), interpretive (providing insights into the nature and social contexts of personal meaning) and descriptive (describing actions and related meanings in context) (Polgar & Thomas, 2008).

Situating the epistemology, theoretical perspective, methodology and methods of this study underpinned by AT as the conceptual framework, allowed for a focus on human activities from the perspective of the participants and provided a logical framework to explore their perceptions and accounts of events, relationships, experiences and processes in their workplace setting. This also enabled the study to adopt a co-constructive element to develop knowledge and to inspire expansive learning and new ways of working by the participants, while giving consideration to the dynamic and changing nature of the situation and the acknowledgment that there could be multiple interpretations of events shaped by their historical, cultural or social perspectives (Cohen et al., 2007).

5.3 Research Questions

Research questions play a crucial role in guiding a study and as such, need to be aligned with the methodology, conceptual and research frameworks so that they can represent the values and direction of the study and in turn, influence how the data is generated and analysed (Kross & Giust, 2019).

The overarching question that guided this study was:

> How do classroom teachers and occupational therapists work across professional boundaries to support learners who have profound intellectual and multiple disabilities (PIMD)?

There were also three sub questions:

- How do classroom teachers and occupational therapists construct their professional roles when working with learners who have PIMD?
- What activities do classroom teachers and occupational therapists engage in, which supports or challenges their multi-agency collaboration?
- Which factors have been identified that will have a positive effect on their future ways of working with learners who have PIMD?

5.4 Aim of this research

The key aims of this study were to clarify and increase understanding of the professional roles and multi-agency working of the classroom teacher and occupational therapy participants and to inspire their expansive learning and new ways of working that would improve the interventions they provide for learners with PIMD.

5.5 The participants

Purposeful sampling was used to select classroom teachers and occupational therapists as participants in this research. This type of sampling occurs when the researcher "requires access to key informants in the field who can help in identifying information-rich cases" (Suri, 2011, p. 66). The key informants in this situation were specialist school principals and the occupational therapy and teacher colleagues working in these schools who were known to the researcher through professional networks. The researcher initially contacted the principals of four large specialist schools to request approval to approach and discuss the research with the classroom teachers and occupational therapists who worked with learners who have PIMD. Once this permission was given by them signing the Letter of Agreement (Appendix B), they were then given copies of the participant information sheet to distribute to the classroom teachers and occupational therapists at their school who met the following inclusion criteria.

- To have worked consistently with learners who have PIMD.
- To have had more than 2 years' experience in their current practice setting.

Through this process fourteen participants, seven classroom teachers and seven occupational therapists, were recruited from across three specialist schools in a large city in the North Island of Aotearoa New Zealand.

In line with the AT framework used in this study, the work of the classroom teachers and occupational therapists were each viewed as an activity system with the participants defined as subjects of the activity system, i.e. the people who carry out the activity. Demographic details of the research participants are detailed in Tables 3 and 4 below.

5.5.1 Classroom teacher participants

Table 3

Classroom teachers

Participant (pseudonyms)	Highest level of education	No. of years teaching experience	Additional comments
Clare	Graduate Diploma Teaching (NZ)	19 years	Originally from overseas (UK). Previous career as kindergarten assistant teacher.
Liz	BA Education/Psychology (Overseas Qualification)	20 years	Originally from overseas (South Africa). Previous career as a lawyer.
Moana	B. Education (NZ)	8 years	Previous work experience as a residential care worker, foster carer and teacher aid at a special school
Frances	M. Ed. (Special Education) (Overseas Qualification)	5 years	Originally from overseas (Australia). Previous career as an early childhood teacher and learning support teacher.
Bronwyn	Graduate Diploma Teaching (NZ)	11 years	Originally from overseas (UK). Previous career as psychiatric nurse.
Irma	M. Ed (Overseas Qualification)	20 + years	Originally from overseas (Asia). Worked as teacher aide at special school before teaching.
Katrina	Post Graduate Diploma Special Ed. (NZ)	15 years	Originally from overseas (Asia). Previous work experience as a secondary school teacher.

Six of the seven teacher participants had come to Aotearoa New Zealand as adults from other countries and some had also worked as teachers in other countries. There are no recent statistics on how many teachers in Aotearoa New Zealand were born in other countries, however the last Census information showed that in 2018, 27.4 percent of the total New Zealand population were born overseas. This percentage was predicted to rise but even so the number of teachers born overseas who took part in this research is higher than might be expected. The makeup of the teacher participants in this study may have been chance but could also be an indication that these positions are hard to staff with local teachers and may also speak to the professional desirability and status of the role.

All the classroom teacher participants in this study were female. Teaching has historically been a female dominated occupation and statistics show that this is still the case with fewer males than females employed as teachers in Aotearoa New Zealand and throughout the western world (Drudy, 2008; McGrath & Van Bergen, 2017; Ministry of Education, 2020; Rice & Goessling, 2005). Some of the reasons given for this increased gender disparity include a perceived low status, low salaries of teachers and the lack of male peers (Cushman, 2005, 2008).

There were male teachers working in specialist schools with learners who have PIMD in the target geographical area of this study, but there were none who met the selection criteria and who were willing to participate in this research. This is not surprising, as there are even fewer male teachers working in specialist education than in regular schools. Some studies such as Purdy (2009) have explored the reasons why male student teachers were reluctant to specialise in special education and found that although men were interested in this field, they were much less likely to consider working in specialist education due to a perception that it involved more emotional and caring demands, which as males they were less suited to. Some male teachers cite concerns concerning physical contact, which is often magnified in specialist education where male teachers fear they might be accused of abuse when involved in the close personal care demands of working with learners, such as those who have PIMD (Purdy, 2009; Rice & Goessling, 2005).

5.5.2 Occupational therapy participants

Table 4

Occupational Therapists

Participant (pseudonyms)	Highest level of education	No. of years OT experience	Other relevant work experience
Eve	Diploma in Occ. Therapy (UK)	32 years	Originally from overseas (UK)
Noah	Bachelor Health Science (NZ)	3 years	Previously worked as a teacher in a mainstream setting
Donna	Bachelor Health Science (NZ)	22 years	
Greta	Masters in applied science (AUS)	9 years	
Hannah	Bachelor Occ. Therapy	29 years	Originally from overseas (South Africa)
Amy	Masters Health Science (NZ)	22 years	
Joanne	Diploma in Occ. Therapy (NZ)	30 + years	

Two of the seven occupational therapists were originally from overseas, and both had gained their occupational therapy qualifications in their home countries. The other five participants were from Aotearoa New Zealand and had studied occupational therapy in New Zealand. Five of the seven occupational therapist had more than 22 years' experience, although variable amounts of this time had been with children, working in education or with learners who have PIMD. Six of the participants were female and one was male.

5.6 Data Gathering

There were two phases of data collection in this study, firstly through semi structured interviews with each participant, then from the two subsequent focus groups.

5.6.1 The individual interviews

Interviews are a known to be a useful vehicle to elicit facts and knowledge about the issue under investigation. They are a common method of qualitative data collection particularly in the human and social sciences because by using methods such as

individual interviews, researchers are able to “reach areas of reality that would otherwise remain inaccessible such as people’s subjective experiences and attitudes” (Peräkylä & Ruusuvuori, 2018, p. 669). The interviews in this study took place with the fourteen identified participants who worked across three specialist schools as outlined in Table 5 below.

Table 5

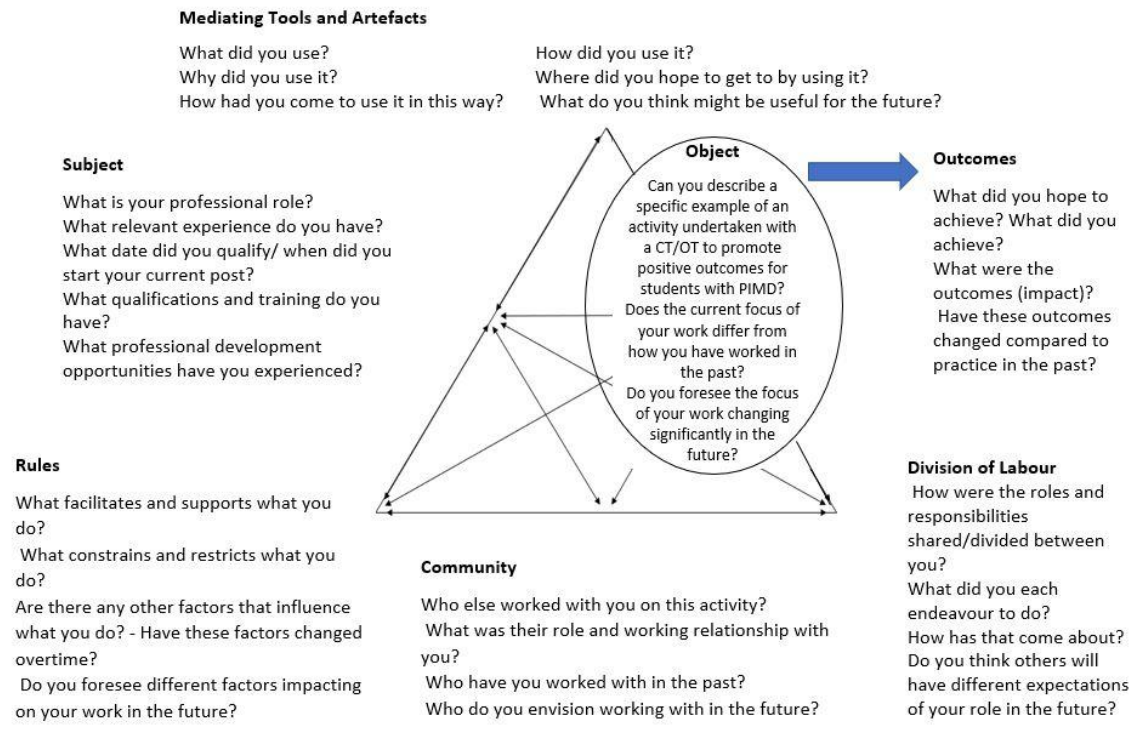
Distribution of interviews across the three specialist schools

School A	School B	School C
2 OTs	2 OTs	3 OTs
3 Teachers	2 Teachers	2 Teachers

The researcher attempted to reduce personal bias and maintain consistency by using a written interview protocol with guide questions that were developed from each of the seven constructs of the second-generation AT framework (Engeström, 1987) as outlined in Figure 11 below.

Figure 11

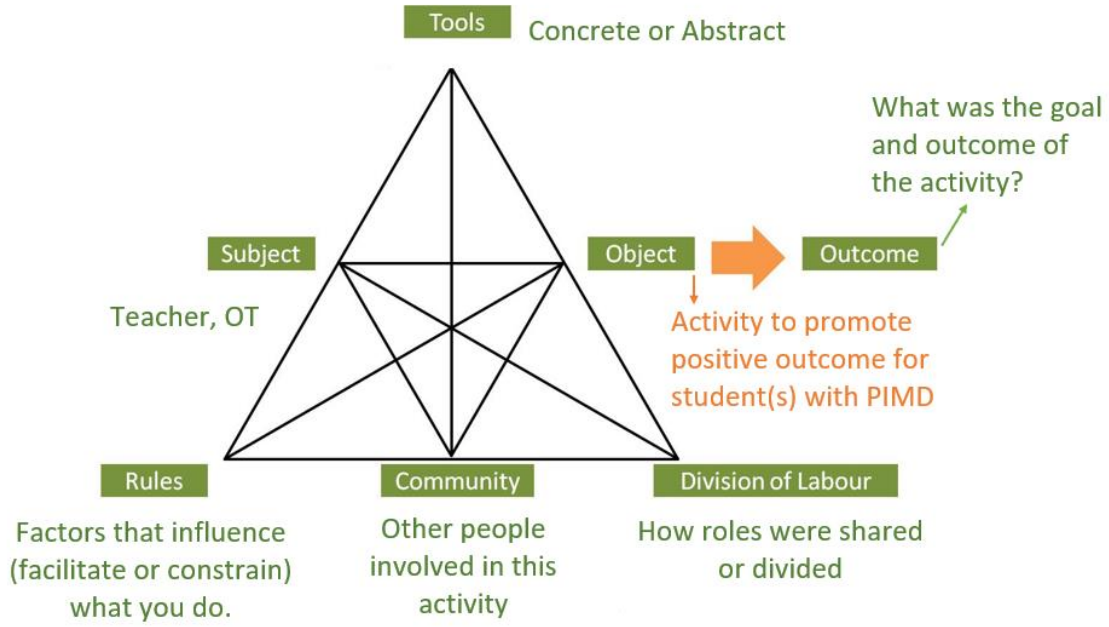
Guide questions for individual interviews



This framework was also illustrated in the diagram below and was made available to the participants during the individual interviews for reference or clarification.

Figure 12

Framework of questions for individual interviews



During the individual interviews, the same questions were asked of both the classroom teachers and the occupational therapists. Some prompts and clarifications were given if they were unsure of the vocabulary or concepts used in some of the question areas for example, the notion of concrete and abstract 'tools' was sometimes a confusing term for the participants and in this case, I might give an example of the types of things that would come into this category (see Table 6 below for more information).

Table 6

Information regarding activity theory constructs

Activity Theory Construct	Definition (Engeström, 1987)	Clarification offered to participants if required.
Subject	The people who carry out the activity.	The classroom teacher or occupational therapist.
Object	The focus of the activity. The purpose and motives that define it.	What types of activity did you use? Why did you choose the particular activity?
Tools/Artefacts	The concrete (physical) and abstract (non-physical) instruments that are used in the activities	Concrete: e.g. resources, assessments, curricula Abstract: e.g. language, knowledge
Rules	The formal and informal rules that the community imposes on the subjects.	Things that support/help or constrain/make your role more difficult.
Community	The community in which the subjects carry out that activity.	The specialist school environment, other professionals, the learner and their family
Division of Labour	Relationships in the community that determine the roles that subject have in carrying out the activity	Who does what? Collaboration with other members of the team around the learner, including their family.
Outcomes	What is hoped to be achieved? Goal planning and goal setting	What happened? What impact did it make?

5.6.2 The Focus Groups

Focus groups are said to be social contexts in themselves, where the participants are not individuals acting in isolation, but are interacting members of this new grouping where they can reflect on their own views in the context of the views of others (Carey & Asbury, 2016). Focus groups were chosen as vehicles to generate data for this study as they were able to capitalise on the natural processes of communication and interactions between the research participants in this setting (Kitzinger, 2000).

At the beginning of each focus group, the participants were asked to review the consent form that they had previously signed and to confirm that they agreed to the confidentiality ground rules of the focus groups. The format of the focus groups was based on an adapted change laboratory approach as described in Chapter 4. This core feature of AT was utilised by the researcher to present mirror data which can take various forms, including documents, statistics and transcripts (Bligh & Flood, 2015).

In this study, the mirror data was generated from the participants perspectives given during the individual interviews. This was presented with an accompanying PowerPoint presentation (attached as Appendix G) which outlined tensions and contradictions that had arisen from the individual interviews with all fourteen participants. This provided a useful framework for the participants to explore the tensions or contradictions within their ways of working and to prioritise and discuss these, giving other examples where possible.

The framework of AT supports the analysis of data within culturally and historically situated actions because it is known that activity systems, in this case of the classroom teacher and occupational therapy participants, form and evolve over lengthy periods of time, so that most contradictions are situated within their personal and organisational history (Engeström, 2001). It was therefore important to consider issues over time within the particular cultural-historical contexts of the activity systems of the participants. Visible notetaking during the sessions is an important feature of the change laboratory method so key points of the focus group discussions were noted on a whiteboard under the headings of past, present, and future to emphasise historicity. Photographs and transcripts of these whiteboard notes are attached as Appendices H and I.

Both focus groups were structured in a similar manner; however it is acknowledged that some variances may have occurred between the two sessions due to the researcher having had experience of the format and questions with the previous group, as well as being aware of their comments to add additional cumulative data to the second group.

Each focus group lasted approximately one and a half hours and took place in large, comfortable meeting rooms in two of the participating specialist schools. Afternoon tea was served immediately prior to the focus groups and the participants had an opportunity to greet each other, which gave the meetings an informal air. The focus groups proved to be an effective tool as the discussion between the participants stimulated richer data than the individual interviews alone. Most of the group members knew each other and appeared to be comfortable in each other ‘s presence, and everyone engaged in the discussions to various degrees. All of the participants in

each focus groups sat around one large table where two recording devices were used to record the discussions which were later transcribed by the researcher.

All fourteen participants who took part in the semi-structured interviews were invited to take part in a focus group meeting. Two of the participants were unable to attend due to personal reasons, so only twelve of the original fourteen participants attended. The two focus groups both contained an even mix of classroom teachers and occupational therapists from across at least two specialist schools as noted in Table 7 below.

Table 7

Attendees at focus groups

Focus Group	Classroom teachers attending (from school A, B or C)		Occupational therapists attending (from school A, B or C)		Total
First	3	(A,A,C)	3	(A,C,C)	6
Second	3	(A,B,B)	3	(B,B,C)	6

5.6.3 Processes of data collection

All data from the individual interviews and focus groups was audio recorded simultaneously on two digital recorders. The audio material was listened to by the researcher on the same day and some initial comments and coding notes were made. The recordings of the individual interviews and focus groups were then transcribed verbatim either by the researcher or by a third-party transcriber who had read and signed the confidentiality agreement (Appendix J). During the transcription process, each participant in the study was assigned a pseudonym and any possible identifiable details in the data were deleted immediately to ensure confidentiality.

All transcripts were printed and carefully checked by the researcher for accuracy against the original digital recording. The text was then read and reread by the researcher in order to become familiar with the depth and breadth of the data and its' content.

5.7 Data Analysis

Analysis of the data implies a transformative process, as a way to find patterns and explanations (Gibbs, 2008) and is carried out "at the intersection of the researcher's theoretical assumptions, their analytic resources and skill, and the data themselves" (Braun & Clarke, 2019, p. 594). The individual interviews and subsequent focus groups were structured to enable the surfacing of contradictions which are the historically accumulating structural tensions within and between activity systems. Contradictions are viewed positively within AT as they have the potential to be key drivers for learning and change. Analysing the data to identify contradictions was therefore a critical phase in this study to explore and analyse the joint practices, activities and ultimately the potentials for change between and across the two activity systems of the classroom teacher and occupational therapy participants in this study (Engeström, 2001).

Thematic analysis was used as a framework to analyse the data, this is not a specific, prescribed method but a tool that can be used across different methods (Boyatzis, 1998). The qualitative data arising from this study was analysed using thematic coding based on Braun and Clarke's (2006) six phase approach. This way of analysing data was cyclical rather than linear and involved linking the data to ideas and to other data over multiple cycles until coherent themes and contradictions emerged. How this approach was used in this study and the support and constraints experienced when doing so, is detailed in Appendix F.

The large amount of data collected in this research was managed by coding. According to Saldaña (2015, p. 3) a code can be defined is "a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data". Therefore, in the process of coding, data is assigned to appropriate codes, not just as a labelling exercise but also as an aid to interpretation. The thematic analysis in this study utilised a combination of deductive coding (derived from the AT framework) and inductive coding (derived from the data collected). The combination of theory driven, and data-driven approaches is common practice in qualitative research, reflecting a flexible approach to data analysis.

In the early stages of the data analysis process, seven a priori (theory-driven) codes were used to explore the initial concepts and ideas as they applied specifically to the

seven constructs of the second generation of AT. These pre-determined codes were chosen to reflect the conceptual framework of the study and provide a structure to answer the research questions. The seven initial codes used were:

- Subject: The classroom teacher and occupational therapy participants. Their educational/professional background, work and life experience, views and perceptions about their professional role and identity.
- Tools/artefact: The concrete or abstract tools used by the classroom teacher and occupational therapy participants in their roles.
- Object: The activities carried out (with each other) to promote positive outcomes for their learners with PIMD
- Rules: Factors that facilitated or constrained their roles.
- Community: Other people involved in the activities carried out by the classroom teacher and occupational therapy participants.
- Division of labour: Who does what? Collaboration with other members of the team e.g. families, carers, support staff and other therapists, specialists.
- Outcomes: What is hoped to be achieved? Goal planning and goal setting

Saldaña (2015) likens the steps of coding to being on a staircase which moves the researcher from a lower to a higher, more abstract, level of understanding and leads to the data being organised into manageable chunks which can then be regenerated to form rich categories. Saldaña's (2015) codes-to-theory process for qualitative enquiry was used as a guide to code the data from the individual interviews and focus groups and then combine them into categories. In the first instance codes and categories were developed by reading the transcripts and highlighting key words and phrases with comments written in the margins to record the researcher's initial thoughts. Computer assisted qualitative data analysis (CAQDAS) software N-Vivo was then used to assist in the organisation of the large amounts of data and in the synthesis of the emerging themes and contradictions.

Throughout the coding process a copy of the research questions, theoretical framework and goals of the study were kept to hand and frequently referred to which helped to focus and inform the coding decisions made by the researcher (Auerbach & Silverstein, 2003). Further coding took place as more ideas emerged from the initial a priori codes that illustrated a new idea or a concept requiring further categorisation as

inductive (data-driven) codes. Examples of the codes and coding derived from the individual interviews and focus groups are provided in the Appendices.

5.8 Ethics and ethical considerations

Qualitative research which involves people as participants, requires the researcher to consider ethical principles as they plan, design and undertake their study, and to conduct their research with consideration of the privacy, safety, health, social sensitivities and welfare of the participants (Miller et al., 2012). Ethics is “a real and inescapable domain of the human world” where reflexive researchers are able to skilfully manage the “ethical reality” of their research (Brinkmann & Kvale, 2005, p. 158).

Prior to commencing any research, academic researchers must make a formal application for ethical approval. In this case, application for ethical approval was made to Auckland University of Technology Ethics Committee (AUTEC) which in considering any application, is guided by seven key principles; informed and voluntary consent; respect for rights of privacy and confidentiality; minimisation of risk; truthfulness, including limitation of deception; social and cultural sensitivity, including commitment to the principles of the Treaty of Waitangi; research adequacy and avoidance of conflict of interest (Auckland University of Technology, n.d.). Each one of these principles will be discussed in relation to this study.

5.8.1 Informed and voluntary consent

It is important that a person’s participation in any research is voluntary and based on an understanding of the information provided about what their participation will involve. The initial information provided to participants in this study was in the form of a participant information sheet and consent documents which were designed in simple, clear language appropriate to the potential participants. As the means of initial contact, these documents were also important to provide a foundation for mutual respect between the researcher and the participants and as a precursor to a positive research relationship.

5.8.2 Respect for rights of privacy and confidentiality

The AUTEC guidelines state that privacy and confidentiality must be respected, and that the identity of the participants be protected at all stages of the study (unless prior consent has been obtained from each participant). In this study, interviews and focus groups with the participants were carried out face-to-face so anonymity was not possible. It was therefore important to clarify the distinction between anonymity and confidentiality for the participants. This was discussed with each of the participants at the initial meeting when the consent form was discussed and signed.

At the start of each focus group the participants reviewed the consent forms that they had signed, agreeing to the confidentiality and ground rules of the focus groups which were reiterated. As the individual interviews and focus groups often took place at the participant's work site, it may have been possible for colleagues to deduce who was participating by seeing them meet with the researcher. This also carried a potential risk of them being inadvertently identifiable.

Confidentiality and anonymity are guaranteed with regards to the storage and presentation and reporting of the data and participants will not be identified by name in any of the publications or presentations relating to this research. This was managed by using an assigned pseudonym for each participant to prevent any identifiable name being attributed to data to protect confidentiality. These pseudonyms are used in this thesis and in any written publications.

All data gathered has been stored securely so no one else apart from the researcher and named supervisors can access it. The only record of participant names is on the consent forms which were stored in accordance with the approved secure data procedures. No identifying information from the documentation will be shared or used.

These measures were outlined in the participant information sheet and discussed with each participant at the initial meeting.

5.8.3 Minimisation of risk

Every attempt was made to identify, disclose and minimise any risks for those participating in this study. Risks can be physical, psychological or social and may

include such things as pain, stress, emotional distress, fatigue, embarrassment, cultural dissonance and exploitation (Auckland University of Technology, n.d.).

In order to ascertain how working practices may be improved, the classroom teacher and occupational therapy participants in this study were asked to identify any contradictions or tensions in their current ways of working. This had the potential to be an emotive task, however no distress was evident, possibly because discussions relating to contradictions were welcomed and positively framed as indicators of potential in accordance with the AT framework. Participants were also reminded that they were free to decline to answer any specific questions put to them during the individual interviews or to engage in any particular focus group discussions.

5.8.4 Truthfulness

Any deception of participants conflicts with the principle of informed consent. If deception is necessary, researchers must outline the precise nature and extent of any deception and the reasons for it. No deception was used in this study.

5.8.5 Social and cultural sensitivity, including commitment to the principles of the Treaty of Waitangi

The ethics application for this study followed the National Ethical Standards for Health and Disability Research and Quality Improvement which aims to foster awareness of ethical principles and determine nationally consistent ethical standards that reflect Aotearoa New Zealand values and culture (National Ethics Advisory Committee, 2019). The Te Ara Tika (meaning to follow the right path) are guidelines for Māori ethical principles which declare that all research which takes place in Aotearoa New Zealand is of interest to Māori, and any research which may include Māori, is of paramount importance (Hudson et al., 2010).

This study did not involve research with Māori or any other specific ethnic groups. However, since it took place in Aotearoa New Zealand, the researcher was aware of the need for cultural considerations for Māori as the indigenous people. To support this, the Te Ara guiding document and its key principals of whakapapa (purpose), tika (research design), manaakitanga (cultural and social responsibility), and mana (justice and equity) were discussed with a Pou Ārahi (a person who provides guidance, supervision and direction to others) who worked in a specialist school setting with

first-hand knowledge and experience working with classroom teachers and occupational therapists. The Pou Ārahi agreed to be available to the researcher to provide advice, guidance or referral to others as appropriate throughout the research process.

5.8.6 Research adequacy

It is important that research meets a minimal criteria of adequacy by having clear research goals, a design that makes it possible to meet those goals and that the project should not be trivial but should potentially contribute to the advancement of knowledge to an extent that warrants any cost or risk to participants (also taking into account the contribution of the work to the student researcher's own education) (Auckland University of Technology, n.d.). This research met this criteria.

5.8.7 Avoidance of conflict of interest

Researchers must identify any potential conflicts of interest and specify measures they have taken to deal with them and to ensure that there is no conflict between their responsibilities as a researcher and other duties or responsibilities they have towards participants or others. In this study, although some participants were known to the researcher, as both a teacher and an occupational therapist the researcher had an equal relationship with the roles of all participants, so no major imbalance or conflict of interest was identified.

The following table provides an overview of the key procedures undertaken to ensure this research followed the ethical guidelines as outlined in the ethics application.

Table 8

Overview of key procedures

Procedure	Reference
Specialist school principals were contacted initially by telephone for approval to approach and contact prospective participants. A face to face meeting with each principal then took place to discuss and outline the research proposal. The principals gave consent by signing the letter of agreement.	Letter of agreement for School Principals: Appendix B
A meeting took place with each participant to inform them about: - the purpose of the research. - how the data would be stored and for how long. - that notes would be taken during the interview and the focus group and that they will also be audio-taped and transcribed. - that the identity of fellow participants and discussions in the focus group was confidential to the group. - that participation was voluntary and that they could withdraw from the study at any time without being disadvantaged in any way.	Participant information sheet: Appendix C
Each participant was given a copy of the participant information sheet to keep for their reference.	
The participants then consented to take part in the study by signing the participant consent form, where they also indicated if they wished to receive a summary of the research findings.	Participant Consent Form: Appendix D
At the start of each focus group the participants reviewed the participant consent forms that they had signed agreeing to the confidentiality ground rules of the focus groups.	Participant Consent Form: Appendix D
One person provided additional transcription services. A meeting took place with this transcriber to make clear that all the material they were asked to transcribe is confidential and could only be discussed with the researcher. They agreed not keep any copies of the transcripts nor allow third parties access to them. They gave consent to these conditions by signing a confidentiality agreement.	Confidentiality agreement for transcribers: Appendix J

The ethical implications and any potential issues that could arise in the process of undertaking this study were outlined in an application to the Auckland University of Technology's Ethics Committee which was reviewed and approved by the University's Ethics Committee on 31st October 2018 (attached as Appendix A).

