

**EXPLORING THE IMPACT OF MUSIC ON THE PLAY EXPERIENCES OF
CHILDREN AND YOUNG PEOPLE WITH PROFOUND AND MULTIPLE
LEARNING DISABILITIES (PMLD) AND THEIR SUPPORTING STAFF**

by

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**A thesis submitted to the University of Birmingham for the degree of
DOCTOR OF PHILOSOPHY**

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October 2023

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Abstract

Background: Individuals with Profound and Multiple Learning Disabilities, have a profound intellectual disability; often combined with physical disabilities, sensory impairments and/or complex medical needs. Play, is frequently neglected as a priority for learners with PMLD, opportunities presented for conventional play are difficult to access and play interventions for this population are sparse. Evidence suggests that music and vocal play are highly motivating and fundamental to the well-being of individuals with PMLD. This research investigated the impact of using music, as a medium to facilitate play for people with PMLD through the development and implementation of the Musical Play Framework.

Methods: Adopting a pragmatic approach, and mixed methods design, the research was developed in two phases. Phase 1 used participatory design with proxies to consult with people with PMLD, aged 5-25 years, and their families (n=26). Using an online exploratory listening experience, consisting of four instrumental tracks, and parent/carer proxies, thirteen people with PMLD were consulted on their musical preferences. Findings from Phase 1 influenced the design on of the Musical Play Framework used in Phase 2.

Phase 2 of the research took place in two UK specialist settings between December 2021 and July 2022. Phase 2 used a multiple baseline design, and focus-group interviews, to investigate the impact of the Musical Play Framework on the potential expressions of playfulness and peer-play of people with PMLD (n=12) aged 6-22 years. Staff participants in both settings were trained in using the Musical Play Framework, after which they implemented the sessions, on a twice-weekly basis. Data on the attitudes and confidence of staff (n=11) in facilitating play opportunities, as well as the feasibility of implementing the framework were also collected.

Findings: Musical Play sessions offered opportunities for people with PMLD to be playful, both individually and with their peer. Potential expressions of playfulness were observed in relation to the non-conventional use of musical instruments as toys. Playfulness was affected by the supporting adult and environment in which the sessions took place. Implementing the Musical Play Framework changed staff approaches to, and confidence in, facilitating play for people

with PMLD. Staff responses highlighted further questions surrounding the purpose of targeted, outcome driven learning for people with PMLD, the value of play and the topic of age-appropriateness.

Acknowledgements

I am very grateful to all those who have supported this research.

To all my family.

Dad, for showing me how to be playful, and for being the funniest person I know.

Mum, for your unwavering belief in my abilities.

Val, for sharing your love of learning with me.

Ben, for your encouragement, support, love, and time.

To my supervisors and peers.

Dr Lila Kossyvakis, Dr Emmanouela Terlektsi, and Dr Sara Curran.

Jules and Rachel for support with coding the videos.

To the examiners of this thesis

To all the families and people with PMLD I have learned from, it is, and has been a privilege to know you.

Special thanks to,

Raymond and Rowena, for sharing your playfulness.

Simran, for sharing your love of music so readily.

With thanks to the participants, families and settings that made this study possible.

This research was funded by the Economic and Social Research Council (Award No. ES/P000711/1).

*This is my life.
These are my moments,
Not what ifs or maybes.
This is my life.
These are my hours, stories, memories.*

*Come close to hear what I'm saying,
Wait now,
Listen with your eyes.
Share in the pleasures of being.
Bask in the joys of this time.*

This is my life.

For the people I know, and have known, with profound and multiple learning disabilities, who
have taught, and continue to teach me so many things.

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Terminology

<i>Acheeva bed</i>	A multi-positioning solution for prone/supine and side laying. Acheeva learning station (Symmetrikit, online n.d)  The image shows a yellow and black multi-positioning bed, known as the Acheeva bed. It is a low-profile, adjustable bed with a yellow frame and black padding. The bed is mounted on a central column with four casters for mobility. The head and foot sections are adjustable, and the bed is shown in a slightly elevated position. The brand name 'ACHEEVA' is visible on the side of the headrest area.
<i>Behaviour</i>	Any physical movement, facial expression or vocalisation expressed and/or received as a communication.
<i>Impairment</i>	The absence of an individual's physical body part or the functioning of such part, such as the absence of vision, a visual impairment. Although sometimes a contested term, within this thesis, a cognitive or intellectual impairment, refers to the absence of, or the absence of the function of, parts of the brain. The term is also used when the impairment may have been presumed.
<i>Intervention</i>	The act of implementing purposeful activity to alter or add to the normal routine and/or proceedings. Within this thesis term intervention is not used in its medical form and is not intended to be a corrective or outcome focused device.
<i>Musical Play</i>	Concerned with the process not the outcome, Musical Play is based on a framework of eight principles used, alongside upbeat instrumental music, to support creative, in-the-moment activity. Musical