5.9 Trustworthiness

The process of evaluating rigour, reliability and validity in qualitative research cannot be compared to that used in quantitative research, and cannot be uniformly assessed

with the same strategies, or language. For example Agar (1986) suggested that terms such as reliability and validity did not align with qualitative methodology and instead need to be replaced with terms such as trustworthiness and authenticity (Denzin & Lincoln, 2018). In qualitative research, personal bias and the relationship between the researcher and the participants is acknowledged as being an inevitable fact of being human and working with other humans, and is in fact necessary in order to "explore the feelings, meanings the personal context of our participant's lived experiences" and reflect on their meaning for the particular study (Nicholls, 2009, p. 590).

The decisions made throughout the collection and analysis of the data in this study have been clearly outlined as an illustration of the credibility and worthiness of the work. The term trustworthiness has been used in this thesis to refer to the degree of confidence in the data, analysis and methods used to ensure the quality of a study. The well-known criteria outlined by Guba and Lincoln (1985) including credibility , dependability, confirmability and transferability are further used to expand on the trustworthiness of this study.

5.9.1 Credibility

Research findings should be as credible as possible and able to be evaluated in relation to the procedures used to generate them with a requirement for "adequate submersion in the research setting to enable recurrent patterns to be identified and verified" (Krefting, 1991, p. 214). In this study, sufficient engagement with the participants took place to allow for data to be collected from multiple sources such as individual interviews and focus groups with the participants, which included an equal number of occupational therapists and classroom teachers from across three work sites.

5.9.2 Transferability

Transferability shows the applicability of the findings in other contexts. In this study, descriptive information regarding the methodology, methods and procedures have been described to allow for comparisons and address the issue of transferability. A rich presentation of the findings will also be provided with appropriate participant quotations to also support transferability (Graneheim & Lundman, 2004).

5.9.3 Dependability

Dependability can be shown when the methods and procedures of the study and decision processes are clearly outlined and the boundaries of research ethics are followed (Denscombe, 2014). This demonstrates that the operations and findings of the study are consistent, or could be repeated, with same results. In this study, the researcher followed protocols during data collection such as being well prepared, following the question guide during the individual interviews and the presentation of the mirror data during the focus groups, providing any additional guidance required by the participants regarding the AT constructs and terminology. The researcher was also aware of the importance of being a good listener and being mindful of staying on track to answer the specific research questions.

5.9.4 Confirmability

Confirmability refers to the extent to which the findings of the study are neutral and shaped by the participants and not the researcher (Denscombe, 2014). The researcher held insider knowledge of both professions and had also worked in specialist schools so had knowledge of the participants' work contexts, professional idiosyncrasies and had shared similar experiences. However, despite this insider knowledge, the classroom teachers were aware that I was also an occupational therapist, and the occupational therapists were aware I was also a classroom teacher, so this may have led to their responses being more guarded or to have negatively impacted on their willingness to share in more sensitive topic areas and therefore impact on the responses given.

In order to establish confirmability in this study, the researcher's background including personal and professional information has been provided to the participants and the reader, so that there was an awareness of where the researcher was coming from and what may have influenced her decisions. This important aspect of trustworthiness is further discussed in relation to the reflexivity of the researcher.

5.10 Reflexivity and the role of the researcher

As introduced in Chapter 1, the motivation for this research topic was based on the researcher's lived experience as both an occupational therapist and classroom teacher who has worked for many years with learners with PIMD. Researchers play a pivotal

role in the formation and analysis of qualitative research, because it is they who read, categorise, synthesise and interpret the data (Braun & Clarke, 2006). In qualitative studies, there is no such thing as a completely objective, neutral observer because as stated by Denzin and Lincoln (2018, p. 12), research is essentially "an interactive process shaped by one's personal history, biography, gender, social class, race and ethnicity and those of the people in the setting". An important aspect of reflexivity in research, is to therefore recognise that the background and tendencies of the researcher, as well as any assumptions they may make in relation to the topic, may inevitably be reflected in the findings, so avoiding bias is not always possible (Honebein, 1996; Norris, 1997; Phillips, 1995).

Whilst it was important to establish a reciprocal communication framework with the research participants in order to co-construct meaning (Mojtahed et al., 2014), in my role as researcher/interviewer I adopted a contextual-discursive reflexivity by being aware of my own professional background and experiences and how this might impact on my conversational style during the interviews and potentially create a cocreated narrative (Finlay, 2012). I was also aware of the 'jargon' words that I might use and was cognisant that the participants might modify their responses to mirror my discursive practices.

In this regard, AT was a particularly appropriate framework for this study, because it does not expect that the researcher will stand completely outside the research process but will adopt a contextual-discursive reflexivity to produce a cocreated narrative (Finlay, 2012). The robustness of the AT framework, used throughout all phases of this study, was also able to provide some objectivity and to assist both the researcher and the participants to negotiate meaning, define data and advance any interpretations in a collaborative fashion (Mojtahed et al., 2014).

5.11 Chapter summary

This chapter has provided an overview of the research methodology and design employed in this study, including aspects of the research framework, epistemology, theoretical perspective, research design, data collection and analysis as well as the ethical considerations.

This qualitative inquiry has been framed by the principles of AT and the social constructivist approach to the study which determined the data collection methods and influenced how the data was analysed. AT also provided the conceptual lens to explore the dialogue, multiple perspectives and the networks of the two interacting activity systems of the classroom teacher and occupational therapy participants as the subjects.

The following chapter will continue by outlining the research findings which will be grouped and given meaning using the framework of AT and Akkerman and Bakker's (2011) four learning mechanisms that operate in boundary crossing as an interpretative tool. The concept of contradictions is also used to enrich understanding of the findings.

Chapter 6 Surfacing contradictions

6.1 Introduction

The key purpose of the individual interviews was to highlight the tensions that the participants experienced in their practice, and to identify these as contradictions which have been previously identified in this thesis as the "historically accumulating structural tensions within and between activity systems" (Engeström, 2001, p. 137). Contradictions are not the same as problems or conflicts, they are the sources for change and development and are therefore integral to AT based research (Engeström, 2001; Roth & Lee, 2007).

Aligned with Engeström's third generation of AT, the professional groupings of the classroom teacher and occupational therapy participants in this study were each viewed as an activity system, orientated towards the objects of their activities and functions, with historically embedded rules and expectations of how they worked and learned together (Engeström, 1999). The existence of contradictions is inherent to all activity systems. Identifying the contradictions within and between these two activity systems was therefore a critical phase in this study to facilitate the possibility of change through the subsequent focus group discussions.

Boundary crossing emerged as a key concept in this study as the participants, from two different professional fields, shared their experiences and perceptions of working together within a complex work setting which created the potential for contradictions. Adopting a boundary crossing lens helped to explore and make sense of the learning that occurred for the occupational therapy and classroom teacher participants as they recognised and acknowledged contradictions in their activities as a basis for new enhanced ways of working. Working at and across boundaries of practice became apparent as they sought to link their otherwise separate activity systems together through their multiagency working and knotworking, where the 'knots' were tied and untied according to their situation and needs (Engeström, 1999, 2008; Scaratti et al., 2017). An example of this is where one group became aware of tools, resources or technology that the other group used and were able to adopt these into their own practice and extend their ways of working. Boundary crossing also occurred within activity systems when individuals or groups who were working at the boundaries made

an effort to establish or restore a continuity in their actions and interactions across their practices (Bakker & Akkerman, 2019), for example one classroom teacher spoke about joint planning with her teacher colleagues “because we're all in the same cluster, we share planning, we all have the same topic… it's a lot more sharing of resources and ideas” (Bronwyn, CT).

In the context of AT, the acknowledgement and crossing of boundaries and the highlighting of contradictions are considered to be important opportunities for expansive learning to take place (Engeström, 2007). Bakker and Akkerman (2019) conceptualised learning as cognitive, social, and identity development, encompassing professional and organisational learning. The four key learning mechanisms that operate in boundary crossing, as identified by Akkerman and Bakker (2011) are identification (investigating diversity in relation to each other); coordination (creating cooperative and routine exchanges between practices); reflection (expanding perspectives on our practice) and transformation (the collaboration and joint development of new practices).

The learning mechanisms of identification, coordination and reflection were the main focus in the analysis of the individual interviews. In relation to identification, the participants explored diversity by attempting to define and redefine their professional identity and practice in relation to each other as they considered how their intersecting practices differed, providing examples of legitimising coexistence and othering which are key characteristics of identification. The learning mechanism of coordination was evident, particularly in relation to multi-agency working as individual participants described how they attempted different practices to aid mutual cooperation and allow new and diverse practices to happen which involved establishing a “communicative connection between diverse practices or perspectives” (Akkerman & Bakker, 2011, p. 143). The learning mechanism of reflection was illustrated as the participants were able to reflect on their own and other’s roles and were then able to expand on their “perspective making and taking”.

This chapter will outline the contradictions that were identified from the participants’ accounts of their activities and work practices during the individual interviews.

6.2 Contradictions

Analysis of the information gathered from the individual interviews resulted in three areas where contradictions were illuminated by the participants' experiences as they worked together with learners who have PIMD. These three areas were professional roles and identity, the context of practice and tensions in collaborative working. The contradictions arising in each of these areas will be discussed in turn.

6.2.1 Professional roles and identity

A recurring contradiction throughout the data from the individual interviews were the struggles that both the classroom teacher and occupational therapy participants experienced with their own professional roles and identity, and how they thought this was perceived by their colleagues. It was also apparent that their professional roles and identity were influenced by both personal and professional dimensions and related to the perceived relevance of their educational and professional background, work and life experience. Contradictions were manifested during the individual interviews in how they spoke of their roles, identity and ways of working with learners with PIMD.

A different kind of teacher

The classroom teacher participants often identified themselves as being a 'different kind of teacher' with a different professional role, pedagogy and experiences from their colleagues who worked in a regular classroom. In this example of othering, the classroom teacher participants thought others might see their role as being very different or less professional than that of regular classroom teachers, or even those working in other areas of specialist education. They described how their way of working may be unfamiliar to their other teacher colleagues, for example their teaching of key learning areas such as literacy and numeracy might take place in everyday functional contexts such as eating, drinking and toileting, which were an integral part of the learners' programme.

Many of the classroom teachers in this study had previous careers before teaching, most commonly in what could be considered as caring professions such as nursing, early childhood education or as teacher aides. This could reinforce the perception that learners with PIMD require experience in care rather than in education. However,

classroom teachers who had this type of previous experience described it as being immensely valuable for their role, whereas those who did not have this prior knowledge or experience, such as Frances, shared their frustrations.

> *I think sometimes we're dealing more with the medical side of things than the educational side of things. Sometimes… it feels like all we're doing is personal care and dealing with children who are feeling unwell… the education side of me has not been beneficial at all today, but if I had a nursing degree, I would have been fine (Frances, CT)*

The classroom teachers reported that they were confident in their own abilities and that they generally saw themselves as being a leader in the team around the learners and integral to the success of multiagency teaming. However, some expressed doubt whether others in the team, including the occupational therapists, recognised their leadership role within the classroom. This was acknowledged as a tension by the classroom teachers, as expressed in an example given by Liz.

> *Sometimes they [the OTs] undermine you. They take over instead of acknowledging that you are the teacher. It's not like you want to step in their way, because you know how valuable they are, but they don't often give you that credit (Liz, CT)*

A different kind of occupational therapist

The occupational therapy participants feelings of being 'other' was even more pronounced throughout the individual interviews as they identified that their role working in education, in a specialist school with learners who have PIMD marked their difference from many of their occupational therapy colleagues working in hospitals, rehabilitation centres or in the community, making them feel like 'a different kind of occupational therapist'. The role of the occupational therapist in this setting and the need for clarification was one of the key contradictions that emerged from this phase of the study.

Occupational therapy is often described as a complex role with a broad scope (Creek, 2012). Although the occupational therapy participants reflected that they felt able to explain their role to others, they also admitted that they experienced a struggle with their own professional identity in the specialist school setting and felt they had to continually assert their professional value, identity and way of working in this context

in a way that they would not be required to do in a medical or traditional rehabilitation setting.

Despite this, all the occupational therapy participants were able to explain their role, for example, Noah gave an example of his understanding of the occupational therapist's role and how he explained it to others "I talk to them about the PEO model, the person, the environment and the occupation, even drawing a diagram" (Noah, OT). Although Noah felt that he could confidently use occupational therapy theoretical frameworks as a way of explaining the role to others, he also expressed exasperation that this was still not enough for some to comprehend the role, "I have to explain it several times, and I would say some still don't get it". After first identifying the confusion around his role, Noah's comments illustrate his perseverance to communicate, in a bid for a better understanding of his role by the classroom teachers as an example of the coordination learning mechanism in boundary crossing.

Other occupational therapy participants identified the wide range of areas covered by them, and the variability of tasks involved, acknowledging how their role could be confusing for others, as evidenced by Greta.

> *As an occupational therapist, my focus is on enabling participation in activities, and so everything I do links to that. But because activities can be a lot of things, it can seem like I have a wide stretch and I often say to people, that the OT does tend to cross over…I don't think it's always easy to understand (Greta, OT).*

As an allied health profession with a worldview traditionally set in health and rehabilitation (Crepeau et al., 2003; Hagedorn, 2001), the occupational therapy participants identified differences in the culture, practice and organisational structures between working in the educational context of a school rather than a health work environment where the models, language and culture may be very different. This was remarked upon by Donna who commented "it was a big change…going from that medical model into the education system, and working within that model as well (Donna, OT). The differences between these two work domains were an identified boundary for the occupational therapy participants and was also raised as a contradiction.

By identifying these boundaries and contradictions, the occupational therapy participants facilitated their potential to gain new knowledge and experiences through the learning mechanisms associated with boundary crossing such as identification, reflection and coordination. The contradictions encountered when working in the educational domain were embraced by most, who considered it an opportunity to gain new knowledge in unfamiliar fields, such as the teaching of literacy and reflected that this could also lead to new ways of integrating and coordinating their interventions with what was going on in the classroom "It gave me a bigger picture…of the whole literacy program and trying to make that really integrated with what we are doing as OT's" (Joanne, OT).

The occupational therapists' ways of working

School-based occupational therapists use a variety of service delivery models to meet the needs of the learners; direct or 'hands on' intervention aims to address individual needs and are provided by the occupational therapist in a one-to-one or small group situation (Dunn, 1988). Whereas, collaborative consultation is described as an interactive process where the occupational therapist works with other team members to create joint solutions (Idol et al., 1995). A consultative model was recognised as being the dominant type of service delivery by the occupational therapy participants in this study, as expressed by Donna "It's definitely consultative, so instead of the goals been actioned by me, I'm more of a resource in terms of sensory modulation needs, or around equipment or resources" (Donna, OT).

However, the classroom teacher participants viewed the occupational therapists' way of working more simplistically and took the perspective that it was the availability of the occupational therapists that was the key determinant in their way of working, rather than their model of intervention being chosen in response to the needs of the learner, or the classroom. The classroom teacher participants therefore often considered it to be more preferable and an example of best practice when the occupational therapist was working 'hands on' with the learners.

Despite the occupational therapy participants citing consultative service delivery as being their preferred way of working, this could be seen by the classroom teacher participants as being second rate and only necessary due to the time pressures of the

occupational therapy, such as Irma's comment "The OT is more on a consultative level because of the number of the students enrolled in the school, it's impossible for them to be in the classroom on a weekly basis" (Irma, CT).

The occupational therapy participants showed awareness of this contradiction in perspectives between them and the classroom teachers and acknowledged that a variety of service delivery models was beneficial in order to keep up to date with the needs of the classroom teacher and the learners.

> *I would try to balance, there would be some days where I would just do jobs, and there would be other days where I just hang out more in the classroom… if I didn't do that, I would start to get out of touch with the students and the teachers as well. It was useful just to be in the classroom, because then you can continue to know the students and pick up the small things they might be needing. If you're not in the classroom, you don't pick those things up (Greta, OT)*

Another contradiction raised in the occupational therapist's way of working was their role in equipment and resources which was perceived by both the classroom teacher and occupational therapy participants as having a significant impact on the range of activities they carried out. It was noted that much of the occupational therapy time available was taken up in these activities, particularly relating to the prescription, funding applications, ordering, maintenance and training required in relation to equipment such as hoists, wheelchairs and also any environmental modifications that might be needed. Working with wheelchairs was considered to be a key role by some of the occupational therapy participants and was an example given of one of the concrete activities and tools that they embraced, possibly because of the more tangible and quantifiable nature of these tasks. However, some occupational therapists, such as Joanne did not see this as a good use of their time "I don't enjoy wheelchairs, I just find it so time consuming when I want to go do other things. It drives me crazy. I'd rather be hands on, being involved".

The occupational therapists' focus on equipment and resources, was also seen to be to the detriment of what some classroom teachers, such as Clare, considered to be more important tasks.

> *For some of these complex students, when you're looking at the wheelchairs and what they involve, sometimes they [the OTs] can*

> *actually miss out the individual student and what their learning needs are (Clare, CT)*

Ultimately, although both teacher and occupational therapy participants identified some misgivings regarding the occupational therapists' time consuming role in equipment and resources, this was considered to be an essential, priority area of practice which had to be done to meet the needs of learners with PIMD.

Perception of difference and boundaries

The classroom teacher participants also highlighted the wide-ranging role of the occupational therapists when they were working with the learners with PIMD in their class. This observation was often made in comparison to what they saw as the more defined roles of the physiotherapist or speech and language therapist. This ambiguity around the less defined areas of practice in the occupational therapists' role was identified as a contradiction, but was also considered to be a positive, as it meant that the occupational therapists were able to be flexible to meet the teachers' needs for support as well as tailor their interventions to the specific needs of the learner. Frances explained this further.

> *I feel like having an OT on the team covers all your bases, even if they're not as strong as an SLT or not as strong as a PT; they'll have some information, some background knowledge (Frances, CT).*

However, the diversity of the occupational therapist's role also caused some tensions for the classroom teachers, such as Clare, who considered that the role might be too large to define 'the breadth of the OT role can be a positive, but also a constraint in the respect that as an OT, they cover so many parts (Clare, CT).

Likewise, the occupational therapy participants, as they reflected on their own role spoke of their awareness of the different professional backgrounds of the classroom teachers that they worked with and commented on often how they thought that this impacted on their teaching practice. For example Noah (OT) commented on the fact that a particular teacher "came from a nursing background, it was quite evident in the care and the teaching". This identification of a teacher's diversity was shared as being a negative aspect as from Noah's perspective, it undermined and confused the teaching role with that of the more care-based role of a nurse.

On the other hand, Joanne (OT) spoke of the difficulties that might occur when a teacher did not have appropriate experience or knowledge, identifying the boundaries of practice between them.

> *She didn't have such a good understanding of positioning with the kids, she didn't have that sort of background. So you'd often go in and you'd think 'well, that's nice that the child is doing that, but I wouldn't position them like that, you're actually making it really difficult for them to do that" (Joanne, OT)*

Although the occupational therapy participants shared that they had embraced working in a school setting and applying their interventions to the educational needs of the learners, some reported that they struggled with what they perceived as the lack of opportunities for learners to be engaged in the classroom programme. For example, one occupational therapist shared his dissatisfaction that the ratio of care to education was unbalanced stating, "care is very dominant there, I would say 80/20… I find it very frustrating, a lot of time is wasted, there seems to be a lot of sitting around" (Noah, OT). Another occupational therapy participant expressed her frustration about this quite bluntly by exclaiming "often our learners with PIMD are just sitting quietly, in their wheelchairs." However, in an attempt to cross the boundaries of practice, she also spoke of how she coordinated with the classroom teachers to support learning in the classroom for these learners "it's about supporting and advocating, that even though they have those complex needs, they still have the ability to learn, and they are at school to learn" (Hannah, OT).

These comments from the occupational therapy participants acknowledge the high demands placed on the classroom teacher and teacher aides' time for the physical care and support with positioning and activities of daily living for learners with PIMD. The high levels of support needed for these tasks, such as feeding and toileting has been recognised as significantly reducing the time available for educational and therapy activities, and the possibility that these may be undermined (Vlaskamp & Nakken, 1999). In light of this, there was an openness to take up the perspective of the classroom teachers and empathy was shown towards them and their struggle to balance the education and the therapy/ care needs of the learners. For example Eve, speaking about the classroom teachers that she works with said "I thought, yeah, they

do get it, they do understand. They know what a classroom is meant to look like and must feel dreadful not being able to do that" (Eve, OT).

Generally, the occupational therapy participants expressed their admiration for teachers working with learners who had such complex learning needs. However, as sensed by the classroom teachers, the occupational therapy participants sometimes questioned the teacher's authority within the classroom, particularly when it came to what they, as occupational therapists could and could not do. For example Amy (OT) shared her tensions with a classroom teacher because "if my activities aren't fitting her curriculum, she won't have a bar of them".

Role constraints

In AT, constraints relate to the formal and informal rules that the community imposes on the subjects which may make their role more difficult. Time constraint was the key tension mentioned by both the classroom teacher and occupational therapy participants. For example, there was a consensus among the classroom teachers that they lacked the time to sufficiently carry out their role, even though as acknowledged by Moana, they have very small class sizes.

> *There are many things that make our job harder. I think even the time to really focus on one student and get all the things that they need. I mean, it seems ideal, you know, we only have a certain amount of students in class, so why can't we do that? (Moana, CT)*

In response to this question posed by Moana, a possible reason for the time constraints experienced by the teacher participants was given by another classroom teacher Clare, who pinpointed the additional needs of the learners with PIMD and that "for those more complex students, we actually need to spend more time".

Although the classroom teachers were often focussed on their own time constraints, they also acknowledged demands on the occupational therapist's time and attributed this to their high caseloads. For example, Frances compared the number of learners the occupational therapist had to work with, to those in her own classroom "I think they've got a lot more to do in terms of paperwork etc. Some have 60 to 70 students... whereas I only have five" (Frances, CT).

Echoing the concerns of their teacher colleagues, the occupational therapists such as Greta, also identified a lack of time as a key constraint “It’s very hard to get enough time with a student to actually complete the task” (Greta, OT). This was considered to be a staff funding issue which could have implications for their practice, the teachers, and the learners. Staffing levels of teachers and teacher aides were also thought to impact on the time that the occupational therapists could spend in classrooms as well as the time available to work alongside teachers and teacher aides to support classroom activities as opposed to care needs, because as one occupational therapy participant said “these kids take a long time, getting them in and out of equipment, feeding and toileting. So, if they're short on staff, they just don't have the time for doing the activities” (Joanne, OT).

The classroom teacher participants also cited difficulties in staffing, particularly teacher aide staffing, as an issue and a contributing factor to the teachers’ workloads and time constraints. Clare elaborated on staffing issues and spoke about the adverse effect on her and on the learners when there were unfamiliar staff in the classroom relieving in key roles such as the teacher or teacher aide.

> *I've got a teacher aide who's away so there’s unfamiliar staff… then the students react in different ways. I find that quite challenging in the respect that their behaviour changes, and it's not their doing, it’s because the environment for them has changed (Clare, CT).*

6.2.2 The context of practice

Learners with PIMD

How the classroom teacher and occupational therapy participants viewed their professional identity was linked to their context, working with learners who have PIMD in the specialist school setting. The effect of the complex, highly individualised care and medical needs of the learners with PIMD was highlighted as an issue by every participant and were noted to impact on the types and frequency of activities that they felt could be achieved in the classroom, reinforcing the notion of a different kind of learner and a different kind of school. The impact of the complexity of the context, from the perspective of both the learner and the school, is evidenced by Katrina who encountered issues and boundaries of practice not generally seen by classroom teachers in other settings “In the beginning, I was confused, I was like a nurse…. I

realised that it's not easy to be in this class, that I should know about the Mickey button [feeding tube] and the tracheostomy" (Katrina, CT).

Working towards the learners' goals and outcomes were a key focus of all the participants' activities. However, there was acknowledgement from several of the teacher participants that for this group of learners, outcomes were more difficult to define, and to achieve. Some commented on how the classroom programme for learners with PIMD differed from the usual perceptions. For example, Frances shared how a nursing student on placement in her classroom also noticed this difference "I've got a nursing student in my room at the moment, and she's gone - I just want to get hands on and do something educational with them" (Frances, CT).

The lack of curricula, assessments and programmes for learners with PIMD

A significant tension emerging from the data from the individual interviews was the perceived lack of cohesion, congruence, and continuity with regards to a curriculum or programme for learners with PIMD. Although some specific international pedagogical frameworks for learners with PIMD were identified by the teacher participants, they identified that there was an absence of any single resource available to them that could consistently be used as an assessment or learning curriculum for their learners, meaning that personalised programmes and a holistic pedagogy were their only options, "there hasn't really been a system in place to be used, so everyone has been using whatever they prefer to use" (Frances, CT). Many of the classroom teacher participants gave examples of using informal tools that they had gleaned from several sources such as those shared by Clare, "I often go online and look for PMLD curriculums, or what other schools have written, particularly from Australia or the UK…it's really about taking some of those key pedagogical ideas" (Clare, CT).

The National New Zealand Curriculum (NZC) (Ministry of Education, 2007) is intended to form the basis of the learning programme for all school aged learners. All of the teacher participants mentioned this overarching document, and some stated that they attempted to incorporate it into their teaching practice, however it was generally identified as being for reference rather than an active tool that they could use for assessment or planning purposes due to the irrelevance of the curriculum's prescribed levels of achievement to their learners who have PIMD. The concrete tools that were

most often cited by the participants as being useful as an assessment and learning tool for learners with PIMD were the Quest for Learning (a resource designed in Northern Ireland, specifically for learners with PIMD which allows for very small steps of progress to be monitored and for the learners to develop their own unique pathway towards the key milestones which are based on developmental milestones) and an adapted version of P levels (this is a resource from the UK which provides a set of descriptions for recording the achievement of learners with additional needs who are working below the first level of the National Curriculum). The participants also referred to other Aotearoa New Zealand resources, such as the Key Competencies Pathway which is based on the Irish Quest for Learning and Te Whāriki, a National guideline which outlines the curriculum for the early childhood service in Aotearoa New Zealand. Although Te Whāriki is clearly a document for pre-school learners, some classroom teachers, such as Frances, identified its value as an additional resource to guide the learning programme for learners with PIMD, "I find Te Whāriki is a lovely place to lean on, as well as incorporating other things that I've learnt along the way" (Frances, CT).

As well as curricula and programmes, appropriate classroom resources for learners who have PIMD were also difficult to access. Clare identified the extra time and effort that was required to obtain or even make the required resources.

> *You can't just go and take a puzzle off the shelf… you're going to have to sit down and think outside the box to collect those resources. It's not as though you can go through a catalogue and just pick... if I wanted to have a bungee in my classroom, the best way to do it is to make it (Clare, CT)*

The paucity of assessment tools and intervention resources was also identified as a concern of the occupational therapy participants who often used standardised assessments as part of their practice but were unable to do so in this context because they were not applicable to learners who have PIMD. Some tools that were mentioned by the occupational therapy participants were the PRPP (Perceive, Recall, Plan & Perform) system of task analysis or the CMOP-E (The Canadian Model of Occupational Performance and Engagement) which supported what they saw to be their core role of activity or task analysis (Pierce, 2001).

However, although these assessments were cited, they were not routinely used by the occupational therapy participants, even when the tools were readily available and professional development had been given on how to use them. The reasons given for this was their inappropriateness and lack of time. Time constraints were also mentioned by Amy as a factor in her choice to use clinical observations instead of formal standardised assessments for example, “we tend just to use sensory observations now, because it takes too long to do the sensory profile…the scoring takes forever” (Amy, OT). As a result, the observation of learners was the most frequently mentioned assessment and intervention tool used by the occupational therapy participants such as Hannah, who recognised this as a useful tool and a skill that she had developed “our clinical observations become so astute as experience develops and you're then able to reflect and based on those, you're able to predict” (Hannah, OT).

6.2.3 Tensions in multi-agency working and learning

Multi-agency working and learning implies that practitioners from different professions work in an integrated way on a shared task, rather than in parallel or in sequence and share a collective action which is oriented toward a common goal (D'Amour et al., 2005). The importance of multi-agency practice was often identified by the participants through examples of coordination, joint working and the sharing of information and ideas to achieve the best possible outcomes for the learners.

> *It's really important that we are all on the same page…teachers and therapists, that we're all speaking the same language and putting in and supporting those programs in the class (Donna, OT)*

The classroom teacher participants reflected on the importance of the need for a collaborative way of working in order to provide a seamless response to the needs of the learners in their classroom, with some such as Bronwyn valuing the occupational therapists’ contributions to these collaborative team practices giving an example of the cooperative and routine exchanges between their practice.

> *I'll often go to her with what I'm trying to do… then we'll work together to work it out. We did water play the other day, but it’s the conversations afterwards that are so rich. We are observing what the students are doing from two different perspectives, and then coming*

> *together with the ideas. That was just really, really valuable (Bronwyn, CT)*

The participants support for this way of working also reaffirms studies which suggests that successful outcomes for learners are influenced by positive collaborative efforts (Barnes & Turner, 2001). Timely, accessible and effective communication was emphasised by the participants as being key to building collaborative working relationships and as an important foundation for effective multi-agency practice between the classroom teacher and the occupational therapist, between school and home and within the wider team around the learner.

Frequently, the interpersonal relationship between the classroom teacher and the occupational therapist was seen as being fundamental to the success of this way of working. Particularly for the occupational therapy participants who cited their most significant practice-based connection as being with the classroom teacher. Greta was particularly vocal about the importance of establishing this positive working relationship.

> *If you haven't got buy in with your teachers, if you don't have a relationship, if you don't feel comfortable with each other, you can't share ideas, you can't bounce, you can't try things. There has to be safety in that relationship…. I generally focus on my relationship with the teachers as my absolute first priority (Greta, OT)*

The learning mechanism of coordination was evident in the emphasis placed by the participants on achieving an effective communicative connection with each other at the boundaries of their practice. This was often discussed alongside the challenges of achieving this, such as the previously mentioned perception of high workloads and time constraints. Hannah and Eve gave examples of strategies that they used to facilitate communication with the classroom teachers and in Eve's case, also with the teacher aides. These are examples of how the individual practitioners worked at an interpersonal level to develop an understanding of their own and other's needs in an attempt to establish practices that would facilitate their multi-agency working.

> *We have a relationship going and it makes the communication look easy and it also makes the meetings more relaxed. Because we know what we're there for, we know what our roles are (Hannah, OT)*

> *We have a checklist and fill it in with the teacher or teacher aide. Because there's no point doing it in isolation as an OT thing or hold it to yourself, because we're not in there all day, every day, like the teachers are (Eve, OT)*

Families and carers as part of the team around the learner

Because the learners with PIMD commonly have difficulties communicating their needs and wishes, the importance of a partnership between their families and carers was identified by all the participants as an essential element of learner and family-centred care (Jansen et al., 2013). There was a consensus of the importance of effective communication between all parties, although some contradictions in this area were identified. For example, some of the classroom teachers shared instances of being excluded from communications which they considered to be an undermining of their key role with the learners. One classroom teacher, Katrina shared her frustration that "there are times that they [the OTs] directly contacted the parent and I didn't know, I wasn't aware that this was happening. Liz also shared how she sometimes felt torn between the learner's family and the occupational therapist, "I felt the OTs should have had a conversation with mum before doing stuff like that. I'm stuck in the middle and I have to give her answers" (Liz, CT).

Effective communication between all parties was also identified as being crucial in order to encourage consistency for the learners between home and school. Formal and informal ways of sharing information with the learners' parents and carers were shared by the participants. These were often examples of boundary objects which were able to facilitate boundary crossing by meeting individual and organisational needs, but still maintain a common, shared identity and purpose (Star, 1989, as cited in Akkerman & Bakker, 2011). Formal meetings such as IEP meetings were a commonly cited boundary object and were seen as an important way to build a sense of community with the core classroom team and the parents/carers, "because these kids have such high needs, the therapy team make a point of coming into the IEP meeting, so all the parents have met the OT, the physio and the speech language therapists and they know directly what's going on" (Bronwyn, CT).

Eve gave another example of a boundary object, providing in-services for parents and carers to meet their identified needs as well as a vehicle for enhanced communication

and coordination between them. “We’ve started to do talks at weekends… It's condensing our knowledge so that it's really practical, that's what parents want, they want practical information” (Eve, OT).

Many participants, such as Katrina, commented on the influence that the families had on the teacher’s goal setting and planning.

> *I will give a goal and then the team will talk about it. But still, it depends on the mum, I meet up with the mum and then I'll come back to them and say this is what the mum wants, or mum agreed to the goal that we have talked about or discussed (Katrina, CT)*

This influence occasionally caused tension when extended to an emphasis on therapy or care rather than learning, as illustrated by one occupational therapist’s recollection of a parent saying to her “please toilet train my child, that comes before literacy and numeracy” (Hannah, OT). This was clearly a source of tension and contradiction for the participants.

Generally, the participants identified the learners’ families as a valuable source of information regarding the needs and abilities of their children. The coordination and reflection learning mechanisms were evident when working at the boundaries of practice, they employed different strategies such as communication books or devices to maintain regular and comprehensive communication with the families and carers as a means to enhance communication and enable cooperative ways of working. Families were also identified as being central to this process in order to achieve the best outcomes for the learners, because as stated by Amy “if the child isn't able to generalise something in the home environment where is the learning?” (Amy, OT).

The challenges of working in a large team

Both the classroom teacher and occupational therapy participants identified contradictions that presented when they were required to navigate and coordinate with the often large, additional community of people who were involved with the learners with PIMD and their families. This community often included public health nurses, dieticians, resource teachers (e.g. of the deaf and/or vision impaired), specialist teachers (e.g. for music and/or drama), social workers, a wide range of ACC staff and tertiary students on placements. The occupational therapy participants reflected that

they had an even larger team of people and agencies to deal with, as in addition to those mentioned by the classroom teachers, they also had to liaise with therapy colleagues from other agencies such as the local District Health Board, ACC and wheelchair or other equipment services.

It is known that people with PIMD often have a large team of people involved in their care and education, which can present many challenges when trying to work with these multiple professionals, agencies and organisations (Hood; Nakken & Vlaskamp, 2007; Snell & Brown, 2013). It is perhaps because of this large team involvement that the participants often identified a smaller, core classroom team which generally included the teacher, teacher aides, occupational therapist, physiotherapist, speech and language therapist and the learner's families and carers, who were frequently stated to be very much at the heart of the team around their child. The classroom teacher participants in particular, indicated that they were often the first port of call for families and as such, had a pivotal role to play in sharing information between the other team members and the learner's families and vice versa.

Technology

All of the participants identified information technology as being a useful tool which supported their ways of working. For example, Katrina a classroom teacher, discussed using video as an effective tool for sharing information about the learners with the occupational therapist, leading to new understandings of each other's roles and their shared outcomes.

> *What I try to do now is email the video, so they're updated…and I feel good because they give you feedback and say, "maybe xxx doesn't need that support anymore, as we see from the video he is progressing" (Katrina, CT)*

Another classroom teacher gave an example of how she used a digital portfolio, such as the Seesaw App to share the occupational therapist's activities with families and other interested parties.

> *We post to Seesaw about the student working with the OT. We have to use a kind of teacher speak and say what the learning goal is, and what they were doing, and then you write a comment on what the next step of learning will be (Bronwyn, CT)*

In this comment, Bronwyn spoke of crossing boundaries to be able to translate what the occupational therapist was doing into educational language or 'teacher speak' indicating a familiarity and knowledge about the perspective and intervention provided by the occupational therapist, most likely through a transfer of knowledge from the occupational therapists she was working alongside.

Transfer of knowledge between the two professions

A feature of the way school based occupational therapists are encouraged to work is to build classroom teachers' capacity to improve learners' outcomes through a collaborative model of transferring knowledge between the two professional groups (Missiuna et al., 2012; Wilson & Harris, 2018). The occupational therapy participants in this study identified that their way of working often involved a purposeful transfer of knowledge, and sometimes even a transfer of part of their role, to the classroom teachers. This was succinctly summarised by Greta (OT) who said, "the end goal of everything I do is that the teacher is going to be doing it".

The teacher participants reflected that they generally accepted this transfer of knowledge and most, evidenced by comments from Clare and Frances below, saw this in a positive light and described how they were able to learn from the occupational therapists and adopt this knowledge as part of their practice.

> *I've worked with many OT's and SLT's and Physios who've all contributed to the way I think, rightly or wrongly sometimes, but they've contributed to the way I practice and that build-up of knowledge (Clare, CT)*

> *I found that the way she explained things just sat with me so well. And I felt like I was in a better position to explain why we're doing what we're doing to say a teacher aide or a student (Frances, CT)*

The occupational therapy participants also considered this transfer of knowledge and partial role release in a positive light and spoke of how they thought it empowered their teacher colleagues rather than being present in the classroom which they thought could "make you seem like the expert, and be quite territorial about things" (Eve, OT). However, this experience of empowerment was not shared by all the teacher participants, some of whom saw this as an extra responsibility and a strategy

used by the occupational therapists to compensate for their decreased availability due to time and staffing pressures.

A transfer of knowledge was a tool used by the participants as a means to meet their shared goals as ultimately, the most commendable argument for a transfer of knowledge was that it was in the best interests of the learners, as it placed their needs and goals at the centre of all activities, as expressed by Hannah.

> *When I walk into the classroom, the student is in the centre of everything I do. If I just hold all the knowledge, I have disempowered that child… so everybody that works with him needs to know what we're doing (Hannah, OT)*

Lack of induction and appropriate professional development

Another contradiction arising from the individual interview data was the participants' views that the lack of appropriate induction and professional development available to them often left them feeling unprepared to carry out their roles working in a specialist school with learners who have PIMD. This was in contrary to what the participants perceived to be the expectations of others such as professional colleagues, families and carers, who they thought saw them as being the experts in this area of specialist education and on the needs of learners with PIMD.

The lack of any formal induction or training in their roles also led to their reliance on informal in-school professional development or learning from colleagues, either within their own school or those working at other specialist schools with similar learners. This reliance on other sources was shared by Liz "most of the things you learn is through in-service training, while you're in the job, you pick something up or somebody will say something" (Liz, CT).

The classroom teacher participants were particularly vocal about the need for improved access to professional development to assist them in this specialist area of practice, possibly because there was an expectation that as qualified teachers, they should be able to teach to accommodate any type of learning need. Moana reflected that "nothing at university helped me to become a teacher here, all the assessments, the learning, all that kind of stuff" (Moana, CT).

These comments from Moana and other participants are in accord with the findings of international studies such as the Salt Review, a UK based independent review to investigate teacher supply issues relating to learners with PIMD. This review found that there were very few learning opportunities for teachers applicable to learners with the most complex needs and that there was inadequate coverage of disability and special education within initial teacher training programmes and little or no focus on learners with PIMD. It was also noted that school-based professional development varied widely and that there was a need to increase the frequency and consistency of this (Salt, 2010).

Like the classroom teachers, the occupational therapy participants shared that it was difficult to find formal professional development that was applicable to their work in specialist education, and particularly with learners who have PIMD. The lack of induction, either into their role as an occupational therapist working in a specialist school or with learners who have PIMD was also an area of concern, with some, such as Donna lamenting “I didn't even have an orientation, I didn't have anything, I was just given a box of work” (Donna, OT).

6.3 Summary of contradictions

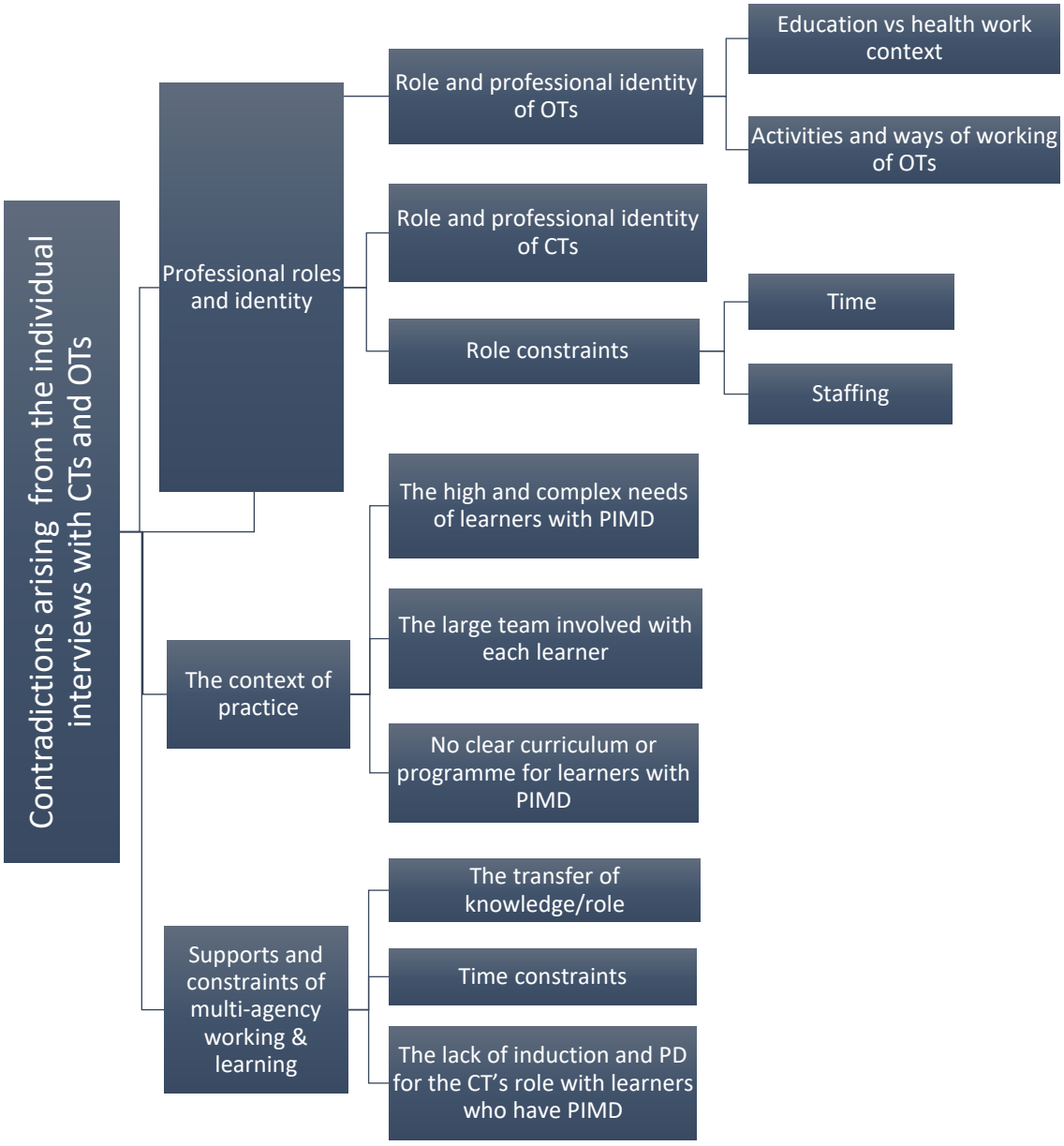
The conceptual framework of AT enabled the discovery of contradictions within and between the activity systems of the occupational therapy and classroom teacher participants, providing an opportunity for the identification and understanding of tensions in their activities and learning to impact on future practices (Engeström, 1987, 1999, 2001). The contradictions raised by the participants during the individual interviews were predominantly within the AT constructs of subject, community, rules and division of labour. These constructs relate to the social and relational areas of the activity systems and therefore impact on multi-agency working and learning. Other important contradictions were identified within the object construct of AT, in relation to the work context and meeting the needs of learners with PIMD.

The contradictions have been grouped into three areas; the professional roles and identity of the classroom teacher and occupational therapy participants, their context of practice working in the specialist school with learners who have PIMD and the

supports and constraints in their multi-agency working and learning, as illustrated in Figure 13 below.

Figure 13

Contradictions manifested from the individual interview data

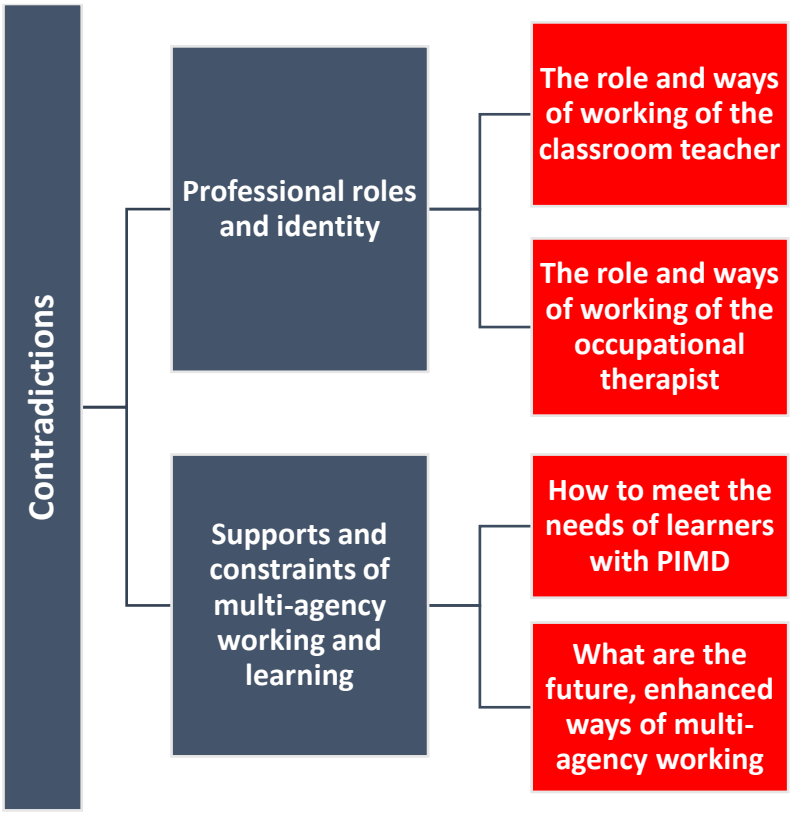


From this information, four convergent contradictions were selected according to their relevance to the research aims and questions, and the frequency of references made to them by the participants during the individual interviews. These contradictions have been kept purposely broad to act as a springboard for discussions at the following

focus groups. Figure 14 below illustrates the two overarching and four key contradictions which will form the basis of the focus group discussions.

Figure 14

Overview of the convergent contradictions



6.4 Chapter Summary

This chapter has reported on the contradictions that were identified from the individual interviews which took place with the classroom teacher and occupational therapy participants. The identification of contradictions within and between these activity systems was a crucial component of this study, as they then formed the basis of the subsequent focus group discussions where an adapted change laboratory method was used to allow the participants to explore these contradictions together, share their views regarding the nature of their joint working practice and to anticipate new, enhanced ways of working.

The findings from the focus groups are reported and discussed in the following chapter.

Chapter 7 Multi-agency learning in the focus groups

7.1 Introduction

This chapter reports on the conclusions from the two focus groups and will provide insights into the multi-agency learning that took place. As outlined earlier in Chapter 4, Engeström's third generation model of AT provided the conceptual framework to understand the dialogue, multiple perspectives and networks of the interacting activity systems of the occupational therapy and classroom teacher participants in this study (Engeström, 2001). AT emphasises the boundary between these activity systems, and the potential for expansive learning that requires people to engage in boundary crossing as they work and learn together to develop new understandings and a shared focus for their joint effort towards the object of their activities (Engeström, 1999, 2001).

The change laboratory approach is central to AT's analysis of learning in practice and was used as a guide in the focus groups, and to support the learning of the participants by directly engaging them in the analysis of their own activity system. Holding up this metaphorical mirror to the participants perceptions of their working practice enabled the surfacing of contradictions to inform their expansive learning (Engeström & Pyörälä, 2021). This framework also allowed the opportunity for dialogue to take place between the researcher and the research participants in order to co-construct new understandings about their current ways of working and to surface discussion and ideas about the future.

7.2 The Focus Groups as boundary zones

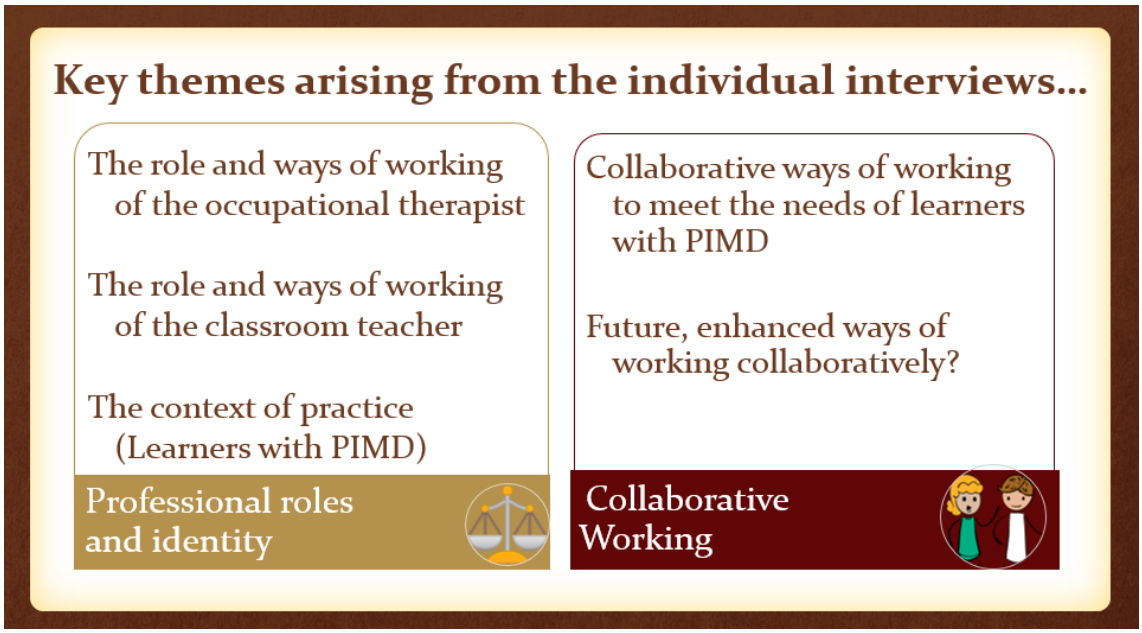
Learning in multi-agency teams may be supported by the creation of boundary objects such as the focus groups themselves, which can be identified as boundary zones: a neutral space where the values and professional priorities of each participant could be respected, information could be shared and learning take place (Edwards & Kinti, 2009; Greenhouse, 2013).

At the beginning of each focus group, the researcher set the scene by giving a short presentation to share some examples from the transcripts from the individual interviews and the key contradictions raised by the participants during their individual

interviews (Appendix G). This information formed the basis of the mirror data which was presented to the focus group participants.

Figure 15

PowerPoint slide introducing the themes to the focus groups



The aim of using this mirror data was to encourage expansive learning by providing a reflection of the participants activities and current practice, as well as an opportunity for them to comment, counter, elaborate and engage with this information to produce additional discussions and data that could potentially yield "powerful knowledge and insights" (Kamberelis & Dimitriadis, 2013, p. 15). To facilitate the discussions, the data was presented under the headings 'professional roles and identity' and 'collaborative working' with subheadings: the role and ways of working of the occupational therapist; the role and ways of working of the classroom teacher; the context of practice and meeting the needs of learners with PIMD and lastly ideas for future, enhanced ways of multi-agency working between the classroom teacher and occupational therapists. Discussions on these contradictions, and additional ones which arose during the focus group discussions are reported throughout this chapter. A summary of the identified contradictions and subsequent ideas for change are then provided in table form in response to the appropriate research questions.

7.3 Contradictions and tensions

The role and ways of working of the occupational therapist

> *"I was asked, what do you do? You just do everything!" (Greta, OT. FG1)*

The need for clarification of the role of the occupational therapist working in the specialist school with learners who have PIMD was a recurrent topic within the focus groups, mostly initiated by the occupational therapists themselves. Similar to during the individual interviews, the occupational therapy participants stated that they struggled with their professional identity and role in the educational domain of the specialist school to a much greater extent than if they worked in a medical or traditional rehabilitation setting where the presence of an occupational therapist as part of the team was more commonplace. There was clearly still some confusion about what the role was, or should be and they spoke of some of the strategies they used to help clarify this for themselves, and for others in the team.

> *When I first came into working with kids with PIMD, was so unclear on what my role was, because it was so broad. I ended up writing my own role description… a very detailed 'what I do and what I don't do' just so that I could actually say no to things, (Greta, OT, FG2)*

A recurring discussion in the focus groups related to how the occupational therapy participants identified and reflected on their professional identity and how they thought others viewed it. The learning mechanism of reflection was evident in these discussions at an intrapersonal level, when the occupational therapists began to look differently at their own ways of thinking and their engagement in various practices, and also at an interpersonal level when they came to value and consider the perspective of the classroom teachers.

The classroom teachers were able to articulate what they understood to be the role and activities of the occupational therapists and shared with them that they considered any ambiguity around their less defined area of practice to be an asset, as it meant they were able to be flexible to meet the teachers' needs for support as well as tailor their interventions to the specific needs of the learner. Some, such as Frances commented that they thought it was this flexibility and ecological stance that added to the value of the occupational therapists' role. "I think OTs have a much better sense of

the well-being of a child …you have a much deeper sense of the child that you're working with" (Frances, CT, FG1).

Although there was acknowledgement of the wide, diverse role of the occupational therapists when working with learners with PIMD in the specialist school, the focus group discussions indicated that the need for clarification of the role was not an issue for the classroom teachers but was instead struggle for professional identity within the occupational therapists themselves to reinforce their own understanding of their role in this setting. This finding is in line with those of other studies where the professional identity and lack of clarity around the role of occupational therapists has been an issue, (Moir et al., 2021; Molineux, 2011; Turner & Knight, 2015; Wilding & Whiteford, 2007, 2008, 2009).

The occupational therapists' ways of working also generated discussion. For example, when reflecting on their experiences of the occupational therapy service delivery model, the classroom teacher participants reflected that the amount of time the occupational therapists were physically present in the classroom had reduced compared to previous times, particularly for 'hands on' intervention. This was experienced by the teacher participants as coming at a time when their needs and the needs of the learners were increasing.

Occupational therapists working in schools are known to apply a wide array of intervention methods (Cahill & Bazyk, 2020). The participants' discussions reflected their perceptions that school-based occupational therapy intervention has been encouraged to shift from a traditional 'pull-out' model, where an occupational therapist might withdraw a learner from class or work 'hands on' with them in the classroom, to one where the therapy goals are increasingly embedded and integrated into the everyday classroom programme (Ericksen, 2010; Salazar Rivera & Boyle, 2020). There was also an acknowledgement from some of the occupational therapy participants that although they believed that this approach was less time consuming, being able to deliver these interventions that support access to and participation into classroom activities presented them with many challenges. They expressed a feeling of fatigue and burn out with one occupational therapist sharing how she struggled to

complete all the tasks she needed to do. When asked how this made her feel, she replied “Guilty, there’s definitely a lot of guilt…I’m just firefighting (Donna, OT, FG1).

The key role played by the occupational therapists in assessing, prescribing, and ordering equipment drew lots of discussion within the focus groups. A suggested solution was that the occupational therapists share or relinquish some of their activities in relation to the provision of assistive equipment for learners, for example Clare, a classroom teacher wondered whether “in the future, OTs need to lose equipment roles such as doing wheelchairs”. In the exchanges regarding this topic, both the occupational therapy and classroom teacher participants agreed that the time spent by occupational therapists, particularly on wheelchair seating could potentially be carried out by someone else. These discussions highlighted two key contradictions, firstly that the occupational therapist’s responsibilities when prescribing and ordering equipment, although important, were seen to take up too much of their time, leaving less opportunities for other, more valued activities. These discussions also reflected contradictions raised in the individual interviews where there was a perceived reduction in the occupational therapist’s time, presence and availability to work with learners with PIMD.

Aligned with the coordination learning mechanisms, Joanne also commented on the complexity of wheelchair seating assessments and her willingness to work across professional boundaries to work collaboratively with her physiotherapy colleague to create new ways of working.

> *I still get the physio to help me when I'm not sure about the seating or the positioning, because the kids are so complex, I don’t think it’s a good idea to make those decisions by yourself, because there’s often more than one way to go (Joanne, OT, FG1)*

Time constraints were frequently cited as a concern, however in another discussion an example was given by an occupational therapist who thought that they were much better equipped to carry out assessments for home-based activities and equipment for learners with PIMD, despite this not being a requirement of their role but rather an identified role of community based occupational therapists employed by the District Health Boards.

> *Sometimes for the older students we end up doing some of the community OT stuff…because, I know the student, I know the family. For instance if it is teaching a 19-year-old boy showering, to get a community OT to go in and do that, they don't know the context, the structure, they've not got the relationship…strictly speaking it's a community OT role because it's not curriculum or education, but because we know the family, we do it (Amy, OT, FG2)*

This statement was clearly made with the best interests of the learner and their family at its centre. However, there appeared to be little insight that this contradicted previous discussions regarding the occupational therapists' already extensive role in equipment. There was also no evidence of an attempt to communicate with the community-based therapist to create more cooperative, and possibly more effective, ways of working as an example of the coordination learning mechanism. Any learning in this area therefore focussed more on tensions within the participants own activity systems and their own or each other's professional roles and needs, rather than on achieving optimal outcomes of the joint focus of their activities.

Although the initial focus group discussions centred around clarifying each other's roles, it became evident that the majority of the participants actually had a good understanding of what these roles were but thought that others outside their close working team may not have such knowledge.

The key suggestions that emerged for the occupational therapy participants in this study related to their professional role, identity and ways of working and the perceived limited availability and access to them by learners and classroom teachers. Whereas, for the classroom teachers, the suggestions related to an acknowledgement of their different, specialist role in this setting and the tools they had available to work with the learners with PIMD. Some of the suggestions for change in this section therefore also relate to the context of practice discussed in the following sections.

The blurring of roles and boundaries when professionals work and learn together in highly specialised multi-agency teams is often expected due to the complex nature of their work (Gaskell & Leadbetter, 2009). Some of the occupational therapy participants in this study reflected that their particularly close collaborative ways of working with other therapies in the specialist education setting had contributed to this blurring, or possibly even an encroachment of their roles. This illustration of the identification and

reflection learning mechanisms enabled the occupational therapy participants to highlight a boundary, and the crossing of this boundary, as they demonstrated their awareness of new tools and objectives used in another activity system and their openness to learn and enhance their way of working, such as in this example by Hannah.

> *Because we work together with the physios, you have some of the answers, so the teacher will ask what do you think of this? And I'm thinking, well, I think the physio might have a better answer, but there is that blurring because we have a very collaborative way of working at our school, the knowledge is shared amongst the team (Hannah, OT, FG2)*

This blurring of roles was defended as being necessary to facilitate a robust way of working between the three key therapies present in the specialist school in order to meet the particular complex needs of the learners with PIMD.

> *Today was a classic example, the physio and I do a session together with a very, very complex student that we're not making any progress with and are figuring what could be the next step? So she's going to work on some of the physio stuff, but then we bring in the sensory stuff so together we can look at that sensory support for that student…without her knowing the sensory part, she can't do her stuff (Hannah, OT, FG1)*

During these discussions, Moana, one of the classroom teachers, described how she viewed the relationship between the three therapies as they present in her classroom and was greeted with nods of agreements from the other participants.

> *There's like almost this Venn diagram… the OTS in the middle, and then you've got your SLT and PT, and they do cross. So, that's why the OT is always fundamental… the other therapists have their role as well, but the OTs are central to it (Moana, CT, FG2)*

Generally, the blurring of the OT role was not viewed negatively, either by the classroom teachers or by the occupational therapists themselves. However, it is suggested that this accepted boundary crossing of the occupational therapist's role may have contributed to further confusion and lack of clarity in relation to the role.

The context of practice

> *"We're always challenged. Our principal says, are we a school or are we a hospital?" (Hannah, OT, FG1)*

Professionals interact in environments that present a range of organisational constraints as well as opportunities, which adds to the level of complexity (D'Amour et al., 2005). The perceived reality of both the classroom teacher and occupational therapy roles were discussed in the focus groups as being inextricably linked with their context of working with learners who have PIMD in the specialist school setting. The school setting was more familiar to the classroom teacher than the occupational therapy participants, however the difference in their role from their teacher colleagues in regular schools was identified as being more pronounced. Both of these perspectives were evident during the discussions relating to their shared context of practice.

Discussions relating to the competing priorities between the educational and learning goals versus the therapy and care needs of learners with PIMD in the specialist school setting featured prominently in the focus groups. All schools, regular or specialist, profess to cater for the 'whole child' however, it is often the case that the level of personal care required for learners with PIMD, as well as their profound learning disability can emphasise the degree of difference between the needs of this group of learners in comparison with those of their more able peers. This is a topic of debate well covered in the literature (for example, see Ainscow et al., 2019; Hogg, 1999, 2007; Petitpierre et al., 2007; Ware, 2018) and was also a key theme of the findings in a previous study carried out by the researcher, where it was acknowledged that the role of the specialist school for learners, such as those with PIMD, was not purely for educational purposes, but also had to cater for the needs of the whole child (Laing, 2012). The learning goals and programmes for learners with PIMD are also often very different from those of their same-age peers due to the difference in their anticipated pathways once they leave school (Lyons & Cassebohm, 2012; Ware et al., 2005).

Learners with PIMD were recognised by the participants as being a different type of learner, distinct even from other learners within the specialist school, requiring all those working with them to make personalised, professional responses to their individual needs. This significantly impacted on the way the classroom teacher and

occupational therapy participants worked with these learners, and with each other. For example, the learners' needs for physical care and intensive support with positioning and activities of daily living such as feeding and toileting demanded much of the teacher and support staff's energy, expertise and time, which meant that there was less time available for learning activities, and in concurrence with the findings of Vlaskamp and Nakken (1999) the importance of these activities were often then undermined. From the discussions which took place in the focus groups, it was obvious that the distinct needs of learners with PIMD and the conflicts of their education, therapy and care needs was one that the teachers, occupational therapists, and their managers had given some thought to.

In the first phase of data collection, several comments were made by the occupational therapists during the individual interviews regarding what they thought should be the role of teachers in the learning goals and their perception that there were insufficient classroom activities relating to these goals for learners with PIMD. No comments to this effect were made in the focus group discussions, possibly to avoid offending the classroom teacher participants. However, many of the teachers themselves identified how they struggled with the conflicts between the educational goals and the reality of the classroom programme when trying to juggle the therapy and care needs of the learners and comments were made by the classroom teachers in both focus groups, such as Clare who reflected on how she adapted to these differing demands.

> *If our children aren't comfortable, they're not able to engage in their learning. So you have to deal with all the care as well, their oxygen needs, their feeding needs, almost become your priority… it becomes about making those relationships with the students and being able to utilise some of the times of communicating. I love going in the bathroom [with the learner], because it's nice to slow the process down and actually get the student engagement... it's about using education, spread across the day (Clare, CT, FG2)*

Family support for educational goals

> *"the parents' biggest focus is on whole of life skills"*

Because of the complexity of their child's needs, the families and carers of learners with PIMD are often the spokespersons for their child, and as such were considered by the participants to be very influential in the way their services were provided. The

participants in the focus groups noted that families and carers also played a more prominent role in the setting and planning of goals and, as in the individual interviews, reflected that they often placed more emphasis on a need for quality of life for their child and the attainment of practical and physical skills rather than working towards educational goals. An example of this was given by Hannah who expressed her frustration to the group about being in an IEP meeting *"and just getting all the goals from parents around whole of life" (Hannah, OT, FG1).*

During the second focus group, Clare shared her view that the parents' goals are not always aligned with the classroom goals and how this could be encouraged "I also wonder whether parents actually just want their child to be happy and comfortable and actually, goals and programs don't always enter into it. It's then for us, as teachers to say, well, they're actually achieving this, and they're doing this (Clare, CT, FG2)

The participants perspective of the family priorities was considered to be at odds with the rights of the learner to access appropriate educational opportunities. As an example of the learning mechanism of coordination, the participants identified the need to create more cooperative and routine exchanges and information sharing between school and home to help to align these goals and recognised the important role they played in this "…they are relying that we are going to guide them in the right way, steer them in the right way" (Noah, OT, Fg2).

In order to support families in their important role, the participants identified a need for more information to be made available to them about the role of the occupational therapist, both within the specialist school and in the community because as shared by Noah "*in my experience, I think parents of these students know the least about the role of OT beyond equipment…there is more we can do than this" (Noah, OT).* There was also a suggestion that some families were more disadvantaged than others and that a special effort was needed to provide information about what was available for their child.

Lack of clear curricula for learners with PIMD

"We do the best we can with the things we have" (Bronwyn, CT, FG1).

Similar to the viewpoints on this issue shared in the individual interviews, both focus groups had lively discussions on how the learners with PIMD do not 'fit' into most of the curricula that other learners, even within the specialist school setting might use. It was evident from the discussions that a wide range of resources were used to try and cover all areas, with no real consensus being reached on which was most useful.

It was evident that the absence of an agreed curriculum for learners with PIMD and the lack of guidelines to inform them how to assess or signify achievements, was a cause of frustration for the participants, particularly the classroom teachers. The occupational therapy participants identified that this deficiency was also a boundary to their ability to have consistent occupational therapy practice across different classrooms. This was discussed in the second focus group where the lack of a consistent curriculum was identified as impacting on the occupational therapy participants and how their way of working was expected to change between different classrooms and teachers "As OTs going into these classrooms, it's really an interpretation of the teacher's interpretation of the curriculum for the students. We're not always going into the same sort of model or approach of teaching" (Noah, OT, FG2)

This discussion illustrated a key learning point for the participants in the focus group who shared that they had never thought about it in this way previously "all the teachers I worked with had different priorities, different ways they were teaching. Some were very strong in literacy, and numeracy. Others were much more interested in the multi-sensory. I just adapted" (Greta, OT, FG2).

The lack of an agreed curriculum was identified by the participants as a systemic issue which raised contradictions in their practice. There was an acknowledgment that this was a shared problem and throughout the discussions, the participants shared their commitment to carry on in order to meet the particular learning style and needs of the learners.

Summary of contradictions and tensions

The identified contradictions and ideas for change in relation to the professional roles and identity and the context of practice are outlined below in Table 9 in response to the appropriate research question.

Table 9

Professional roles and identity and the context of practice

Research question	Identified Contradiction	Description	Idea for change
How do classroom teachers and occupational therapists construct their professional roles when working with learners who have profound intellectual and multiple disabilities?	Prioritisation of how the OT spend their time	The OT's role with equipment was seen as being overly time consuming and detracted from their role in addressing the other needs of the learners.	Review/change the OTs' role in the ordering and prescribing of equipment, especially wheelchairs
	The differences for the OTs between working in a school versus a health /clinical environment	Confusion about OT role working in specialist education as opposed to a health or rehabilitation environment.	Creation of a job description for OTs working in specialist schools.
	Occupational therapy staffing	Lack of OT staffing, inconsistent across sites.	The use of a standardised formula across all specialist schools for OT staffing for learners with PIMD (perhaps aligned to their ORS funding).
	The role and ways of working of the classroom teacher	Teachers working with learners with PIMD feel their professional role and expertise in this area is undervalued	Recognition of the specialist role of teachers in their role with learners who have PIMD.

Research question	Identified Contradiction	Description	Idea for change
	Participants identified lack of clear curricula for learners with PIMD	Further guidance for needed regarding curricula, resources and pedagogies to meet the needs of learners with PIMD, based on evidence-based policy and practice.	It is recommended that this is explored and implemented at a National level
	Participants identified that there was a lack of induction and professional development	There was very little induction to their roles and the majority of available PD was not relevant to their work with learners with PIMD in specialist schools.	A formal induction programme is required. Local and international sources of PD relevant to working with learners with PIMD could be compiled.

A key message from the classroom teacher and occupational therapy participants in this study was one of advocacy for the learners with PIMD. These learners make up a very small percentage of those in the education system, but the participants strongly felt that they deserved the right to have their individual needs recognised, acknowledged and met.

The important role played by the families and carers was also raised by the participants, who identified that targeted strategies were needed to improve communication and joint working and planning with the families and carers of learners with PIMD. Identified contradictions and ideas for future ways of working in this area are also outlined in Table 10 below in response to the appropriate research questions.

Table 10

Learners with PIMD and their families/carers

Research question	Identified Contradiction	Description	Idea for change
What activities do classroom teachers and occupational therapists engage in, which support or challenge their multi-agency working and learning?	The need for a raised awareness of learners with PIMD in the New Zealand education system	There is no current data about how many learners with PIMD attend schools in NZ, or how their needs are being met.	Data to be gathered at a local National level
	Meeting the information needs of the learners' families.	Teams working with the learner and their families need to create multi-agency practices with families and carers in recognition of their role as key communicators and advocates for their child.	Information created on strategies and resources for working collaboratively with families of learners with PIMD
			Discussion at a policy level to inform how decisions are made regarding how education and therapy programs for learners with PIMD are developed and funded.

7.4 Boundary crossing as supports and constraints of multi-agency working and learning

> *Often, I think I need a post grad paper in either doing a therapist role or doing a nursing role, because as a teacher you are in between the many roles (Moana, CT, FG2)*

Studies of boundaries often focus on the effects and challenges of multi-agency collaboration of professionals with different expertise, tasks and cultural backgrounds in culturally and historically layered contexts (Akkerman & Bakker, 2011).

The crossing of boundaries within the practice of classroom teachers and occupational therapists working with learners with PIMD was anticipated due to the high degree of specialisation and collaboration required in these roles. The participants voiced their commitment to work collaboratively both with each other and with the other team members. Their key motivation for this way of working was the joint object of their activities which they identified was to achieve the best possible outcomes for their learners who have PIMD. Object-oriented actions are very important to facilitate the reflection learning mechanism of perspective making and taking as well as interpretation and sense-making, they are also key drivers for change to occur (Kaptelinin, 2005; Sannino & Engeström, 2018). The joint object of their activities identified by the participants was a large, open ended one which they themselves found difficult to specify. However, this does not undermine the importance of having this as a vehicle for the learning mechanisms of boundary crossing. Communicating this joint motivation to achieve their common goal of achieving best possible outcomes for the learners with PIMD was a powerful factor in how they were able to work collaboratively to make sense of their activities, give them meaning and also allow a mutual understanding between their two professions.

The factors which the classroom teacher and occupational therapy participants identified as having influenced their multi-agency working and learning are discussed in this section across five boundary crossing areas : relationships, communication, working with the wider team around the learner, the need for targeted induction and professional development and lastly, the transfer of knowledge.

Relationships

Relationship building was identified by the participants as one of the most important aspects in the success of their effective multi-agency collaboration. Throughout the discussions, the participants often spoke of why they believed the quality of their relationships was important and it was evident that some strong trusting relationships had already been established within those attending the focus groups which contributed to achieving a safe space for contradictions to surface and be addressed. However, whether or not this had been attained, the participants were in agreement that the founding of a positive relationship was something that they valued and worked towards. For example, Greta an occupational therapist, spoke of the

importance of establishing a relationship with a new classroom teacher “whenever I went to work with a new class or a new teacher, my first primary goal was to make a relationship with the teacher because everything was dependent on that” (Greta, OT, FG2)

There was also evidence of relational agency (Edwards, 2005, 2011), where the practitioners, such as Noah, demonstrated that they were able to work together to enhance their response to complex issues “we go in with two ideas, and we come out with one and it really is exciting” (Noah, OT, FG2).

Some of the occupational therapy participants acknowledged that they had not always been able to achieve their best collaborative practice due to challenges with relationships. Their discussions showed that they were acutely aware of the time and consistency needed to achieve these relationships, and the detrimental effect that this could have on their work practices and ultimately on the outcomes for their learners and their families if this were not achieved “If I don’t have the right relationship with the teacher then that student is compromised because of our relationship” (Hannah, OT, FG1).

The classroom teacher participants also agreed that there were no negative aspects to working towards the achievement of positive relationships, especially when the needs of the learners were prioritised. A positive working relationship was seen as an important foundation for the transfer of knowledge to take place between the two professional groups, which was also considered to have positive outcomes for the learners. The transfer of knowledge was discussed as being predominantly from the occupational therapists to other members of the classroom team, to add to their skill base and enable them to support the learner to work towards occupational therapy goals.

> *It's all about that practice… if we’re just withdrawing them once a week or going in for an OT session once a week, it's not happening, they're not going to get the skills…they need to be practicing their goals, that needs to be happening every day. You need to support teachers to build it into their day to day… we need to be supporting to build it into the curriculum (Donna, OT, FG1)*

Although relationships between the occupational therapy and classroom teacher participants were considered to be key to their successful multi-agency working and learning, this did not always occur easily. Working with occupational therapists was often a new experience for the teachers, and vice versa for the occupational therapists due to their different professional worlds. Increased opportunities for familiarisation and collaboration between classroom teachers and occupational therapists at an undergraduate level was suggested as a new contradiction in the focus group discussions. This was not raised in the individual interviews or already mentioned under another category but was advocated by the participants to promote collaboration between the two professions at this formative stage of their professional lives. Undergraduate training is often an opportunity for different professions to learn about each other's roles and build relationships, Moana shared her views on she thought what was needed at this level.

> *Special needs aren't always taught in depth at those undergrad levels, and definitely not PIMD. I definitely think a component should be, not just for OT but also SLT and PT, knowing those roles and what can benefit us in the classroom with the students (Moana, CT, FG2).*

Communication

Because of the differences in frames of reference and approaches between occupational therapists and classroom teachers, effective communication across professional boundaries is considered to be a prerequisite to their multi-agency working and learning (Case-Smith & Cable, 1996; Cheminais, 2009; Hood, 2012). The participants identified many different communication tools such as emails, texts, shared drives, photographs and videos and reflected that these were crucial to help reduce barriers and facilitate timely and effective communication.

The identification and use of tools is important within AT as they are viewed as a link between the concrete artefacts (such as photographs or emails) and with the conceptual understandings which shape how they are used (Edwards et al., 2009; Vygotsky, 1978). They can also be viewed as cultural-historical items that take on the role of boundary objects and facilitate boundary crossing by meeting both individual professional and organisational needs, while maintaining a common, shared identity and purpose (Star, 1989, as cited in Akkerman & Bakker, 2011). Assessments and

reports that were initiated by tools such as the IEP process or the Seesaw application were also able to demonstrate that coordination had taken place, by evolving into new projects such as joint programmes or checklists as the participants exchanged information and ideas.

The tools used by the participants also occasionally spoke for themselves due to the perceived pre-existence of a positive working relationship between them, as in an example given by Frances.

> *You become so familiar with the OT that you're talking to, you can generally just flick a photo through to them, you don't need the whole explanation because they know what that photo is going to be about (Frances, CT, FG1)*

However, although the participants agreed on the importance of technology for communication it was not seen as an adequate replacement for verbal or face to face contact "even if they've sent me an email I'll go in and say I've just got your email and have a quick chat" (Noah, OT, FG2).

Face to face meetings were consistently identified as the preferred way of communicating with each other. The identification of this issue led to some discussion and the possibility for a transformation or change to occur in the types of communication used. For example Clare advocated for shorter, more frequent face to face meetings which she suggested could also be a better use of time available *"sometimes with those face to face conversations, you can get it done in five minutes or less …as opposed to having five or six conversations via email"* (Clare, CT, FG2). The perceived lack of time and availability identified by both the occupational therapy and the classroom teacher participants, also meant that they felt that meetings were often scheduled less frequently and/or were shorter.

Working with the wider team

As in the individual interviews, the participants in the focus groups also acknowledged the challenges of working with the large team of people and agencies involved with each learner and their family and noted that communication and the sharing of information were often made more difficult because of this additional complexity. Despite this, there was a recognition of the value and need for the many different

professionals and agencies to be part of the school team in order to meet the needs and priorities of learners with PIMD and their families and that if this was achieved, the whole team were more likely to share a common vision, which in turn supported their multi-agency collaboration and communication. For example, Bronwyn noted that “the problem is a multidisciplinary, complex one, you need all hands-on deck” (Bronwyn, CT, FG1).

It is generally accepted that individual, fragmented interventions are not best practice (Doran, 2012; Hood, 2012), so the emphasis placed by both the classroom teachers and the occupational therapists on the need for collaborative working with each other and with the wider team was reassuring. Designating a lead professional or key worker to act as a single point of contact for families and all those working with learners was raised as a practice which could aid communication and help to coordinate the many services and professionals involved. The concept of a key or lead worker where one person is identified as a single point of contact for each learner and who coordinates their interventions across all areas, is one that has long been discussed and promoted both in Aotearoa New Zealand and internationally in many different work situations involving children and young people (for example, Greco et al., 2005; Sloper et al., 2006). The feedback from the participants in this study suggested that this is a role which has informally been adopted by the classroom teacher, as it is they who are with the learner throughout the school day, communicate regularly with the parents/carers, attend most meetings and have an overview of visits to the learner by other team members.

There was agreement from all the participants in this study that communication was at the heart of establishing a positive relationship with the learner’s family and again, tools such as technology were cited as having a role to play. For example, the use of the Seesaw App, which shares a learner’s digital portfolio, was discussed as creating valuable opportunities for information sharing and relationship building with families and carers “they can see exactly what is going on, they love it, they know the goals, they see what their kids are doing, what they are learning, what the next step is. It just helps communication and that relationship” (Bronwyn, CT, FG1). “It’s a little window into the classroom” (Joanne, OT, FG1).

The lack of appropriate induction and professional development

Although the participants in this study acknowledged the formal structures that supported their practice, such as their professional registration processes, and for the occupational therapists the requirement to have clinical supervision, there was a major concern raised relating to the perceived lack of induction to their roles working with learners who have PIMD in the specialist school environment. The occupational therapy participants were particularly vocal in their recognition of the need for additional support in this area, possibly impacted by their difficulties in clarifying their professional role in the specialist school setting “having more of a solid what we do what we don't do for OTs to follow, particularly when new grad OTs come in, or someone who hasn't worked in special ed, so they are not pulled around for a year and a half not knowing exactly what they cover or not" (Greta, OT, FG2).

The idea of having a bank of resources to support the work of the occupational therapist was suggested by them and Liz , a classroom teacher also thought that this could be equally useful for teachers, indicating that this type of resource could act as a boundary object which would facilitate shared activities and shared learning (Star, 2010) “the OT can say, have you tried this? This is a bank of things to try next term… because then you know you're not sticking with the same thing. Its new input for us teachers” (Liz, CT, FG2).

It was identified as a concern to both the classroom teacher and the occupational therapy participants that there was some loss of specialisation in their roles. Some reflected on the reasons for this, for example for Hannah because she was required to work with learners who had a wide range of needs and Moana because she was cognisant of adopting other roles in addition to her teacher role. “That’s what we feel is getting lost, that expertise with learners with PIMD and cerebral palsy, we are becoming more generalised” (Hannah, OT, FG1).

Transfer of knowledge/role release

> *We as teachers have to become an SLT, PT, OT, a carer, a nurse, all those things (Clare, CT, FG2)*

The adoption of ideas from one person to another can lead to a transfer of knowledge (Engeström & Sannino, 2010). The occupational therapy participants reinforced their

comments made in the individual interviews that they acknowledged a partial shift from direct to consultative models of service delivery which had also emphasised the need to share their knowledge and role with others in the team, especially the classroom teacher. Hannah, an occupational therapist gave a brief account of this transfer of knowledge from their perspective, “If we've got a new teacher who's just come in, then you are spending a lot of time, so that that teacher catches up and gets the knowledge" (Hannah, OT FG2).

Some of the occupational therapy participants, such as Noah, reflected that they were unsure of the benefits of this way of working.

> *It has allowed us to share our knowledge more… because we can't be there all the time, so I think the sharing of our knowledge has increased, and I think that's been quite a benefit… but what frustrates me is when I go in and what I've shared, there isn’t the theory behind it, it’s only their perception, so I'm always having to rejig and remodify (Noah, OT, FG2)*

In another focus group, Bronwyn and Frances, both classroom teachers, saw the transfer of knowledge as a positive step, aiding collaboration. For example Bronwyn stated, “I find it positive, it’s like an updating” (Bronwyn, CT, FG1) and Frances spoke of appreciating the sharing of knowledge that “comes when you collaborate” (Frances, CT, FG1).

A transfer of knowledge was generally seen by the study participants as being helpful to support their multi-agency working and learning. However, there were also some real concerns that this practice may contribute to a perceived blurring of their roles and boundaries (Gaskell & Leadbetter, 2009). For example, two of the occupational therapy participants expressed their concern about how transferring their knowledge to classroom teachers might adversely affect or undermine their role.

> *I think we need to advocate for the services we do provide, we have to be careful as well, because we just have to look after our role and what we do. We don't want to say, oh, well, because we've trained that teacher we can step back, (Donna, OT, FG1.)*

Although, the majority of the discussions in the focus groups related to a transfer of knowledge from the occupational therapist to the classroom teacher, there were also

some examples of a transfer of knowledge from the classroom teachers to the occupational therapists and to the teacher aides, which was seen as being overwhelmingly positive by all participants.

> *I'm quite new to OT and I felt that I had to be guided by the teacher in the class. I was lucky that she was experienced in working with therapists and OTs, so I was guided a lot about what I needed to do and where she needed OT support (Noah, OT, FG2)*

> *It's good I think, from the teacher's perspective to understand what you're doing, and then share that with other people because it gives you the why you're doing it, and then you can pass it on to teacher aides, so they don't overdo something or under do something (Clare, CT, FG2)*

Use of a boundary crossing lens helped to explore the multiagency learning that occurred between the classroom teacher and occupational therapy participants when they were able to share and adopt each other's ideas which in turn could lead to a transfer of knowledge (Engeström & Sannino, 2010), for example when they became aware of new tools or objectives that they were then able to also adopt. This transfer of knowledge was discussed from the occupational therapist to the classroom teacher and vice versa as well as to and from the learners' families and carers. This led to the emergence of a new topic of discussion where the participants advocated for this transfer of knowledge to also take place between them and the learners' families and carers. However, an underlying motivation for this was in part, due to the participant's aforementioned perception that some families needed support to shift their focus from care and therapy towards the learning goals and achievements of the learner.

> *We still need to do lots of education for our families around the fact that these students still have the potential to learn. I think that's where our journey is, in terms of the future and really engaging our families on how we can engage our students to learn. A lot of the time it's about cares. When I talk to the parents, I'm thinking, this is all around the cares… we need to do some education about the learning (Hannah, OT, FG1)*

The reflection learning mechanism is described as being either perspective making or perspective taking, (Mesker et al., 2018). An example of reflection was evident in one of the occupational therapy participant's attempts to adapt to new situations and to

seek compromises with their classroom teacher colleague, also recognising the crucial role that each play in being able to successfully carry out their own roles.

> *If we're designing a program, she'll say to me what she wants. I've learned how she works, what she wants, and then I'll input, and then we go for our percolation time. Then we come back, and we usually come out on the other end with something pretty strong (Noah, OT).*

This particular example also indicates use of the coordination learning mechanism where communication and joint working has enabled new knowledge and change to occur.

Perspective taking was also displayed when rules or structures were identified as being a constraint, when an incongruity was highlighted between the needs of the school and the needs of the learners, or in this example from Clare, the needs of the classroom teacher when attempting to carry out her role in the face of organisational rules which she felt constrained her practice, "I find that type of thing constraining, that I suddenly have to fit into another box, when I feel that the students learn best in a certain way" (Clare, CT).

A further discussion took place in the second focus group between Clare and Noah, which gave an additional example where reflection, and perspective making and taking was occurring.

> *I might get to a point that I've got some of the information, but I need a few more pointers and those pointers are often the turning point for me to get on and finish it (Clare, CT, FG2)*

> *It's almost like being the catalyst for other information, that unpacking and then you get to breaking it down (Noah, OT, FG2).*

> *Often coming in from a different viewpoint actually makes you see the issue from a different perspective. And then helps you to say, okay, I did this, and this. Whereas I might be going off on a tangent and speaking to an OT might bring me back into a slightly different one, or look at it from a different perspective, which could then enable the outcome to be achieved more successfully (Clare, CT, FG2)*

7.4.1 Suggested new ways of multi-agency working and learning

The commitment of the participants in this study to work collaboratively in multi-agency practice was evident throughout the discussions and they were able to envisage key ideas through shared learning to develop principles for improving their multi-agency working. The identified contradictions and ideas for new ways of multi-agency working and learning are outlined below in Table 11 in response to the appropriate research question.

Table 11

Multi-agency working and learning

Research question	Identified Contradiction	Description	Idea for change
How do classroom teachers and occupational therapists construct which factors will have a positive effect on their future multi-agency collaboration when working with learners who have profound intellectual and multiple disabilities?	Lack of time	Time needed by needed by CTs and OTs to share information and create positive working relationship	Recognition and support by school by management and MoE of the time and resources needed to facilitate this
	Challenges of working with the large team around the learner	There is often a large team of professionals and agencies who are part of the team around the learner with PIMD	Acknowledgment by school management and MoE of and the challenges and opportunities that this brings to multi-agency working and learning
	Better coordination of information and practices related to the learners with PIMD and their families.	A need was identified for a person who could act as a single point of contact for families and all those working with learners	Formal identification of a lead professional or key worker (possibly the classroom teacher).
	Lack of familiarity with CT /OT roles	More opportunities for pre-service collaboration between undergraduate teachers and the specialists who work in education such as OTs.	Issue could be highlighted with tertiary providers

7.5 What learning took place?

The focus groups achieved their aim of stimulating discussion between the classroom teacher and occupational therapy participants, allowing them to explore new ways of working in response to the complexities and contradictions they identified in their ways of multi-agency practice. However, it was very difficult to determine what

learning actually took place. Although topics such as professional roles and identity were discussed quite openly by the participants, deeper discussion and awareness of what this meant in practice was more challenging to achieve as many of the contradictions and suggestions made during the focus group discussions regarding roles and ways of working reinforced the participants' own understanding of their role and remained within their own activity system rather than representing tensions between elements or in relation to their joint effort.

There was also very little thought given to the potential impact of their suggestions. For example, some occupational therapists spoke of creating their own individual job description and suggested that the creation of a job description specifically for OTs working in specialist schools would be useful. However, there was no clarification about what the purpose of this resource would be and who it would be most helpful for, was it for the classroom teachers, the parents/carers or the occupational therapists themselves?

The key learning that occurred for the participants appeared to be due to the actual process of surfacing and discussing future-orientated goals within the individual interviews and focus groups which I believe provided a useful framework to support the participants to analyse and reflect on their everyday activities and the long term goals and outcomes that would benefit them, their organisation and the learners with PIMD. The information gathered during this study and the process for analysing and identifying new ways of working also supported the participants to be critical reflective practitioners and advance their multi-agency working and learning in this specialist area of practice.

At an interpersonal level, learning and change occurs when an individual develops a new way of thinking or doing and is able to work collaboratively to approach a shared problem, possibly with a new shared identity. This can lead to profound changes in practices and potentially the creation of a new "in between practice, sometimes called a boundary practice" (Akkerman & Bakker, 2011, p. 146). The focus group discussions were able to surface some examples of boundary practice, because they facilitated questioning, reflections and the identification of contradictions and ideas for potential changes in practice that could lead to new enhanced ways of working.

The use of boundary objects also has the potential to facilitate the crossing of boundaries by acting as a bridge to enable people to work together (Star, 1989). Shared resources and processes such as the learners' IEP were key examples of boundary objects used by the participants which provided opportunities for multi-agency practice and boundary crossing between them. The participants' use of assistive technology and shared online records were also boundary objects which supported interpersonal boundary crossing and promoted communication and collaborative working across different areas of practice (Akkerman & Bruining, 2016).

Throughout the focus group discussions, two distinct types of boundaries were identified, an occupational/ professional boundary between the classroom teachers and occupational therapists and a boundary relating to their roles or division of labour, the "who does what" of everyday practice.

The data gathered from the focus group discussions provided examples of the learning mechanisms of boundary crossing in the activities of the participants as they navigated their multi-agency working and learning. Identification, coordination and reflection were the learning mechanisms that were most prominent, mainly at an interpersonal and intrapersonal level. It was difficult to report reflection in isolation from the other learning mechanisms as examples of reflection were observed to take place throughout all areas of practice and were evidenced in the focus group discussions when the participants explored different concepts and ideas relating to their ways of working, structures and procedures. They were able to reflect on their own and each other's perceptions and practices and in turn create practical possibilities for new ways of working. For example, they demonstrated their awareness that if they worked together, sharing their information and expertise they would achieve much more than if they worked in isolation.

> *You're not going it alone; you're going in with someone. Because I know that it's going to take me six plus months…but if you've got someone else trusting with you, in partnership doing this together, then you're going to go the distance as opposed to, after a month giving up (Clare, CT, FG2)*

The learning mechanism of reflection also occasionally took place at an organisational level, for example when some of the participants based at one school acknowledged

the perspectives of another group and moved to align their own or their schools' practices to reflect this (Akkerman & Bakker, 2011; Akkerman & Bruining, 2016). Or when one of the occupational therapy participants shared ideas between classrooms and classroom teachers such as the example given by Greta in the second focus group, "you might see something that's working really well in one classroom, and you can suggest it to another teacher, because they don't get that same opportunity to see across the classrooms".

The contradictions identified from the focus group discussions, and preceding individual interviews, were examples of the coordination learning mechanism of boundary crossing, where the participants were willing to talk about existing practices and potential new ways of working.

7.6 Chapter Summary

Taking the findings of the initial individual interviews as the departure point, this chapter has reported on the process and findings of the subsequent focus groups in relation to the frameworks of AT, the learning mechanisms of boundary crossing and the potential for learning to take place. Discussion and analysis of these findings took place under the two overarching tensions: professional roles and identity and supports and constraints of collaborative working.

The following final, chapter will present the conclusions of this study. The role and ways of working of the two activity systems of the occupational therapists and classroom teachers in this specialist area of practice will be discussed to inform the supports and constraints identified by them, which have impacted on their multi-agency working and learning with each other as well as the extended team around the learner.

The thesis will then be concluded with reflections on the research methodology and design and its limitations, implications for practice and suggestions for future research.

Chapter 8 Discussion and Conclusion

8.1 Introduction

Earlier in this thesis, Chapter 6 provided an overview of the conclusions from the individual interviews where a range of contradictions were surfaced. These contradictions were then presented as mirror data at the subsequent focus groups which followed an adapted change laboratory methodology framed by AT. Chapter 7 presented the conclusions from these focus groups, based on the discussions which allowed the participants an opportunity to discuss and co-construct new understandings about their current ways of working and to surface further contradictions and ideas about possible future ways of working.

This final chapter will provide a summary and discussion of the key conclusions in response to each of the research questions that have underpinned this study. The limitations of this study, the contribution that it makes to practice as well as to theoretical and methodological knowledge will then be shared, along with some recommendations for further research.

8.2 Summary and discussion of the conclusions in response to the research questions

8.2.1 First research sub question: how do classroom teachers and occupational therapists construct their professional roles when working with learners who have PIMD?

Professional roles and identity: occupational therapists and classroom teachers

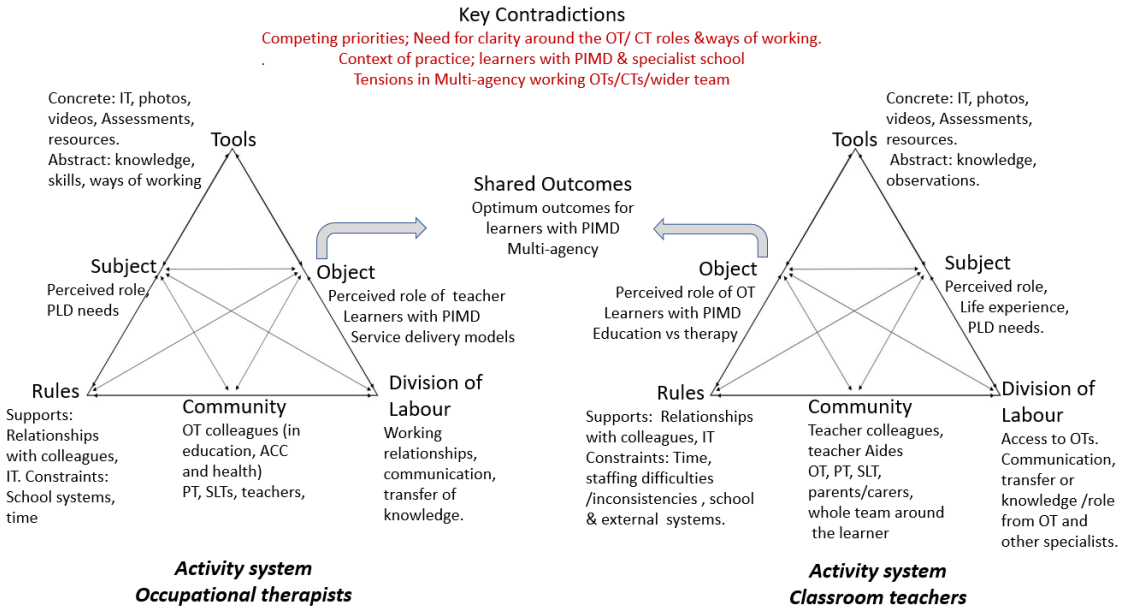
This study identified an inherent link between the practice of the occupational therapy and classroom teacher participants, their perceptions and the formation of their professional identity. This link was also explored by the participants as an important contributing factor in the construction of their professional roles. However, attempting to understand and define how they perceived and defined these aspects was more challenging than it first seemed. The participants and the researcher quickly discovered that identity can be changeable as it involves a subjective view of our own uniqueness in the context of the activities that we carry out (Billot, 2010).

It has been determined elsewhere in this thesis that professional agency promotes the belief that people have the power to act and make choices in ways that affect their practice and their professional identities (Eteläpelto et al., 2013). In this study, many of the participants, due to the opportunities offered by the AT and expansive learning frameworks, embraced an agentive role and suggested new ways of working in response to the contradictions that had been raised. Agency played an important role in this process as it brought a sociocultural viewpoint to how the participants negotiated and shaped their professional identity (Biesta & Tedder, 2006).

The conceptual framework and constructs of AT were useful to explore the individual and collective activities undertaken by the participants and to view their professional worlds as activity systems with their activities and ways of working aligned to the interrelated elements of AT. To illustrate this, Figure 16 below shows the two interacting activity systems of the occupational therapists and classroom teachers where they as the subjects had a goal or outcome relating to their actions which took place within a community (the team around the learner who shared the same general object) characterised by a division of labour (the horizontal division of tasks and vertical division of power and status) and certain rules or norms. The rules and the tools used within the activity systems are developed historically as the subjects have learned to use them to turn the object of their activities into outcomes. Although the data gathered in this study did not allow for a full analysis of the interactions between the two activity systems, it is notable that the relationship between them demonstrates a full or partial overlap between the majority of the elements. They are also both directed towards the same object and outcome, which is to achieve optimal outcomes for learners with PIMD.

Figure 16

Two interacting activity systems of occupational therapists and classroom teachers



(adapted from Engeström 2001)

When reflecting on their own professional roles and identities, the participants often cited the key qualities, or abstract tools, that they perceived made them effective in these roles as being their knowledge, skills, experience and their ability to work alongside others. Throughout the study, the classroom teachers highlighted what they saw as their unique contribution as the coordinator of all services and activities relating to the learners in their class, whereas the occupational therapists identified their distinct contribution as enabling the participation of the learner in these services and activities. Both professional groups acknowledged the importance of their workplace roles to meet the needs of learners who have PIMD and were able to define their different, yet sometimes overlapping responsibilities and activities, both for themselves and for others.

They were also able to recognise that having a shared goal or object was an important motivating factor for how they assigned meaning and made sense of the objects of their collective activities. Leont'ev's expanded hierarchical structure of activity, outlined earlier in this thesis in Chapter 4, charted three levels; operation, action, and activity as they relate to motives and actions guided by goals and influenced by conditions and tools under which the activity is performed. Nardi (2005) also suggested that in collaborative activity, although one object or activity can be shared

by a group, their different motivations may mean they interact with it in different ways. It was observed that the classroom teacher and occupational therapy participants in this study often concurred at the lower level of operation where they appeared to share an understanding of the object of activity by displaying the same behaviours, but possibly due to different motivations and level of participation, this differed at the higher level of activity where the object might have been meaningful to them in different ways. For example, the object of the collective activity systems of the classroom teacher and occupational therapy participants in this study was to support learners with PIMD to reach their full potential, however they might relate to the activities differently and participate in differing ways, using different tools dependent on their own personal motivations.

The concept of the object of activity is an important tenet of AT and this study. According to Kuutti (1996) an object can be an actual article (like a report), but it can also be something less tangible (like a goal) or even more abstract (like a common goal). Whatever the object is, it is influenced and transformed by the participants through the course of the activity so cannot remain unchanged (Nardi, 1996). The object of an activity has therefore often been considered to be a 'sense-maker' which can help both the subjects and the researcher understand otherwise fragmented pieces of evidence (Kaptelinin, 2005). The concept of the object of activity featured largely in this study in the exploration of how the participants responded to the object and outcomes of their practice as well as the rules, community, tools and division of labour that influenced them. In this situation, the object related to factors that impacted on the activities that the classroom teacher and occupational therapy participants carried out with each other to promote positive outcomes for their learners with PIMD. While some indistinct perceptions of their respective professional roles may have impacted on this, both the classroom teachers and occupational therapists voiced their willingness to work together, often giving concrete examples of this in practice such as joint assessments, programmes and activities, particularly those relating to the learner's IEP process which was repeated on a continual cycle, offering many repeating opportunities for this to occur. These concrete representations of the objects of their activities provided a framework for joint planning and the formulation of priorities and goals. However, while this 'how' aspect of multi-agency working is

important, Nardi (2005) encourages us to look behind these operational aspects to explore the intention or the 'why' behind their wish to work collaboratively. Common goals and objectives are very important to understanding people's why, although this is not a static concept but something that is constantly under construction (Engeström et al., 1995; Engeström & Sannino, 2010). There are more recent examples of resources which encourage practitioners to 'find their why'. For example Sinek (2009) encourages us to 'start with why' and again emphasises that all work activities operate on three levels: what we do, how we do it, and why we do it.

In most collaborative activities, we know that different people may have very different motives, even if they share the same object of their activities. The participants in this study demonstrated some understanding of their 'why' and were able to put it into words, for example Katrina (classroom teacher) who spoke of the 'privilege' of teaching learners with PIMD, or Amy (occupational therapist) who was motivated by working alongside families in a close way. An awareness of their 'why' was able to provide another context for the professional decisions made by the classroom teachers and occupational therapists, as well as having an obvious impact on their motivation and passion for their roles. Ultimately, the overarching needs and desires of the participants, referred to by Leont'ev (1978) when defining activity, was to support learners with PIMD and their families. This 'why' is what supported their multi-agency working and learning through a shared purpose.

It was apparent from the individual interviews and focus group discussions that roles, identities, and responsibilities were topics that were previously rarely negotiated or even discussed between the classroom teacher and occupational therapy participants and were instead mostly taken for granted assumptions. This lack of clarity may in part, have led to some of the issues raised in the findings concerning clarification of professional roles or the potential overlap between professional practices. The key reasons given by the participants for this lack of negotiation were time restraints and limited opportunities for this to take place.

Time was clearly a highly valued socio-cultural commodity among the research participants and time constraints was an often-quoted barrier to many collaborative tasks; a finding which is also reinforced in the literature (for example see, Barnes &

Turner, 2001; Choi & Pak, 2007; Robinson & Cottrell, 2005). However, it can also be surmised that this type of conversation about roles, identities and responsibilities might have been uncomfortable for the participants. They may therefore have been more likely to avoid them to circumvent any awkwardness or confrontation, especially when discussing their roles at the boundaries of their practice, where it may have been difficult for them to articulate their true opinions and aspirations.

Classroom teachers and occupational therapists working in specialist schools with learners who have PIMD do not function in isolation from the philosophical and theoretical systems in which they work. The environment of the specialist school, the needs of the learners with PIMD, and multi-agency working and learning alongside team members especially families and carers, have all impacted on how the classroom teacher and occupational therapy participants constructed their professional roles, identity and ways of working.

It was also notable that both the classroom teacher and occupational therapy participants identified their professional role and identity in terms of its difference from more typical teaching and occupational therapy roles.

A different kind of teacher

The classroom teacher participants voiced that they often felt inherently different from their colleagues working in regular schools or even those working with more able learners in specialist education and suggested that they might be perceived by them as being in some way 'lesser'. This finding broadly supports the work of other studies in this area linking teachers perceived personal and organisational prejudice. For example, findings from a study by Broomhead (2016) found that the teachers she interviewed that worked at a specialist school for those with behavioural, emotional, and social difficulties experienced 'courtesy stigma' due to the discourse of care surrounding those working in such specialist schools. This stigma was fuelled by misconceptions, both collegial and societal, that working in a specialist school, particularly with more complex learners, equated to being less than a 'proper' teacher. The classroom teacher participants in this study reflected that they felt similarly judged which was an obvious source of frustration for them. However, despite these parallels of feeling different or undervalued, the classroom teacher participants reported that

they found support in each other and in other work colleagues in the specialist school environment and were generally self-assured and confident in their role, which they saw as being integral to the co-ordination of the wider team, and to the achievement successful outcomes for the learner. This suggests that the specialist role of the classroom teachers working with learners with PIMD was perceived by them as not being recognised or appreciated by other teachers, or by the wider education system within Aotearoa New Zealand. This is a concern, as it may evidence a misconception of the vital role that teachers play in supporting the complex and highly individualised needs of learners with PIMD in specialist schools.

Activities to support the care, developmental and functional needs of learners with PIMD are, by necessity, part of their everyday classroom programme. These activities often occur in conjunction with each other and frequently require the classroom teachers to work outside their traditional fields of expertise (Petitpierre et al., 2007). Many of these care activities, particularly those that require specific training such as tube feeding or suctioning of airways, are supported within the classroom by teacher aides or learning assistants. However, several of the teacher participants also willingly participated in care activities such as feeding and toileting as they valued these opportunities as teaching moments, quiet time and opportunities to build relationships with the learners. Many of the classroom teacher participants remarked on how they struggled with the conflicts between the educational goals and the reality of the classroom programme when trying to juggle the therapy and care needs of the learners. For example, Frances who recognised the imbalance of this and said, “I think sometimes we're dealing more with the medical side of things than the educational side of things”.

The negative connotations of the discourse of care were also recognised by the teacher participants as possibly undermining their role, as it may be seen as one that was predominantly serving the physical or sensory needs of the learners, when they in fact reported that they were addressing these needs concurrently or in addition to the learner’s educational needs. These findings could cautiously be applied to other educators working with learners with PIMD in other specialist schools where a discourse of care is often evident, and professionalism may be undermined.

Likewise, it is important for teachers working with learners with PIMD in specialist schools to maintain their professional links and identity with teachers working in other school sectors. It would be beneficial to all parties, if the knowledge, skills, expertise, and experience held by teachers within specialist schools is acknowledged and shared with those working in other educational settings and in the wider Ministry of Education within Aotearoa New Zealand. This could possibly be achieved by some working and learning partnerships between staff in regular and specialist schools in order to build capability in both areas.

A different kind of occupational therapist

The professional identity of the occupational therapy participants was challenged by working in a school setting which often had a very different culture, language and processes compared to a medical or rehabilitation setting where the professional roles and identities of occupational therapists were more commonplace.

Many of the participants from both professions valued the diversity and adaptability of the occupational therapists' role and activities. However, this study identified a need for occupational therapists to articulate and clarify the key aspects of their professional role in specialist schools, both for themselves and for others. Although the diversity of their role and the activities they carried out were often viewed as being positive, it is suggested that this accepted blurring of the occupational therapists' role in specialist schools with learners with PIMD has contributed to some of the confusion and lack of clarity around it.

Role clarity was identified by some of the occupational therapy participants as being an issue even within their own profession where there were misunderstandings and confusion expressed about their role in the specialist school. As suggested by Watson (2006), occupational therapists cannot assume that there is a professional uniformity between their diverse work contexts of health and education, because even in the presence of a shared professional foundation, different contexts of practice will have a different cultural identity.

As occupational therapists have expanded their roles into the school setting, they have also been challenged with the task of developing alternatives to their previously dominant medical model of practice and service delivery (Ball, 2018; Bolton & Plattner,

2020; Nelson et al., 2009). The occupational therapy participants in this study acknowledged these challenges and were cognisant of working in an environment that was in many ways, foreign to them and to the bulk of their professional colleagues. This led to a key contradiction being raised that clarification of the occupational therapist's role in the specialist school was an important need that needed to be addressed, both for themselves and for others.

Questions relating to the role of the occupational therapist have long been considered (Benson et al., 2016; Chow & Chung, 1996; Molineux, 2011; Turner & Knight, 2015). It has previously been suggested that occupational therapists collectively and individually lack ontological security and that the only way to resolve this is if they are able to clearly articulate their professional philosophy and their understanding of the theory which underpins their profession (Molineux, 2011; Turner & Knight, 2015; Wilding & Whiteford, 2009). This view has been reinforced by studies which have found that when occupational therapists were confident in using occupational terms to describe and report their work, they were able to develop a stronger sense of professional identity (Wilding & Whiteford, 2008).

Being secure in their professional identity was especially important for the participants in this study who were required to work within the unfamiliar framework of the specialist school, where professional tensions had the potential to be inflamed because of the added challenges of articulating their practice and occupation-focused theoretical foundations within the school setting (Wilding & Whiteford, 2007, 2009). It is imperative that this issue is addressed, because the lack of a clear sense of professional and cultural identity and self-efficacy for occupational therapists could, as highlighted by the participants in this study, have the potential to contribute to professional burnout and difficulties recruiting occupational therapists to these important roles working with learners with PIMD in specialist education.

The levels of occupational therapy staffing varied across the three specialist schools included in this study and seemed to be dependent on how well the occupational therapists themselves could advocate for their service to the school management. Given the occupational therapists' previously mentioned difficulties in clarifying their role within the specialist schools, this is problematic. One suggestion made by the

participants was to devise a standardised formula of occupational therapy staffing in specialist schools which could provide appropriate base staffing levels and equity of access for the learners with PIMD and their families.

The impact of context on professional roles and identity

The specific context of their work in a specialist school with learners who have PIMD was fundamental to how both the classroom teacher and occupational therapy participants perceived their own professional roles and identity, and also how they thought others might see them.

Professional roles and identity were issues that both the classroom teacher and the occupational therapy participants grappled with to different degrees. For example, the classroom teachers were very aware that they were required to support all the needs of their learners including the medical and care needs and tried their best to meet these needs. However they emphasised that this was in addition to, and not instead of, their important role as an educator.

It was accepted by all participants that education, not health, was the supreme reason for their activities and interventions, because they worked in a school, not a health facility. However, in approaching this topic, it could be argued that care and therapy needs could and perhaps should, coexist and have equal status to education, especially when the needs of learners with PIMD have been identified as being in all three of these domains. This was supported by some of the participants, who shared their experiences of care and therapy activities as being valuable opportunities for learning as well as providing an opportunity to address the individual and wide ranging needs of the learner (Imray & Hinchcliffe, 2013; Petitpierre et al., 2007).

The contradictions raised in relation to professional roles and identity of the participants were underpinned, across all areas, by the needs of the learners with PIMD. These needs were at the forefront for the participants, who stated that it was the needs of the learners and their families which influenced every aspect of their professional roles and ways of working, although they raised their concerns that these needs did not appear to be acknowledged or considered within the wider education system.

Boundary crossing and professional identity: Walking between worlds

The responses to this first research question have related to professional roles and professional identity. The importance of being able to construct a professional identity to reinforce one's uniqueness and overall satisfaction as a professional in the context of the activities carried out with others is well known (Billot, 2010; Olsen, 2015). How the occupational therapy and classroom teacher participants in this study perceived and constructed their own and each other's professional roles and identities was impacted by the need to work at or across the boundaries of practice within their specific work context working with learners with PIMD in specialist schools.

Boundary crossing occurs within the multi-agency working and learning of professionals when they step outside their usual domains of practice and expertise to encounter new ideas and solutions which stimulate new professional practices and objects. Contradictions may also be surfaced at these times as previous lines of differentiation become ambiguous due to overlaps in practice (Engeström et al., 1995). When the boundaries between activity systems are crossed, those who are boundary crossers are considered to be "cultural brokers who can walk between worlds and translate the cultural models of one group for another" (Hora & Millar, 2012, pp. 92-93). This experience of "walking between worlds" is generally seen as being positive because it allows professionals to become aware of new tools and objectives that are common in other activity systems and adopt these into their own practice (Schenke et al., 2017).

This study found that the crossing of boundaries within the practice of classroom teachers and occupational therapists working with learners with PIMD was more likely to surface because of the high degree of specialisation required in these roles. This also presented additional challenges to their professional roles and identity as they were impacted by their experiences of boundary crossing.

For the classroom teacher participants in this study, boundary crossing was experienced when they were required to work in perceived less conventional areas of teaching practice to meet the care, developmental and functional needs of learners with learners with PIMD. However, in the midst of this occupational dissonance they stressed the importance of maintaining their professional identity as educators. The

importance of balancing teacher identity with occupational identity was noted in a Swedish study by Fejes and Köpsén (2014) which looked at how teachers developed their identities as vocational teachers by boundary crossing between their previous occupations, their teacher education and their current occupation as teachers. Although the study by Fejes and Köpsén had a different focus, they also found that many teachers struggled to maintain a balance between their professional teacher identity and their occupational identity and recommended that there be support for teachers to reinforce their belonging to their professional occupations.

For the occupational therapy participants, the perceived lack of clarity of their role when working at the boundaries of practice with the classroom teachers and with other therapists such as the physiotherapist or speech and language therapist was also identified. This was thought to be even more of an issue when working with learners with PIMD, who had needs that were difficult to define, assess and impact. Health professionals such as therapists often assign a high value to the differences of professional specialisms however, these professional boundaries are known to be more difficult to define when people are working in highly specialised areas of practice such as this where roles can become interdependent (Kilpatrick et al., 2012).

Challenges experienced by occupational therapists in their practice seem to apply across the profession (Murray et al., 2015). For example, the challenges faced by occupational therapists working in specialist schools, such as the perceived lack of understanding of their role and the subsequent need to be able to clearly articulate this, could be compared to those experienced by new graduate occupational therapists. Moir et al. (2021) carried out a comprehensive review of literature spanning four decades which identified four key categories of the challenges faced by new graduate occupational therapists; their ability to make decisions about intervention; their application of skills and knowledge during client service provision; their time and caseload management and the impact of the practice context. Many of these challenges were also identified by the occupational therapy participants in this study, principally the impact of the service context where they considered that their professional identity and ways of working were impacted by challenges relating to the organisational practices of the specialist school. A key finding from Moir et al was that

self- doubt pervaded all challenges which was also a factor impacting on the ontological security of the occupational therapists in this study.

8.2.2 Second research sub question: what activities do classroom teachers and occupational therapists engage in, which supports or challenges their multi-agency collaboration?

A different type of learner

A key factor identified by the participants that impacted on their multi-agency practice was their roles working with learners with PIMD in specialist schools, because this shaped their activities and therefore ultimately their ways of working.

In terms of total population, learners with PIMD are small in number and are often forgotten or only considered as an afterthought in terms of educational policy and planning (Carpenter et al., 2015; Colley, 2020). This may be because they generally attend a specialist school rather than a regular school, and because of their high and complex needs, are most commonly based at the main specialist school site rather than in a satellite class attached to a regular school. It is crucial to anticipate and plan for the needs of learners with PIMD within education and other services in Aotearoa New Zealand because although only a small number, they require the highest level of support and significant resources from all services.

The number of children with PIMD in Aotearoa New Zealand is almost impossible to determine as there is no apparent structure to collect this data. This is also often the case internationally, where estimates of the prevalence of children born with complex disabilities vary widely and are dependent on the method and criteria used (Arvio & Sillanpää, 2003; Petigas & Newman, 2021). However, there appears to be a consensus that the number of children born with conditions aligned to PIMD is expected to grow, partly due to improved medical expertise (Australian and New Zealand Cerebral Palsy Strategy Collaboration, 2020; Blackburn et al., 2010; Ware, 2018).

Although the focus of this study has been on the occupational therapists and classroom teachers who provide services to them, through the investigation of the prevalence of learners with PIMD described earlier in Chapter 3, this study has attempted to clarify and raise the profile of the population of these learners who attend school in Aotearoa New Zealand. It is recommended that this small, but very

important group of learners be monitored and reported to ensure that their needs are recognised and acknowledged.

There are also implications for education leaders who are encouraged to review the provision for learners with PIMD in Aotearoa New Zealand schools. One way to move this forward could be to evaluate current service provision against a performance indicator such as the UK resource Core and Essential Service Standards (Doukas et al., 2017) which advocates for all those working with people with PIMD to ensure that their interventions are safe and of a high quality. Four areas of quality assurance advised in this resource are that the positive life experiences of people with PIMD are central to all decision making, that there is a timely and regular monitoring and review of services, that shortfalls are addressed with effective action planning to ensure continuous improvement and that any concerns are addressed within an effective, honest and transparent process. Many specialist schools have instituted these standards with positive effects and have made recommendations for their wider use to promote best practice provision for people with PIMD.

Capability of classroom teachers and occupational therapists to meet the needs of the learners

This study identified contributing factors which influenced the practice of the classroom teacher and occupational therapy participants. One key issue raised by the participants was their feeling of being ill prepared for their roles working with learners with PIMD, especially if they were new to this role. The absence of any type of formal induction to their role, expectations and ways of working was noted, as was the lack of professional learning and development relevant to the specific requirements of working with learners with PIMD. This often left them to find their own way of gaining the knowledge and information that was required, mostly from their close work colleagues, although this also required them to feel comfortable and confident enough to do so. The need for targeted training and development of people who work with learners with complex additional support needs such as PIMD is well recognised and is also seen as one of the most critical factors in ensuring their best outcomes (Doran, 2012; Doukas et al., 2017). The participants in this study were overwhelmingly in agreement and considered that it was ethically essential for them that they have the necessary expertise, skills, and knowledge in order to carry out their roles effectively.

The lack of induction and professional learning development was highlighted as being particularly important to the occupational therapy participants who were often new to working in specialist education and identified additional challenges to their practice in this unfamiliar setting.

It has been determined that both classroom teachers and occupational therapists working with learners who have PIMD in specialist schools need to be equipped not only with skills and knowledge, but also with a strong sense of their own professional roles, identity and worth. Positive working relationships are an important foundation to enable this to occur. Adequate and ongoing support and professional development help establish these positive working relationships and collaborative multi-agency partnerships.

Another contradiction highlighted by this study and one that was repeatedly raised in the interviews and focus group discussions, was the time constraints experienced by both the occupational therapy and the classroom teacher participants. This was often attributed to insufficient or inconsistent staffing levels and to the high levels of personal support needed by the learners with PIMD for access to learning activities, positioning, feeding and toileting which reduced the time available for other activities.

There was also a perceived decrease in the occupational therapist's presence and availability to classroom teachers and learners, compared to previous times. It was acknowledged by the occupational therapy participants that this perception might be due to the shift in their ways of working from direct to more consultative models of service delivery. This mode of service delivery also emphasised the need to share and transfer their knowledge and role with others in the team, especially the classroom teacher. Both professions questioned the necessity for the occupational therapists to spend a large part of their role on the ordering, prescribing and managing of equipment which was considered to be overly time consuming and detracted from other, possibly more important activities they could be involved in to support the learners.

Consistent with the literature relating to the education of learners with PIMD, this study found that one of the greatest frustrations for the participants was the lack of guidance regarding the availability of curricula, resources and pedagogy. This was a

particular concern for the classroom teacher participants who had the responsibility to design and carry out the classroom programme, assessments and reporting. However, the occupational therapists also noted the lack of consistency in these areas, which often compelled them to adapt their ways of working to suit the different tools and resources used across different classrooms and teachers. This frustration is shared worldwide, where due to limited research on the education of learners with PIMD, there is a lack of specific theoretical frameworks available that could lay the foundations for the development of assessment instruments and intervention tools (Munde & Zentel, 2020). Tadema et al. (2008) suggested that the complexity of need and the difficulty assessing progress in the learners themselves are also a very real barrier to the design and provision of an educational programme.

In Aotearoa New Zealand, the National Curriculum (NZC) (Ministry of Education, 2007) is intended to form the basis of the learning programme for all children who attend school. Differentiation of this curriculum is promoted to meet the needs of individual learners. Like all teachers, the teacher participants in this study acknowledged the need to differentiate the classroom programme and curriculum as well as provide adaptations to the supports that each learner might need such as resources, environment, and teaching strategies. However, the NZC provides very little guidance to schools or educators on how to achieve this differentiation, and none that could be helpful to remove barriers for learners with very complex additional learning needs. The classroom teacher participants in this study did not generally consider the NZC to be relevant to their learners with PIMD and spoke of their struggle to apply their existing pedagogical strategies and resources to meet the highly diverse learning and curricular needs within their classrooms. This finding is also in keeping with teaching colleagues in the United Kingdom who asserted that their centrally imposed National Curriculum was not fit for purpose for learners with PIMD and instead sought to deliver their own needs-led curriculum (Imray & Hinchcliffe, 2012). The final report of the Complex Learning Difficulties and Disabilities Research Project (Carpenter et al., 2011) also recognised this deficiency and recommended the need for a new approach consisting of curriculum calibration, pedagogical reconciliation as well as new and innovative teaching strategies to meet the needs of these learners.

The participants in this study gave examples of some curricula resources that they were currently using such as the P scales, Quest for Learning and its New Zealand version, the Key Competency Pathways. However, they reported that these resources did not fully meet their needs and identified many gaps in knowledge regarding the efficacy of the curricula and resources that are currently available, and the outcomes for learners with PIMD. There have been many developments and proposals for differing curricula for these learners over the years often as a consequence of progressive legislation, policy, and practice initiatives. For example, in response to the Rochford review (2016), the UK government announced that the implementation of the Engagement Model was to become statutory from September 2021 for all learners who were not engaged in subject-specific study and were working below the standard of national curriculum testing. This model has replaced the previous P scales 1 to 4 and was adapted from the seven aspects of engagement, devised by Professor Barry Carpenter in the UK Department for Education funded Complex Learning Disabilities and Difficulties project in 2011. The Engagement Model now has five areas of engagement; exploration, realisation, anticipation, persistence and initiation and is designed to encourage schools to measure each learner's progress independently, according to their individual needs (Standards and Testing Agency, 2020). Despite this resource being hailed as a ground breaking development in the assessment of learners with complex disabilities, there is still dissatisfaction and criticism that the Engagement Model is more an assessment of how the teacher is teaching rather than how the learner is learning and still needs to be used in conjunction with other resources, such as the Quest for Learning to provide learning outcomes and summative assessment (Pickles, 2018). Another recent initiative is a framework which emphasises the importance of belonging for learners with PIMD and includes input, context, process and outcome variables to identify key indicators in order to achieve an optimal learning environment (Maes et al., 2020). This framework adopts an ecological stance as it includes a wide range of considerations in the aim of achieving belonging for learners by focussing on their individual learning needs and the active involvement of their families and professionals in all decision making regarding their learning content and goals.

It is a positive sign that there is international recognition of the need for evidence-based resources and pedagogies to meet the distinct needs of learners with PIMD and to move from a one size fits all approach to a highly individualised one. However, there is still no clear, agreed framework for how learners with significant complex needs such as PIMD should learn, and so educators still often need to use customised resources and pedagogy to guide their choices and decisions for each learner (Ayres et al., 2011; Colley, 2020; Norwich & Lewis, 2007).

The feedback from the participants in this study reinforced this view. They spoke of using a variety of resources from both Aotearoa New Zealand and overseas to meet the needs of the learners in their class. This way of working presents many challenges and is not sustainable, particularly for more inexperienced teachers and occupational therapists, or those who are new to working with learners with PIMD. This is a complicated issue, with no single solution, however, there is agreement, also supported by this study's participants, that no matter the tool, the most crucial aspect is that it is used by someone who knows the learners well and is able to identify their strengths and needs. Having a skilled and knowledgeable team around the learner is essential to allow this to take place and can be supported by working at and across professional boundaries to inform and extend existing knowledge and practices.

The consistency and effectiveness of educational approaches for learners with PIMD is still unresolved (Nind & Strnadová, 2020) as "to date, curricula and educational outcomes for all have tended to be linear and academic, and educational policy and practice with respect to learners with SLD/PMLD have reflected this, with the result that this sizeable group of learners has been overlooked" (Colley, 2020, p. 733). It is disappointing that there continues to be such ambiguity regarding the education for learners with PIMD, because the longer this lack of clear direction persists, the longer learners will continue to be disadvantaged and 'pedagogically bereft'. The participants in this study have added their voice to the request for increased attention to this issue so that a coherent strategy on pedagogy and curriculum for learners with PIMD might be available and so provide a more positive, coordinated response to the needs of the learners and to those who are supporting them to achieve their optimal outcomes.

Multi-agency working and learning

Multi-agency working and learning between the occupational therapy and classroom teacher participants in this study was deemed by them to be not just beneficial, but essential to achieve positive, quality interventions and the best possible outcomes for their learners with PIMD. They saw this way of working together as a foundation for enhanced inter-professional collaboration in order to recognise and acknowledge the differences in each other's frames of reference and approaches to their activities, which in turn could facilitate some fundamental shifts in the way services for learners with PIMD were provided. This view is supported by studies which have shown that therapists who work in close consultation with classroom teachers, share a common goal and a common and efficient system of communication and are more effective in meeting the objectives for learners than through direct services alone (Giangreco, 1986a, 1986b; Maes et al., 2020; Nind & Strnadová, 2020; Soan, 2006).

Avoiding a segregated approach between all those working with the learner, and especially between the home and school context, was identified by the participants in this study as being extremely important. When discussing factors that supported their multi-agency practice, all the participants cited being able to establish positive, close working relationships as an essential element for this to take place. It was also found that relationships were an important foundation for the development of trust between classroom teachers and occupational therapists, and an essential prerequisite to allow for work at the boundaries of practice to take place.

In the aim of successful multi-agency working, the participants collaborated and shared their knowledge and expertise, often through the use of joint activities such as assessments and programmes. The transfer of knowledge through different channels of communication such as emails, shared notes, photographs and videos took on the role of boundary objects which also facilitated these shared activities (Star, 2010). A positive working relationship between the occupational therapists and classroom teachers was considered to be an important foundation to enable a transfer of knowledge to take place. A two-way transfer of knowledge was found to be essential to support multi-agency working and learning, although also to the perceived blurring of roles and boundaries between the two professions. The participants also recognised families and carers of the learner with PIMD as integral members of the multi-agency

team who participated in the transfer of knowledge about their child, both to and from the other team members.

Like many other studies, communication was an area highlighted by all the participants as being both an asset and a potential barrier to multi-agency working and learning (for example, Atkinson et al., 2007; Barnes & Turner, 2001; Sloper, 2004). A lack of time and opportunity were identified as the most significant hurdles to achieving effective communication and building relationships, and there was a plea for an allowance of time to be prioritised for these important aspects of multi-agency practice to be established.

Another issue raised in this study which was thought to have an impact on multi-agency working and learning between the occupational therapy and classroom teacher participants was the lack of opportunities for familiarity with each other's roles during preservice education. Several of the participants lamented the lack of prior knowledge of each other's roles. This identified need is in line with the thinking of others such as Forbes and McCartney (2015) who advocated that university programmes need to be re-structured to promote transdisciplinary teaching and research for practice to ensure that practitioners working with children were competent and confident and able to "adopt a coordinated and unified approach" (p 153). Different professions often learn about each other's roles and build relationships during pre-service education. For example occupational and physiotherapists often have close associations during this period which likely contributes to their strong collaborative practice in the workplace. This time for relationship building is important in preparation for future professional roles and as a foundation to encourage multi-agency working and learning with fellow students who may be future colleagues (Horsburgh et al., 2001). It has also been noted that many of the tensions which create barriers to inter-professional collaboration may be addressed through pre-service as well as in-service, interprofessional learning opportunities (Hind et al., 2003; Wintle et al., 2017).

Unfortunately, there are very few opportunities for this to happen in Aotearoa New Zealand where undergraduate teachers carry out practicum placements predominantly in regular schools, whereas undergraduate occupational therapists predominantly carry out their practicum placements in health settings, they therefore rarely meet in

this important and formative period of their education. Teacher pre-service education is generally mono-professional and from personal experience of training as a primary school teacher in Aotearoa New Zealand, includes very little instruction on how to address the needs of those learners who sit outside the parameters of the NZ curriculum, such as those who have PIMD. There is also very little consideration of the wider edu-health-care policy and practice needed by teachers working in specialist schools with learners who have additional needs and find that they need to co-ordinate and collaborate with a wide range of professional colleagues such as occupational therapists. The current separate discipline-based attainment of professional knowledge, skills and standards does not easily allow occupational therapists and teachers to form interdisciplinary professional affiliations and could indeed be a factor in a lack of understanding of each other's perspectives and add challenges to their ability to work at the boundaries of their practice.

Multi-agency collaborative practice is promoted across many different types of organisations, especially in services for children with complex additional needs where multi-agency team members are often presented with multifaceted practice and team-focused roles (Cheminais, 2009; Horwath & Morrison, 2007; Kennedy & Stewart, 2012; Soan, 2006). This study found that irrespective of the actual or perceived multi-agency working and learning that took place between the participants and the wider team around the learner, they highly valued and shared a positive attitude towards this way of working and appreciated opportunities to work together, often reporting that this significantly added to their job satisfaction. It was evident that multi-agency ways of working and learning also positively impacted on the way that they viewed their own concepts of professionalism as well as their perceptions of how others saw them.

Navigating the team around the learner

There were complexities and constraints experienced by the participants when working with the often very large team of people and agencies supporting each learner with PIMD. This was considered to be particularly challenging when striving for effective communication, with some key constraints identified to this occurring as a perceived lack of time, opportunities and resources.

One of the time pressures highlighted was the additional challenges presented by the need to communicate and work collaboratively with the large, complex, and diverse network of people from health, education, social, care and voluntary services who were part of the wider team around the learners with PIMD and their families. There are obvious complexities and challenges to multi-agency working and learning with such a large team. This was recognised by the participants in this study who stated that a strategy used to manage the complexities of working in a large team was to establish a smaller core team around the learner. The participants shared that various versions of this way of working were currently being used and that communication within this smaller, core team generally worked well, although it was acknowledged that there was always room for improvement.

One of the main suggestions from the participants for an enhanced way of working was to formalise the role of a lead professional or key worker who would act as a single point of contact for families and the wider team around the learner. This scenario, where professionals work on activities and goals even when outside their own professional scope of practice is not a new idea, and occurs in many different health and education settings where boundaries between disciplines are deliberately blurred to facilitate targeted and flexible interventions (Mengoni et al., 2015; Pagliano, 2017). The role of the lead or key worker is not a role that was generally appointed to the classroom teacher participants in this study, although they shared that they felt as if they were often placed in this role by default as they were the most consistent and frequent contact for the learner and their family. The occupational therapy participants were generally in support of the classroom teachers assuming this role although a few highlighted that they might be a better fit, as occupational therapists often have the benefit of longevity of involvement with the learner and their families even as they transition across different classroom settings and teachers. Whoever fills this position, there would seem to be a strong case for the recognition and formalisation of the keyworker role as a support for a more streamlined way of ensuring effective communication and the co-ordination of the many different people and services working with the learners with PIMD and their families as this is obviously an issue that needs attention. The institution and formalisation of a key worker role could be a simple, cost effective answer to this important and enduring need.

However, in order for this way of working to be successful, it would be important to have the support of the learners' families and the school management team so that appropriate time and resources to be allocated.

The findings from this study highlighted the willingness of the classroom teacher and occupational therapy participants to support multi-agency working and learning within the team around the learner, particularly with the families and carers, so that a common collaborative vision could be achieved. They recognised the need to initiate and facilitate communication and multi-agency practice with families and carers in recognition of their role as key communicators and advocates for their child. Some examples given of this in practice were information sessions or workshops for families regarding 'what was going on' for their child at the specialist school and reinforcing the equal importance of learning as well as therapy and functional or care goals.

Families and carers have unique and crucial knowledge about the learners and are often the link to other agencies such as health, social and community services. The importance of working alongside families to gain a better understanding of this knowledge to support the work of the school team and facilitate better, integrated services for the learner was recognised by the participants, who supported the concept of parents as the experts on their child (Kruithof et al., 2020). Families and carers are crucial members of the team around the learner with PIMD and provide valuable input to their education through their intimate experiential knowledge of their child and the transfer of this knowledge to the other team members. Including families in multi-agency practice may help to alleviate some of the discrimination, prejudice, and low expectations from others that they face on behalf of their child, as well as their often reported struggle to access the services and support they need (Mansell, 2010; Nind & Strnadová, 2020).

8.2.3 Third research sub question: which factors have been identified that will have a positive effect on their future ways of working with learners who have PIMD?

Implications for future practice

Classroom teachers and occupational therapists are integral members of the large team of people around the learner with PIMD and their family, and as such need to strive to continually enhance the support and interventions that they provide and to

work collaboratively as part of the team through their multi-agency working and learning. The future focussed aspect of this research process supported the participants to explore and discuss the contradictions raised as a driving force for change and development (Engeström, 1987). The processes used in this study such as the adapted change laboratory approach, enabled the participants to analyse and reflect on their perceptions and everyday activities and to work collaboratively to identify contradictions and subsequent ideas that would have a positive effect on their future ways of working.

It has been suggested that outcomes of a change laboratory may include expansion of the object and the development of new tools, rules, or new divisions of labour (Daniels, 2008). The future orientated ideas suggested by the participants and their corresponding contradictions were outlined in Tables 9, 10, and 11 in the previous chapter and provide a response to the third and final question of this study which asks what factors have been identified that will have a positive effect on the participants' future ways of working with their learners who have PIMD? The contradictions identified by the participants in this study varied in intensity, leading to different degrees of ideas for change and development. Many of the suggestions made were systemic rather than individual so while some, such as the creation of a job description for occupational therapists working in specialist schools, were within personal realms of change some were larger and more aspirational.

If any of these ideas are to progress, time and priority will be needed for classroom teachers and occupational therapists (and other key professional relationships) to share information and examples of enhanced practice with their peers working both within their own school and in other schools with learners who have PIMD. Extending this multi-agency practice to a collaborative home-school partnership is also very important so that families and carers are recognised as the experts on their child and feel comfortable engaging with all aspects of their life at school.

There were some indications that the future-orientated goals identified and the expanded objects of joint activity between the occupational therapists and classroom teachers would serve as a foundation for future development. However, whether these are achieved or not, according to the ideals of AT, it is the process of surfacing

these goals that has been of key importance in order to encourage and enhance the contribution and sense-making of the participants.

8.3 Reflections on the theoretical and philosophical frameworks of this study

The use of AT as the socio-cultural lens for this qualitative study enabled the multi-agency working and learning of the occupational therapy and classroom teacher participants to be explored and analysed as they worked together across professional boundaries with learners with PIMD. Within the confines of this study, AT was predominantly utilised as a descriptive tool combined with the concepts of boundaries and boundary crossing to answer the research questions.

Boundary crossing emerged as a particularly important concept in this study and was experienced as both a support and a constraint to the multi-agency working and learning of the classroom teacher and occupational therapy participants. Although, the participants in this study practiced within the scope of their own professional group they were also able to overlap or intersect with the knowledge and practice of their colleagues in a form of boundary crossing (Akkerman & Bakker, 2011). Some of the important prerequisites for boundary work and enhanced multi-agency collaboration described by the participants were, having a positive relationship, getting to know each other well, communicating in a variety of ways and being available to each other. A large part of boundary work between the occupational therapy and classroom teacher participants took place as relationships were being built, evidenced by the shifting of professional boundary lines over time which increased as the participants became more familiar and comfortable with each other, both on a professional and on a personal level. This is in line with the view of boundaries not as barriers, but as spaces where different professionals, with different roles and resources can be brought together to expand how they see their multifaceted activities. In this way, the expansive learning is not about how to do the other person's role, but to gain "sufficient insight into purposes and practices of others to enable collaboration" (Edwards, 2011, p. 34).

The concept of boundary crossing is often promoted in professional and educational contexts as it has the potential to overcome barriers as people work and communicate

across different areas of practice (Akkerman & Bakker, 2011; Akkerman & Bruining, 2016; Engeström et al., 1995; Mesker et al., 2018). In his situated learning theory, Wenger (1999) also saw boundary crossing as a way of preventing the members of communities of practice from becoming unmotivated or stale. This impact was corroborated in this study where there was a recognition that through working across professional boundaries, the subjects could combine different types of expertise and practice to enhance their individual professional abilities and increase their potential to make a difference to learners (Akkerman & Bakker, 2011; Kuhn, 1962). Conversely, this overlap of practice could be considered as a constraint due to the perceived ambiguity which took place when they worked at or across their professional boundaries of practice. This lead to uncertainty and possibly role confusion as the roles were defined and redefined. For example, the tensions in boundary practice experienced by the classroom teacher participants when moving away from their core teacher role towards the therapy/care role, often required by their learners with PIMD, appeared as a common theme as they struggled with the different skills, experience and knowledge required for each context. The challenges of boundary practice were also identified by the participants as being constraints when their ways of working moved from being traditionally individual, where their practice was less visible and therefore less accountable, to being more collaborative and more noticeable. Despite these challenges, extending their boundaries of practice was generally viewed positively by the participants and they frequently expressed their desire to engage in this way of working, particularly as they saw it as being beneficial to achieve the best possible outcomes for the learners with PIMD.

The multi-level approach to the theory of boundary crossing (Akkerman & Bakker, 2011) consisting of the four key learning mechanisms of identification, coordination, reflection and transformation, was used to scaffold the data that was gathered from the participants and aid in its interpretation and reporting in response to the research questions. The use of these learning mechanisms provided a platform to explore and understand the links between the context of practice and the collective learning of the participants in this study, predominantly focussing on the learning mechanisms of identification, coordination and reflection.

Akkerman and Bruining (2016) suggested that boundary crossing can take place at an interpersonal, intrapersonal as well as at an institutional level. Although this study focussed predominantly on interpersonal and intrapersonal boundary crossing between the two activity systems of the classroom teacher and the occupational therapy participants, some institutional examples also emerged, for example where activities and strategies that worked well were shared by one group and this was then taken back and later reported to be adopted at another location and situation.

The conceptual framework of AT helped to navigate the multivoicedness and dynamic interplay of the complexities of this study, by enabling the differing perspectives of the participants to be surfaced within the socially situated and culturally mediated nature of their professional practice, whereas boundary crossing provided a useful lens to focus on the ways of multi-agency working and learning of the occupational therapy and classroom teacher participants.

8.4 Limitations

As a qualitative inquiry, this study involved the relatively small number of fourteen participants, from three specialist schools within a large city in Aotearoa New Zealand. Although the participants had different backgrounds, their experiences may have been shaped by their location within the same city and their work contexts in large specialist schools within it. Future research accessing a broader sample of participants would therefore further inform the research literature.

It is acknowledged that the effectiveness of the change laboratory approach was compromised due to the methods of data collection used in this study which relied on individual interviews with the participants about their practice rather than direct observations. This may have limited the scope to fully identify pertinent contradictions.

The main focus of this study was the multi-agency ways of working and learning between the subjects, the classroom teacher and occupational therapy participants. It was outside the scope of this study to seek input from the learners or their families and carers in the formal data collection, which would undoubtedly have added an alternative perspective and point of view to inform the data and analysis. Research,

especially regarding people with PIMD, can often be marginalising by generating knowledge ‘on them’ and not ‘for them’ (Mietola et al., 2017). The absence of learner and family involvement is recognised as a limitation of this study and is highly recommended as an area for future research.

The conceptual framework of AT acknowledges that the researcher will adopt a contextual-discursive reflexivity to produce a cocreated narrative (Finlay, 2012). Critical self-reflection was therefore necessary to surface ways in which the researcher’s personality, personal assumptions, beliefs and values may have impacted on the research process, data collection and analyses. As a social constructivist researcher, it is accepted that all knowledge, social interaction and language is derived from the individual’s or group’s perspective of the world as they see it, as this is how our shared versions of knowledge are constructed. The reality of the classroom teachers and occupational therapists who were the subjects in this study, is constructed by their activities and their thoughts. These constructions are based on multiple, socially constructed realities which are made because the individuals “want to make sense of their experiences” (Gibbs, 2008, p. 7). Care was taken at every stage of this study to ensure that the findings were trustworthy. However, it is acknowledged that there were limitations and that the participants, the context, and the conceptual framework used could have been influenced and interpreted by the knowledge and lived experience of the researcher who is also part of these constructions through the facilitation of the individual interviews, the change laboratory processes in the focus groups and the interactions that took place during the data generation.

8.5 Contributions

There are many well-researched and articulated discussions related to multi-agency collaboration between teachers and therapists, however the researcher was unable to find any which focussed specifically on the multi-agency practice of classroom teachers and occupational therapists as they worked at and across professional boundaries with learners who have PIMD in specialist schools in Aotearoa New Zealand. This was therefore an important area to research and the information and analysis from this study contributes to the development of understanding in this area.

This study also contributes to the growing body of work which uses AT as a descriptive and analytical tool to explore the practice of people in different professional settings and forms of activity.

8.6 Recommendations and areas for future research

It has been established that there is very little written about the interface between classroom teachers and occupational therapists and the factors which support and constrain their multi-agency practice when working with learners who have PIMD in specialist schools in Aotearoa New Zealand, so further research in this area is needed.

The processes used in this study for analysing and identifying new ways of working supported the participants to be critical reflective practitioners and in turn advance their multi-agency practice. There may therefore be value in replicating this adapted change laboratory approach for other professionals who work as part of the team around the learner with PIMD in the educational setting to extend knowledge and understanding of these important professional relationships and their ways of working to meet the needs of the learners and their families.

Sharing the experiences of classroom teachers and occupational therapists working and learning together across professional boundaries with learners who have PIMD in the specialist school may also have implications which could guide the inter-professional partnerships of others working in similarly complex environments.

This study found that learners with PIMD in Aotearoa New Zealand constitute a rare, and often forgotten group, and points to the absence of information about them. Who are they? Where are they? What are their ages and are their numbers increasing or decreasing? What services do they need? This information is urgently needed to be able to plan and resource for their life at school and beyond.

Issues raised in this study relating to the lack of curricula, resources and pedagogies for learners with PIMD were accompanied by the lack of guidelines, induction and ongoing, relevant professional development for the classroom teachers and occupational therapists who work with them. This study found that the limited research evidence of best practice to meet the needs of learners with PIMD often prompted the classroom teacher and occupational therapy participants to draw on

their own personal and professional experience and knowledge to create an appropriate, if sometimes ad hoc way of working. Further research in this area is required to inform the work of classroom teachers and occupational therapists and to determine an ongoing strategy to meet the needs as well as the educational outcomes for this group of learners, including agreed pedagogical strategies, assessment and curriculum resources. Research is also required to provide insights into educational practice and learning curriculum for learners with PIMD in Aotearoa New Zealand. Government and educational policies proclaim their aim of a fully inclusive system that will meet the needs of all learners, often without consideration for those learners, such as those with PIMD, who experience major barriers to access these systems, or for whom this does not meet their needs or preference.

As previously mentioned, gaining input from the learners with PIMD and their families was not possible within the scope of this study, so did not address the need for these very important viewpoints. Further research to gain the contribution of learners with PIMD and their families in response to the research questions of this study is therefore recommended.

The limitations of this study in relation to how AT was used identifies opportunities for future research using AT more comprehensively in this setting. It would also be interesting to carry out a follow up study to explore the extent to which perceptions of boundary crossing and multi-agency working and learning, which began through the focus groups with this cohort of participants evolved, continued or was impeded.

8.7 Concluding comments

As practitioner research, this professional doctoral study aims to have an impact on practice and as a result, also an impact on the service users. The AT concepts of multiple activity systems and multivoicedness supported this study to be action-oriented and identify some of the current issues that support and constrain the culturally and historically situated roles, activities and multi-agency working of the occupational therapy and classroom teacher participants. The tensions and contradictions raised in this study were often not new or unfamiliar to the participants. However, several expressed that this was the first opportunity they had to discuss and reflect on these issues in any depth, and also the first which focussed solely on their

interventions with learners who have PIMD. These areas of contradiction were highlighted with the aim to stimulate expansive learning and new ways of working that are important in the maintenance of an effective multi-agency team.

Many of the key conclusions from this study focussed on the learning mechanism of identification and othering. Learners with PIMD were seen as being a 'different type of learner', specialist schools were a 'different type of school' with the need for different programmes, resources and curricula and ultimately the participants themselves identified that they were, and were required to be, 'different kinds' of occupational therapists and classroom teachers who were able and willing to work in different and innovative ways to meet the needs of the learners. However, at the heart of these findings is the realisation that there were in fact many similarities. The classroom teacher and occupational therapy participants held on to their professional identities and continued to base their practice on the theoretical frameworks and strategies of their professions and apply their knowledge and experience to their current speciality. Perhaps the only difference was in their perceptions of how they thought others perceived them in their professional roles.

Working together to meet the needs of learners with PIMD presents many opportunities and challenges and is exactly the type of environment where multi-agency working and learning at the boundaries of practice may flourish. The findings from this study support others that have taken place with learners who have PIMD, which highlight the importance of appropriate, high quality interventions and enhanced outcomes for these learners; something which is best achieved by having skilled professionals and an increased understanding and facilitation of their vital multi-agency relationship. It is hoped that this study will raise the profile of the needs of learners with PIMD who are central to the reasons behind the research questions. These learners make up a very small proportion of those within Aotearoa New Zealand schools and their needs are rarely considered in educational policy making or planning. It is long overdue that they are recognised and acknowledged as important members of our schools and communities.

This research journey has attempted to answer the central questions of this thesis which were grounded in my own lived experience as both an occupational therapist and a classroom teacher working with learners who have PIMD. The findings from this study emphasised that that there is no one person or one profession equipped to meet the complex and diverse needs of learners with PIMD, and that if we are to achieve this, multi-agency working and learning at and across the boundaries of practice is essential. This study has outlined some of the implications and suggestions to support this aim.

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Abbreviations / Glossary

AAC	Alternative augmentative communication
ACC	Accident Compensation Corporation
App	Application
AUT	Auckland University of Technology
CT	Classroom teacher
IEP	Individual education plan. An ongoing collaborative process where goals and plans are developed, implemented, and reviewed for each learner.
II	Intensive interaction. An approach that is used to develop positive social communication with people who have communication impairments.
MoE	Ministry of Education
NZC	New Zealand Curriculum
NZDS	New Zealand Disability Strategy
ORS	Ongoing resourcing scheme
OT	Occupational therapist
PEO model	The Person-Environment-Occupation (PEO) model is a model that emphasises occupational performance shaped by the interaction between a person, their environment, and occupation.
PIMD	Profound intellectual multiple disabilities
PMLD	Profound multiple learning difficulties
PT (Physio)	Physiotherapist
SLT	Speech and language therapist
TA	Teacher aide / teaching associate

Appendices

Appendix A: Letter of approval from AUT Ethics Committee

Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology
D-88, Private Bag 92006, Auckland 1142, NZ
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

31 October 2018

Ruth Boyask
Faculty of Culture and Society

Dear Ruth

Ethics Application: 18/396 **How do occupational therapists and classroom teachers work across professional boundaries to support students who have profound intellectual and multiple disabilities**

I wish to advise you that a subcommittee of the Auckland University of Technology Ethics Committee (AUTEC) has **approved** your ethics application.

This approval is for three years, expiring 31 October 2021.

Non-Standard Conditions of Approval

1. The transcriber's confidentiality agreement was not supplied. The committee understands that the researcher will be attempting to do the transcriptions herself in the first instance, but if this change please submit the model transcriber's confidentiality agreement that will be used. In the Information Sheet, please provide for the possibility that transcriptions may be done by a third party;
2. In the Information Sheet, describe whether or not transcriptions of the interviews will be offered for member checking
3. The indicative questions for the focus groups have not been supplied. Once these have been developed post the interviews, please provide them through the amendment pathway;
4. A researcher's safety protocol has not been supplied. If there is any intention to conduct the research in private settings such as participant's home's, please provide a safety protocol prior for approval through the amendment pathway prior to undertaking such activities

Non-standard conditions must be completed before commencing your study. Non-standard conditions do not need to be submitted to or reviewed by AUTEC before commencing your study.

Standard Conditions of Approval

1. A progress report is due annually on the anniversary of the approval date, using form EA2, which is available online through http://www.aut.ac.nz/research/researchethics.
2. A final report is due at the expiration of the approval period, or, upon completion of project, using form EA3, which is available online through http://www.aut.ac.nz/research/researchethics.
3. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form: http://www.aut.ac.nz/research/researchethics.
4. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
5. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.

Please quote the application number and title on all future correspondence related to this project.

AUTEC grants ethical approval only. If you require management approval for access for your research from another institution or organisation then you are responsible for obtaining it You are reminded that it is your responsibility to

ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.

For any enquiries please contact ethics@aut.ac.nz

Yours sincerely,

Kate O'Connor
Executive Manager
Auckland University of Technology Ethics Committee

Cc: karenlaing@hotmail.co.nz; Ellen Nicholson

Appendix B: Letter of agreement (school principals)

Dear School Principal,

My name is Karen Laing. I am an occupational therapist and a teacher, and I am undertaking research as a requirement for a Doctorate in Health Science at AUT.

The title of my study is:

How do occupational therapists and classroom teachers work across professional boundaries to support students who have profound intellectual and multiple disabilities (PIMD)?

I would like to contact classroom teachers and occupational therapists at your school who have more than 2 years' experience in their current practice setting and who work with students who have profound intellectual and multiple disabilities to ask if they would be interested in participating in this study.

For your information, I have provided a copy of the Participant Information Sheet which outlines what their participation will entail.

- ○ I have read the information provided about this research project in the Participant Information Sheet dated 3rd October 2018 and have had an opportunity to ask questions.
- ○ I agree to the primary researcher Karen Laing contacting classroom teachers and occupational therapists who meet the criteria for participation in this research.
- ○ I agree to the primary researcher Karen Laing seeking access to documents, such as assessments, meeting minutes, individual education plans (IEPs) or intervention programmes from the participants which might illustrate examples of their roles.
- ○ I understand that these documents will be treated as confidential and no identifying information will be shared or used. If any documents contain identifying information about students, the classroom teacher or occupational therapist will be asked to seek written permission on the provided consent form from the student's parents or carers prior to sharing them.
- ○ I wish to receive a summary of the research findings (please tick one): Yes ○ No ○

Principal's signature: …… Date : ……

School: ……

If you have any further questions, please do not hesitate to contact me.
Kind Regards,

Karen Laing
email: karenlaing@hotmail.co.nz
telephone: 0211784661

Project Supervisor Contact Details:
Dr Ruth Boyask, email: ruth.boyask@aut.ac.nz, telephone: 09 921 9999 ext. 7569

Approved by the Auckland University of Technology Ethics Committee on 31st October 2018, AUTEC Reference number 18/396.

Appendix C: Participant information sheet

Participant Information Sheet

3rd October 2018

Dear Colleague,

My name is Karen Laing and I am undertaking research as a requirement for a Doctorate in Health Science at AUT.

The title of my study is:

How do occupational therapists and classroom teachers work across professional boundaries to support students who have profound intellectual and multiple disabilities (PIMD)?

I have sent you this Information Sheet because I would like to invite you to take part in this research. I initially contacted the Principal of your school for approval to contact you as you have been identified as either a classroom teacher or an occupational therapist who works with students who have PIMD in a special school setting.

I have worked as both an occupational therapist and as a teacher with students who have PIMD and my experiences have been the catalyst for this study. I have often been intrigued by the commonalities of these two professional roles as well as the potential complexities of the relationship between them. There is general agreement that effective multi-agency collaboration between classroom teachers and therapists is an important factor in achieving successful outcomes for students. However, this collaboration is even more important when they are working together to meet the needs of this group of students who have the most complex neurological, medical, learning and/or physical disabilities.

My research will investigate how classroom teachers and occupational therapists work across professional boundaries by exploring their multi- agency working with this group of students in the special school setting. The unique situation experienced by classroom teachers and occupational therapists working with students who have PIMD within special schools in New Zealand indicates that this research will add to our limited knowledge in this area and potentially signpost new ways of working.

Your participation in this research is entirely voluntary and whether or not you choose to participate will neither advantage nor disadvantage you.

Taking part in this research will involve;

- An individual interview which will last for about an hour. This interview can take place at your school or at another place of your choosing. The interview will be audio-recorded and later transcribed.
- Sharing some examples of documentation relating to your work alongside classroom teachers or occupational therapists with students who have PIMD. If any documents contain identifying information about students, you be asked to get written permission on a provided consent form from the student's parents or carers prior to sharing them.
- Participating in a Focus Group with other participants to discuss any themes which emerged from the individual interviews and documentation. This will last for about two hours. The focus groups will also be audio-recorded and later transcribed.

I intend to explore the multi-agency working between classroom teachers and occupational therapists who work with students with PIMD by using Cultural-Historical Activity Theory as a theoretical basis and methodology. This model was designed for the purpose of viewing, analysing and working on professional activities and recognises that the professionals working in an organisation are the central force for authentic organisational change and development.

As well as identifying positive aspects of their current practice, participants will also be asked to identify possible tensions and contradictions. This could potentially be an emotive task and may cause discomfort. It should be noted that participants are free to decline to answer any specific questions put to them.

Measures will be taken to ensure that no individual's views are identifiable in the process or in the reporting of the research. As the interviews and focus groups will be carried out face-to-face, anonymity is not possible. However, confidentiality of the information provided will be managed;

- All participants will be asked to sign a confidentiality agreement prior to the focus group, stating that all views expressed in the group remain confidential among the professionals who attend the group.
- No written or audio-taped notes from the interviews or focus group will contain individuals' names and no comment will be attributed to an individual.
- All paper copies and audio-tapes of raw data will be stored in a locked cabinet, accessible only to myself and my supervisors for 6 years, after which they will be destroyed.

You will be asked to complete and keep a copy of a consent form before participating in the study. If you wish to withdraw your consent at any point, you are free to do so without giving a reason. If you choose to withdraw from the study, you will be offered the choice between having any data that I can identify as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

You will receive feedback on the outcome of this research. Details of the research may also be shared in the form of a published thesis, journal article or other academic publication or presentation.

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr Ruth Boyask, email: ruth.boyask@aut.ac.nz, telephone: 09 921 9999 ext. 7569

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, Kate O'Connor, ethics@aut.ac.nz, 09 921 9999 ext. 6038.

Thank you for considering this request for your participation in what I hope will be an interesting and valuable piece of research.

If you decide you would like to be included, please contact me by email or telephone within 2 weeks.
Also, if you would like to discuss the research further, please do not hesitate to contact me.

Kind Regards,

Karen Laing

email: karenlaing@hotmail.co.nz
telephone: 0211784661

Project Supervisor Contact Details:

Dr Ruth Boyask, email: ruth.boyask@aut.ac.nz, telephone: 09 921 9999 ext. 7569

Approved by the Auckland University of Technology Ethics Committee on 31st October 2018, AUTEC Reference number 18/396.

Appendix D: Participant consent form

Consent Form

Project title: How do occupational therapists and classroom teachers work across professional boundaries to support students who have profound intellectual and multiple disabilities?

Project Supervisor: Dr Ruth Boyask

Researcher: Karen Laing

- ○ I have read and understood the information provided about this research project in the Information Sheet dated 3rd October 2018.
- ○ I have had an opportunity to ask questions and to have them answered.
- ○ I understand that notes will be taken during the interview and the focus group and that they will also be audio-taped and transcribed.
- ○ I agree to provide some examples of documents, such as assessments, individual education plans (IEPs) or intervention programmes which might illustrate examples of my role.
- ○ If any documents contain identifying information about students, I agree to seek written permission on the provided consent form from the student's parents or carers prior to sharing them.
- ○ I understand that identity of my fellow participants and our discussions in the focus group is confidential to the group and I agree to keep this information confidential.
- ○ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- ○ I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- ○ I agree to take part in this research.
- ○ I wish to receive a summary of the research findings (please tick one): Yes ○ No ○

Participant's signature: .....

Participant's name : .....

Date : .....

Note: The Participant should keep a copy of this form

Approved by the Auckland University of Technology Ethics Committee on 31st October 2018, AUTEC Reference number 18/396.

Appendix E: Guide questions for individual interviews

Constructs (Nodes) of Activity Theory	Guide Questions (in chronological order)	Prompts given
Subject *Individual*	How many years have you been an OT/CT? How long have you worked in your current post? What qualifications do you have? What experience do you have in this area? What professional development opportunities have you experienced? What is your perception of your professional role?	
Object *what is being worked on, acted upon or the focus of activity*	Can you describe an example of an activity you have carried out with a CT/OT to promote positive outcomes for students with PIMD?	
Tools / Artefacts might be concrete (such as materials/object, instrument or resource) or may be abstract (such as a common language, techniques/methods processes or frameworks).	What did you use? e.g. pedagogical/therapy approaches or physical tools) Why did you use this tool? How did you use it? What did you hope to achieve by using it? What do you think might be useful for the future?	
Rules *reflect what supports or constrains the work or activity*	What things supports what you do? What constrains and restricts what you do? Are there any other factors that influence what you do? Have these factors changed overtime? Do you foresee different factors impacting on your work in the future?	
Community *who else is involved in the work or activity*	Who else worked with you on this activity? What was their role and working relationship with you? Who have you worked with in the past? Who do you envision working with in the future?	

Division of Labour *who does what, how the work is shared out and why*	How were the roles and responsibilities shared/divided between you? What were you each trying to achieve? How has that come about? Do you know what others expect of your role? Now? In the future?	
Outcomes *what is hoped to be achieved* *the purpose of the object/actions*	What did you hope to achieve? What did you achieve? What were the outcomes/impact? Have these outcomes changed compared to practice in the past?	

Appendix F: Phases of Thematic Analysis

Braun and Clarke's Phases of thematic analysis	Braun and Clarke's description of the process	Application in this study	Supports and constraints experienced
Familiarising yourself with the data	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas	Prior knowledge of the data gained was during the collection phase The digital recordings of the interviews were transcribed and read several times 'to obtain a sense of the whole' (Graneheim & Lundman, 2004, p. 108) and the initial search for meanings, repeated patterns etc.	This phase provided an important foundation for the analysis of the data. The only constraint was that the reading and transcription of the data was very time consuming, but also valuable.
Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code	Deductive coding used derived from the AT framework. Inductive coding derived from the data collected	The seven a priori codes derived from the constructs of AT provided a useful framework from which to launch further coding as more ideas emerged from the data.
Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme.	N-Vivo was used to assist in the organisation of the large amounts of data and in the synthesis of the emerging themes and contradictions which were drafted using different visual techniques such as a mind map and table.	The process of organising the data and coding through several different methods allowed for the emergence of significant themes and contradictions.

Braun and Clarke's Phases of thematic analysis	Braun and Clarke's description of the process	Application in this study	Supports and constraints experienced
Reviewing themes	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.	Collating all the relevant coded data extracts within the identified themes. Analysing the relationship between codes, themes, and different levels of themes. Identifying contradictions	
Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.	Defining and further refining the themes and contradictions and analysing the data within them. Exploring the different types of contradictions.	
Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.	Writing thesis. Identifying examples or extracts that capture the essence of the point being demonstrated.	

(Braun & Clarke, 2006, p. 87)

Appendix G: Presentation to focus groups

Focus Group

Agenda

- Confidentiality
- Introduction
- Purpose of today's focus group meeting
- Feedback on key themes emerging from the individual interviews
- Discussion; 2 key areas
- Final Comments
- Close

1

Confidentiality

Ground Rules

- Review participant consent form
- The information discussed and views expressed in the focus group must remain confidential and cannot be discussed with third parties.
- The focus group will be audio-taped and transcribed as part of the researcher's studies at AUT. All data will be stored securely and will only be used for research purposes.
- Please speak to Karen (or contact Supervisors) if you have any queries or concerns regarding confidentiality.

2

AUT

SUPERVISORS

DR RUTH BOYASK, DIRECTOR OF POSTGRADUATE PROGRAMMES; SENIOR LECTURER, SCHOOL OF EDUCATION, AUT

DR ELLEN NICHOLSON, HEAD OF DEPARTMENT; OCCUPATIONAL SCIENCE AND THERAPY, SCHOOL OF CLINICAL SCIENCES, AUT

3

How do classroom teachers and occupational therapists work across professional boundaries to support students who have profound intellectual and multiple disabilities?

KAREN LAING

4

Very little is known about how classroom teachers and occupational therapists navigate their relationship when working with learners who have PIMD in the special school setting, or how their perceived professional roles and identities affect their professional practice and interactions with each other.

The aim of this research is to add to the knowledge base in this relatively new, complex area of practice.

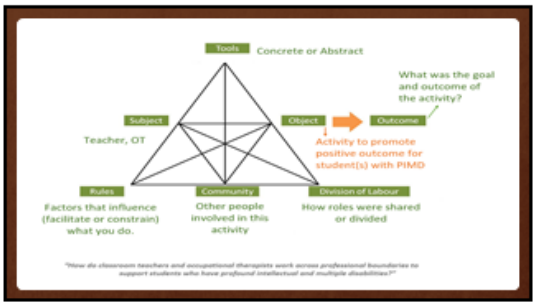
Participants n=14

7 occupational therapists and 7 classroom teachers who work consistently with students who have PIMD and have more than 2 years' experience in their current practice setting.

School A	School B	School C
2 OTs	2 OTs	3 OTs
3 Teachers	2 Teachers	2 Teachers


Research Question
Individual Interviews
Focus Groups
Findings and discussion
• 7 OTs
• 7 Teachers
• 2 Focus groups
• Write thesis!

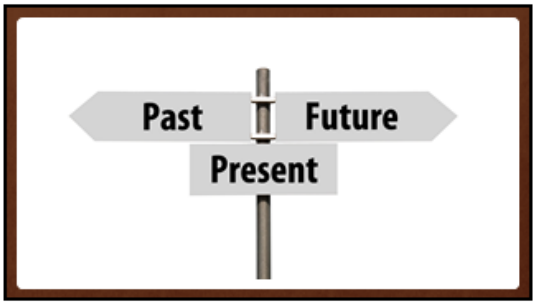
7


Tools
Concrete or Abstract
What was the goal and outcome of the activity?
Subject
Teacher, OT
Object
Outcome
Activity to promote positive outcome for student(s) with PIMD
Rules
Factors that influence (facilitate or constrain) what you do.
Community
Other people involved in this activity
Division of Labour
How roles were shared or divided

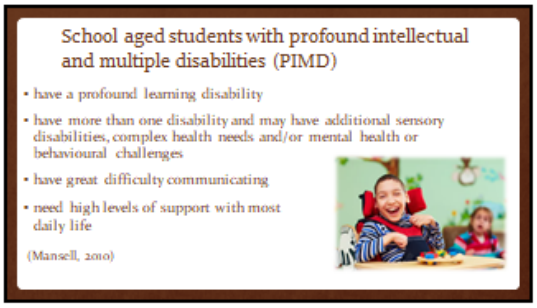
8

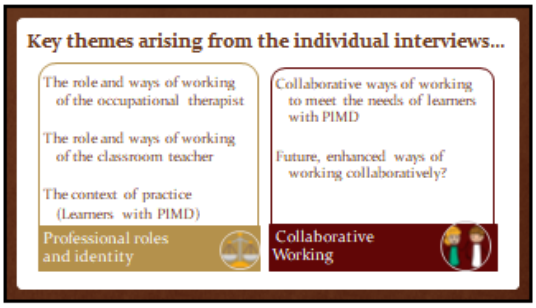

Focus group
• An opportunity to comment, counter, elaborate and engage with some key themes that arose from the individual interviews.
• The learning generated from our discussion will also (hopefully ☺) allow us to explore how working practices may be improved to promote positive outcomes for our learners with PIMD.

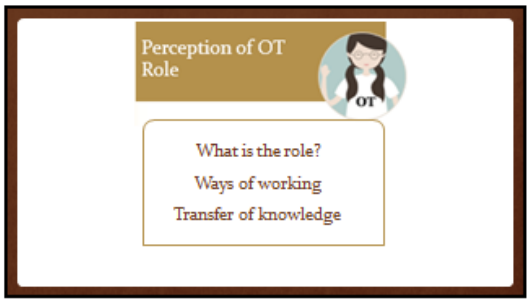
9


Past
Future
Present

10


School aged students with profound intellectual and multiple disabilities (PIMD)
• have a profound learning disability
• have more than one disability and may have additional sensory disabilities, complex health needs and/or mental health or behavioural challenges
• have great difficulty communicating
• need high levels of support with most daily life
(Mansell, 2010)


Key themes arising from the individual interviews...
The role and ways of working of the occupational therapist
The role and ways of working of the classroom teacher
The context of practice (Learners with PIMD)
Professional roles and identity
Collaborative ways of working to meet the needs of learners with PIMD
Future, enhanced ways of working collaboratively?
Collaborative Working



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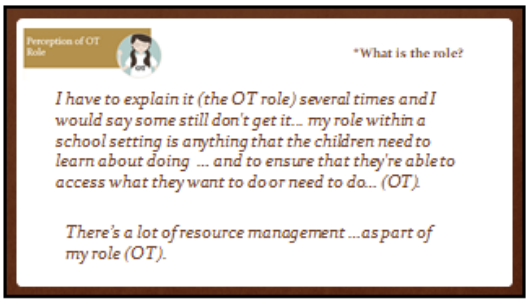

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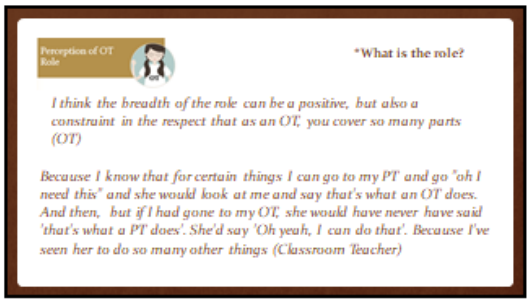

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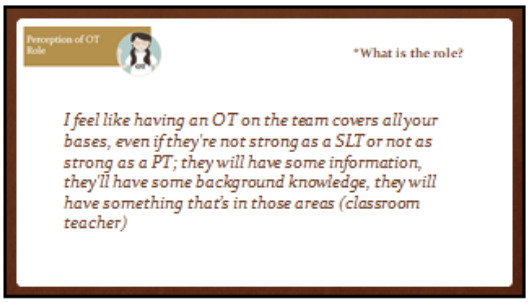

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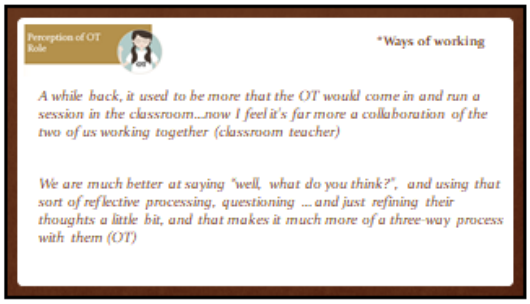

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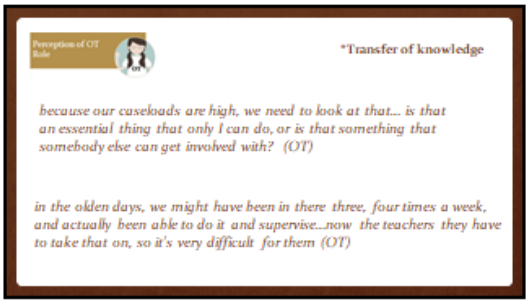

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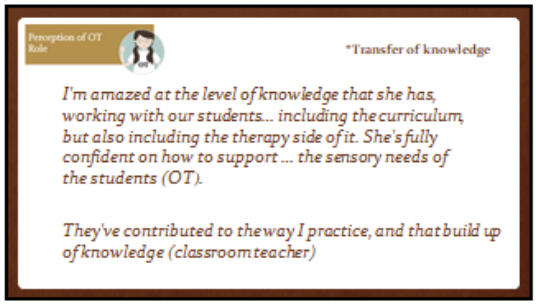

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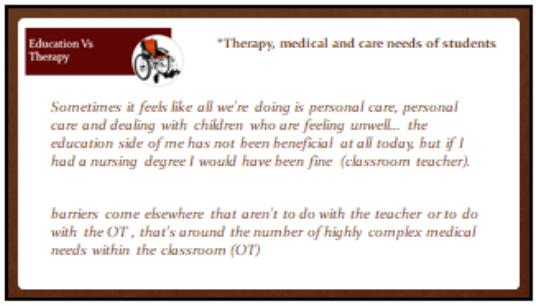

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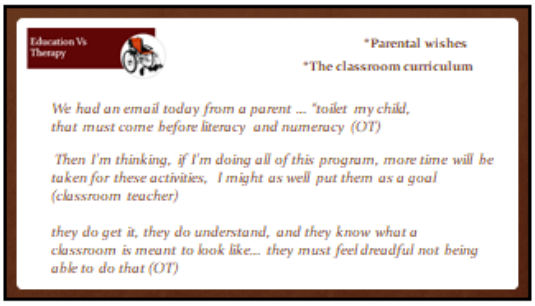

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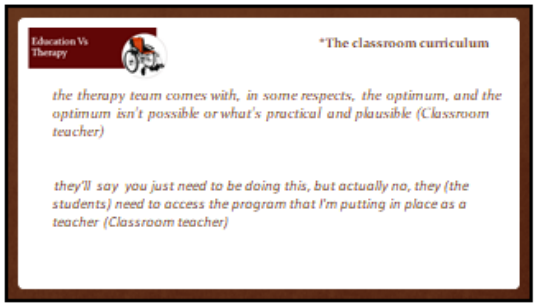

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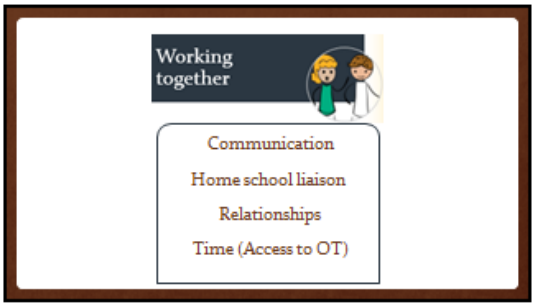

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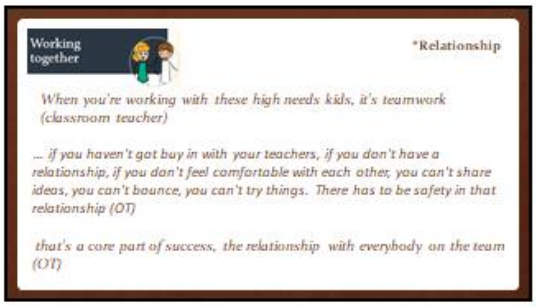

Working together
*Relationship
When you're working with these high needs kids, it's teamwork (classroom teacher)
... if you haven't got buy in with your teachers, if you don't have a relationship, if you don't feel comfortable with each other, you can't share ideas, you can't bounce, you can't try things. There has to be safety in that relationship (OT)
that's a core part of success, the relationship with everybody on the team (OT)

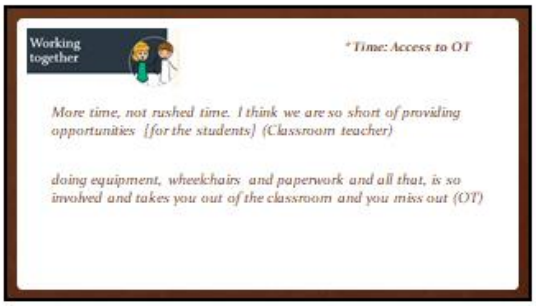
25


Working together
* Communication
We have a relationship going and it makes the communication look easy. And it also makes the meetings more relaxed, because we know what we're there for, we know what our roles are (OT)

26


Working together
* Communication
* Home school liaison
the parents get that regular feedback of what's going on.. then we listen to their news and they might have feedback and say: "Oh, could you ask the OT for ....." (Classroom teacher)
There are also times that they directly contact the parent...I wasn't aware that this was happening (Classroom teacher)

27

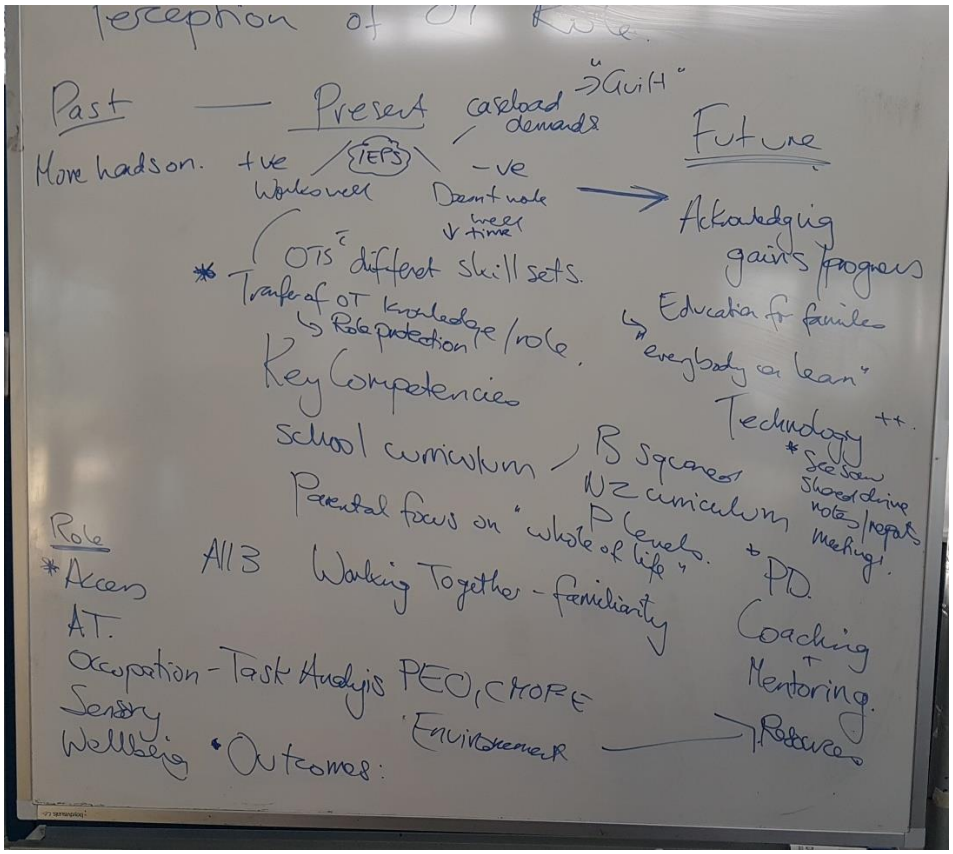

Working together
* Time: Access to OT
More time, not rushed time. I think we are so short of providing opportunities {for the students} (Classroom teacher)
doing equipment, wheelchairs and paperwork and all that, is so involved and takes you out of the classroom and you miss out (OT)

28


Thank You!

29

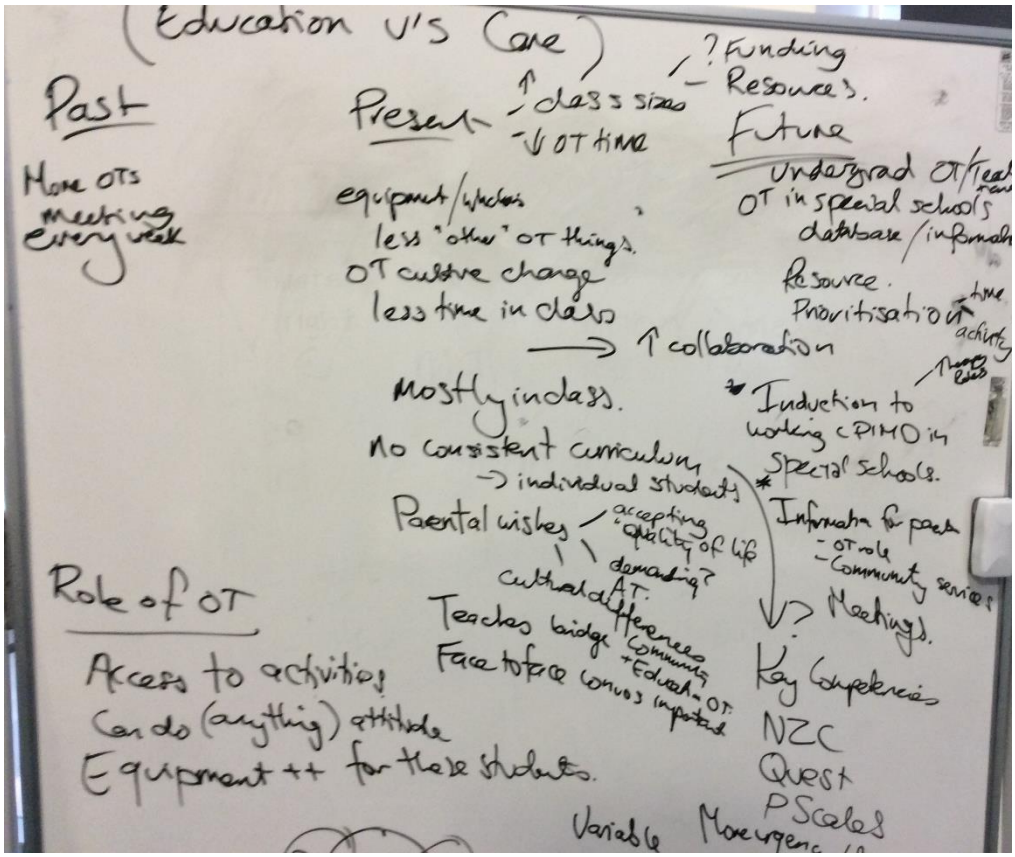
Appendix H: Whiteboard and transcript from first focus group

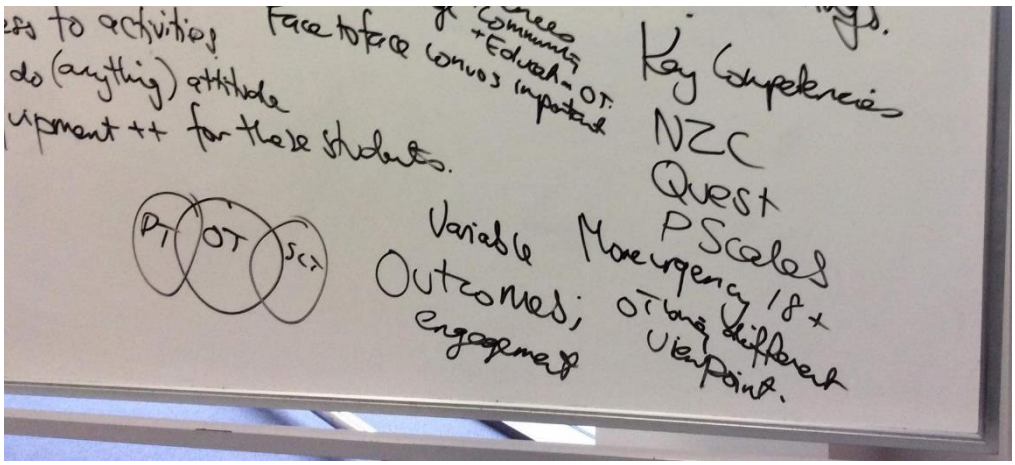


Perception of OT role

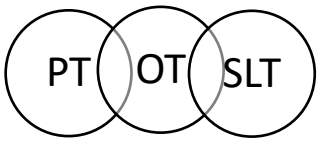
Past	Present	Future
more hands on *[OT]*	IEPs - +ve: Meeting parents -ve: Takes lots of time Lots of additional paperwork Caseload demands – "guilt" *[OT]* OTs with different skill sets Transfer of OT knowledge/role → role protection Key Competencies School curriculum – B Squared NZ Curriculum P levels Parental focus on "whole of life" Working together - familiarity	Acknowledge gains/progress Education for families 'everybody can learn" Technology ++ Seesaw Shared drive Notes/ reports meetings PD Coaching and Mentoring School environment & resources - planning
Role *[OT]* *Access AT Occupation – Task analysis, PEO, CMOP-E Sensory Wellbeing Outcomes		

Appendix I: Whiteboard and transcript from second focus group





(Education versus care)

Past	Present	Future
More OTs Meetings every week Role of OT: Access to activities Can do (anything) attitude Equipment ++for these students  	↑ Class sizes - funding? resources? ↓ OT time Equipment/wheelchairs Less "other" OT things OT culture change Less time in class ↑ collaboration Mostly in class No consistent curriculum → individual students Parental wishes: accepting "quality of life" demanding? AT Cultural differences Teachers bridge community & education & OT Face to face convos important Variable outcomes: engagement	Undergrad OT/teacher training OT in special schools' database/information Resource Prioritisation – time Activity Induction to working with PIMD in special schools – therapy roles Information for parents – OT role community services Meetings Key Competencies NZC Quest P Scales More urgency 18+ OTs bring different viewpoint

Appendix J: Confidentiality agreement (transcriber)

Confidentiality Agreement

Project title: *How do occupational therapists and classroom teachers work across professional boundaries to support students who have profound intellectual and multiple disabilities?*

Project Supervisor: *Dr Ruth Boyask*

Researcher: *Karen Laing*

- ○ I understand that all the material I will be asked to transcribe is confidential.
- ○ I understand that the contents of the tapes or recordings can only be discussed with the researchers.
- ○ I will not keep any copies of the transcripts nor allow third parties access to them.

Transcriber's signature: .....Date: .....

Transcriber's name: .....

Transcriber's Contact Details: .....

.....

Kind Regards,

Karen Laing

email: karenlaing@hotmail.co.nz

telephone: 0211784661

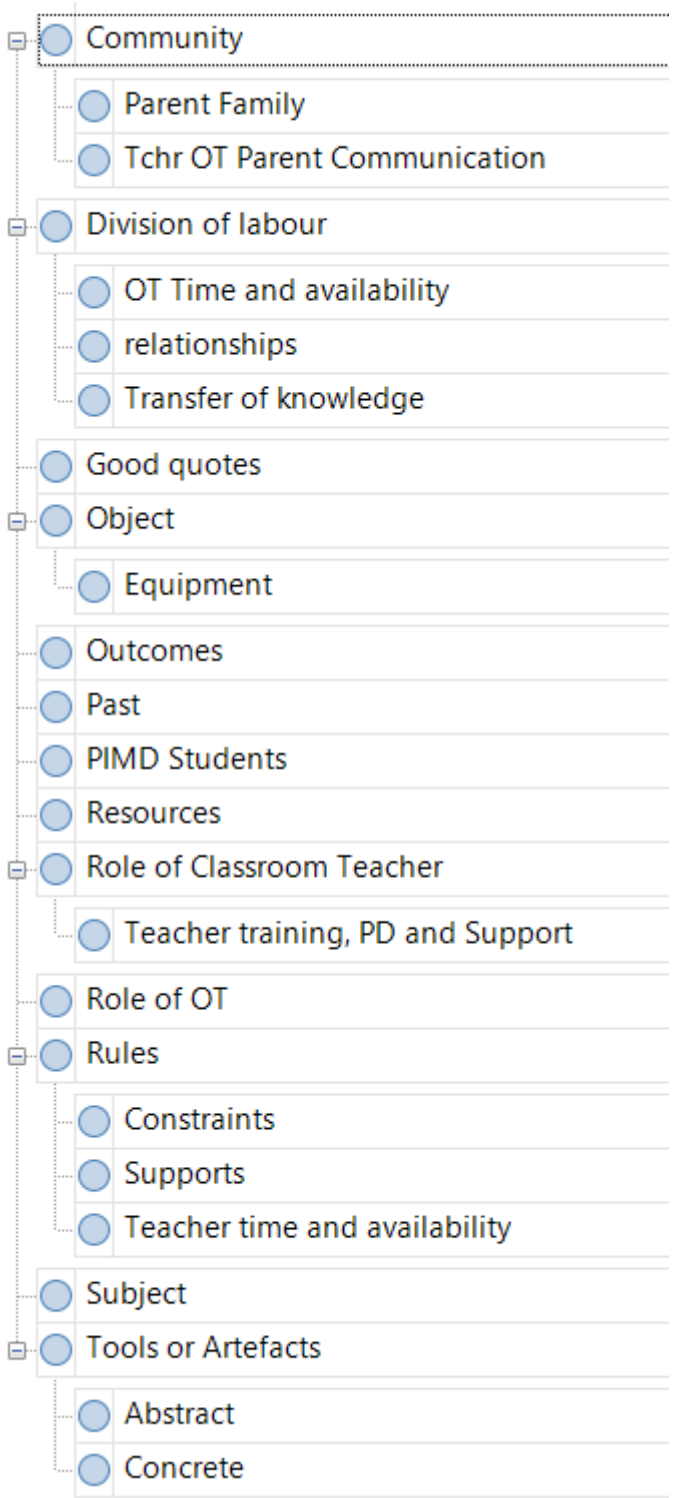
Project Supervisor Contact Details:

Dr Ruth Boyask, email: ruth.boyask@aut.ac.nz, telephone: 09 921 9999 ext. 7569

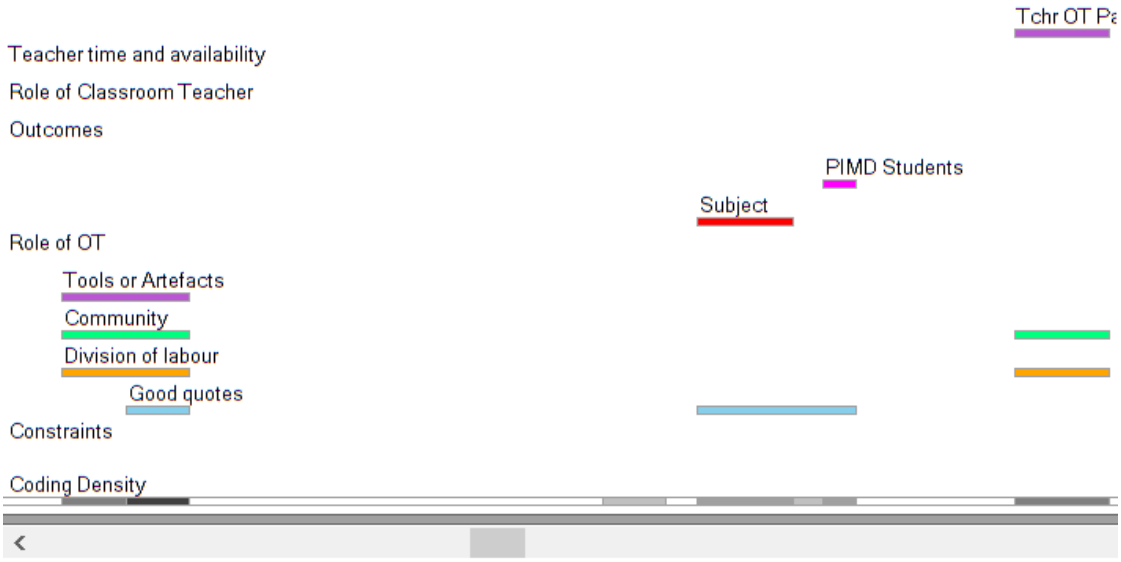
Note: The Transcriber should retain a copy of this form.

Approved by the Auckland University of Technology Ethics Committee on 31st October 2018, AUTEC Reference number 18/396.

Appendix K: Coding from individual interviews with classroom teachers



Appendix L: Example of coding an individual interview (classroom teacher)



Participant C 16:52
Okay, let me just write that down because it's two folds: Support and role. Okay, I find that sometimes it's asking, so I might be talking about for my TA team, I want something to come in the classroom, or happen in the classroom. But I don't either necessary express it, or it's just myself always talking about it. So sometimes I'll get my OT to come in and support me, but we tell, we inform my team what we're looking for. So it's two perspectives coming forward, so that it's heard from multiple perspectives. And now, tell me again, what was the question with support?

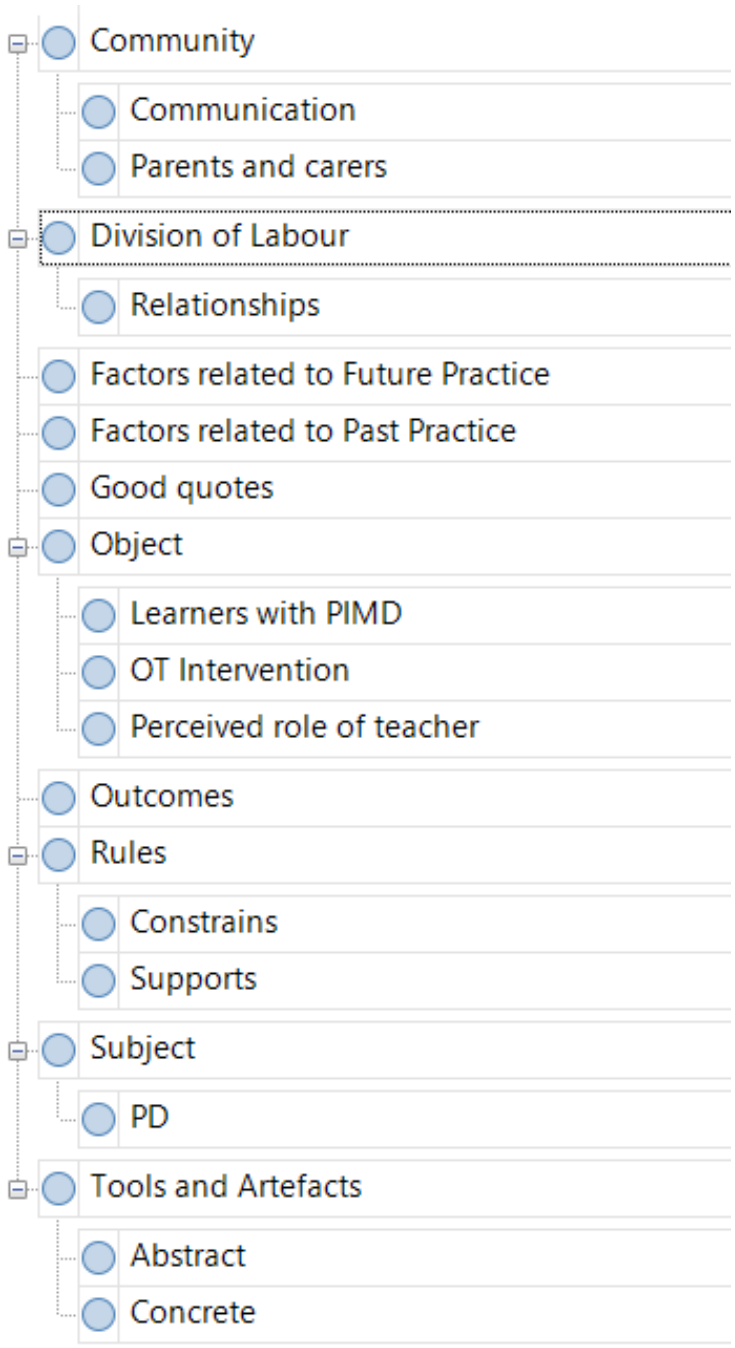
Researcher 17:34
So, what things support your role as a classroom teacher, and it can be systems within the school, or it can be structure or it can be anything. What things support you, do you feel help support what you do?

Participant C 17:48
Not necessarily just the OT?

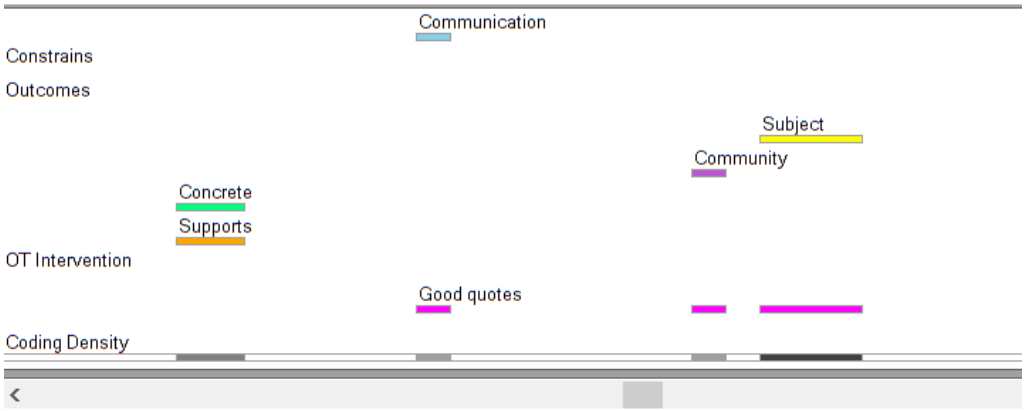
Researcher 17:50
Not just the OT, it can be just like anything in the school, thinking about this working environment.

Participant C 17:57
Definitely a development of my knowledge around the students and the breadth of reading and everything I have done. And yeah, just trying to collate as much of that information. So the quest documents have been really good. I have got a copy of a document called the profound curriculum, which, although it's quite in depth to read actually shows you how all the levels cross and relate. I often go online and look for PMLD curriculums, or what other schools have written particularly from either Australia or the UK. And I think that's a really good level of support. I think it's really about taking some of those key pedagogical ideas. I look at Flo Longhorn, Lilly Nelson and intensive interaction to build up that knowledge. I think it's about really trying to unpack who these students are. And that whole thing about repetition and repetition with variety, that's the word, and just really unpacking it. And I think for me, as a practitioner, really making sure that I've got a good basis in my classroom. So making term one, really getting things organized, and really putting up good clear foundations in my expectations for my students and what I'm hoping because I often start and get into, you know, midway through this term, if not halfway through or later in this term, I think I need to go back again. So I'm focusing a lot on layers this year for that. And I think it's having that additional knowledge from your therapy team and other teachers around the school to be able to , you know, getting those other viewpoints of how you can address a certain hiccup or obstacle.

Appendix M: Coding from individual interviews with occupational therapists



Appendix N: Example of coding an individual interview (occupational therapist)



Researcher 26:41
So your notes are on line? And yeah, and they're all open source?

Participant N 26:47
yes. Anyone can check. Yes, and I can check hers but what I'll do is she'll come up into her program, and then I'll come. So she'll do hers. And then I'll do a parallel one with maybe more specific therapy goals, and then those documents will go into profiles and plans.

Researcher 27:05
Okay. Yeah. So you feel as if the communication is quite good? Yeah, yeah. Okay.

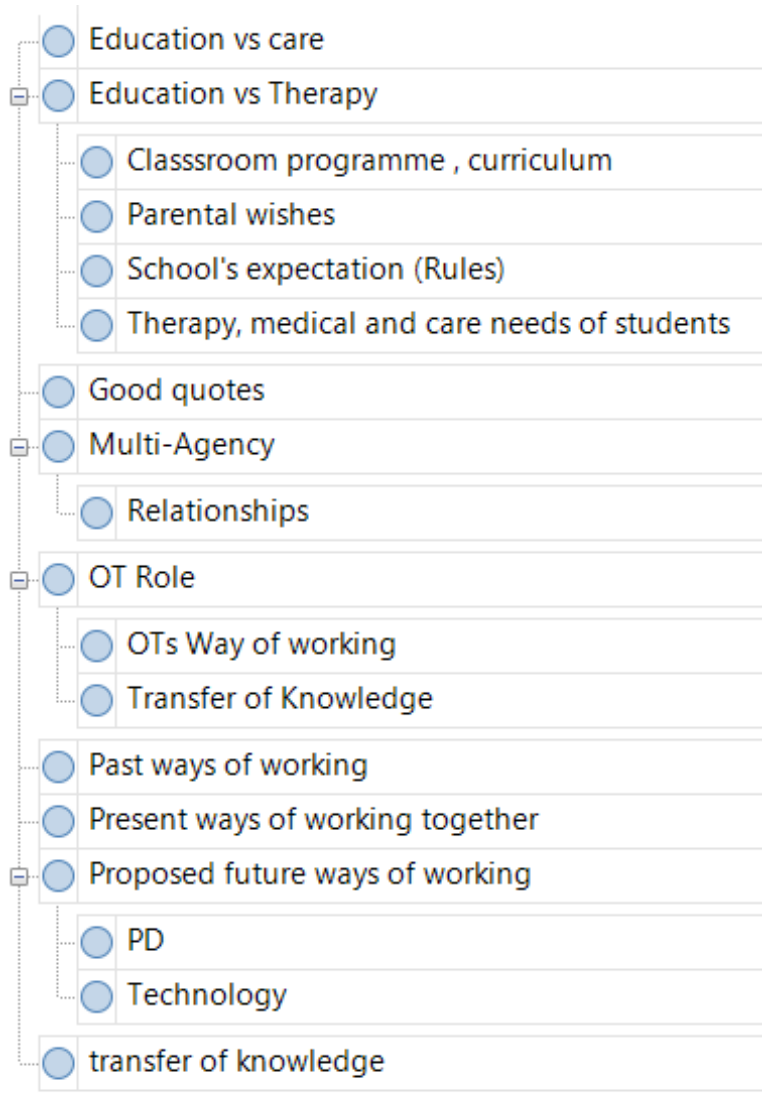
Participant N 27:11
I think our communication is very strong, but I've worked hard. Not that it's been difficult, It's just time.

Researcher 27:18
And you mentioned, this particular teacher had some issues with OT anyway. So how do how did you manage to overcome them? Was there anything special that you did? Apart from your?

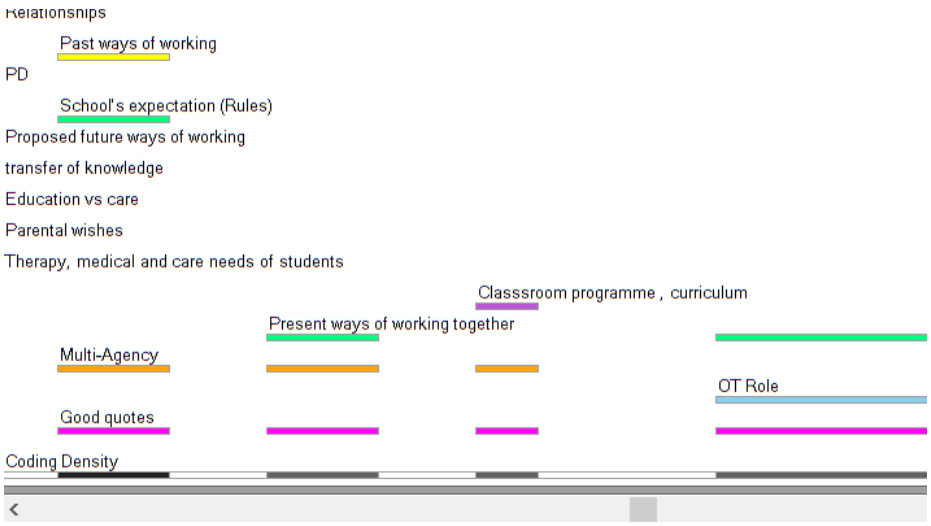
Participant N 27:28
I don't know? I did have you overcome the most of it. So Yes. I think I have, I have overcome them enough that we both work effectively for the benefit of the students. And it was all about, it's about, she needed more listening. And I just sort of would go , I want this way. And this is the way I want it. And in the beginning, I go there, but I just tap a slight ot twist to it. And it was just building respect, If some of the things I suggested worked or was taken on board or we saw a change or feedback from parents was good. There were little ones, but it was enough.

Researcher 28:13
And do you mentioned about the teachers understanding your role? But I guess Do you feel as if you understand the teacher's role in that class, and you got quite a good handle on that, or

Appendix O: Coding from Focus Group 2



Appendix P: Example of coding (focus group 2)



MOANA 49:24

And if it's every three weeks, then it becomes about the wheelchair appointment. Rather than, like, what we're doing through our switching or our learning stories, we used to get through those, you know, or "today this happened"it was nice to hear those details.

CLARE 49:44

I think you have to have a face to face, and sometimes those face to face conversations, you can get it done in five minutes or less, you know, sometimes, as opposed to having five, six conversations via email.

MOANA 49:57

if ts weekly, we might go let's focus on student A, and let's find about where we can support this child through their program and stuff like that, we can have a lot more focus areas rather than, okay, in the class sizes. Class sizes and time that were in there. By the time I have my meeting and we and we were going into peak hour traffic time. This is like

GRETA 50:21

I used to try creating more time both for the students and for thoughtful work with teachers, I tried to like focus on doing less things so rather than actually trying to push forward goals for all my students at once. I would just cover all the safety and urgent health need and then I just have like a few students that I was pushing toward major goals with. I found for me, that meant I was doing deeper, more effective work with those kids... the downside of that was that less of my kids got, like I had less kids but getting more thoughtful input