	Play is observable, it happens with someone or something (a musical instrument).
<i>Peer-awareness</i>	The awareness of the presence of a peer (those of a similar age group). Peer-awareness is used interchangeably with 'observer play' during the coding and results section of the study.
<i>Playfulness</i>	A subjective phenomenon. Playfulness is both an internal state and an external expression of feeling. Playfulness may be influenced by an individual's current biological and physiological state as well as environmental factors, social availability, and previous experiences.
<i>PMLD</i>	A label assigned to people with profound and multiple learning disabilities. This term is defined in Chapter 1. The term may be used interchangeably with PIMD throughout the thesis.
<i>Potential expressions of playfulness</i>	Acknowledges the role of proxy interpretation in observing, understanding, and recording the playful behaviours (playfulness) of people with PMLD.
<i>Specialist setting</i>	Educational setting such a special school or college intended to provide specialist education for children and young people with learning disabilities.
<i>Staff</i>	People employed to work in a teaching capacity with the individuals with PMLD in either the school or college setting.
<i>Teaching Assistant (TA)</i>	For this thesis both Teaching Assistants (TA's) (Setting 2) and Learning Support Practitioners (Setting 1) are categorised in this way. Teaching assistants '<i>support teachers and help children with...learning activities</i>'

	(National Careers Service, UK Gov., online, n.d). Learning support practitioners typically provide more one-to-one support to individuals. In Setting 1 this role also involved providing personal care to individuals with PMLD. Both roles can be undertaken at either a Level 2 or Level 3 position.
<i>Young person</i>	Individual aged between 18-25 years.

1. INTRODUCTION

Introduction

This chapter introduces the motivation for this thesis. It aims to define the population with whom this research took place, people with profound and multiple learning disabilities (PMLD), after which the philosophical underpinnings of the research, the biopsychosocial model of disability, and the Capabilities Approach are introduced. Finally, the aims of this research and the structure of the thesis are outlined.

1.1 Origins of the research

In undertaking this research, it was hoped that people with PMLD would be acknowledged as playful people, with the potential and desire to have fun. Having observed 'playtime' for people with PMLD across various UK special schools, the researcher was convinced that many of the things happening were not play. During these sessions toys were placed on to the trays of people with PMLD and remained there, untouched, for the duration of the 'playtime'. This 'playtime' did not seem to facilitate feelings of playfulness or joy in either the people with PMLD or the staff supporting them.

Working as a music facilitator, the researcher has been privileged enough to experience the playfulness of people with PMLD, their peers, families and supporting staff, through music and sound. The researchers' initial interest in this area developed whilst studying for a degree in musical performance at Birmingham Conservatoire. Whilst studying the researcher also volunteered with the charity Melody, supporting music-making opportunities for people with intellectual disabilities (see Pickard and Rushton, 2023, for a full description of the project). This experience was the catalyst from which a career as a music facilitator with, and for, people with intellectual disabilities sprung. As a music facilitator the researcher aims to create opportunities for shared musical experiences, the purpose of these experiences is to 'be' together through, with, and in music. Sessions are not target driven, neither do they have therapeutic goals, and whilst learning and individual development can, and does, take place, sessions are shaped in a way that this occurs incidentally, and without guarantee, intent or

motive. In practice music-making becomes the invitation, the game and the adventure; it is the space in which we explore and celebrate our curiosities, personalities and sense of togetherness. In creating spaces, through using instruments, sounds and vocalisations, the researcher has established permission to play with children and young people with intellectual disabilities, their families, educators and supporting staff. Personal experiences have demonstrated that when individuals are in good health, feel safe and are invited to play using appropriate approaches and resources, people with PMLD are playful, and music is a space where this is often possible.

This research aimed to investigate whether the knowledge and experiences of the researcher could be translated into a framework for non-music specialists to utilise when supporting people with PMLD. The Musical Play Framework was developed with the intention to facilitate regular access to play opportunities for people with PMLD. The aim of the framework was to support adults (non-music specialists), who work with people with PMLD daily, to consider what playfulness looks like, and to create and deliver play experiences which elicit feelings and expressions of playfulness for the individuals involved. In creating a framework which could be used by non-specialists, it was hoped that opportunities for play and playfulness would not be limited to the availability of a music facilitator and that people with PMLD would have more regular and consistent opportunities to play.

Personal Context

At the time of writing this thesis the researcher had worked as a music facilitator within numerous community, charity and educational settings across England for thirteen years. In 2014 the researcher established a company which adopted a music facilitation ethos and currently delivers music-making opportunities across the West Midlands area in England. During the Covid-19 pandemic, the company produced free online resources which were used, and recommended to families, by specialist settings in the UK and abroad to support music-making for people with intellectual disabilities. The company had previously worked with both settings included within this study, this was on-going in Setting 1, and had ended in July 2017 in Setting 2. The researcher was not working as a music facilitator in either setting at the time of

this study. Although unknown to the researcher before starting this research both settings had accessed the online video resources during the Covid-19 pandemic.

1.2 Previous enquiry

A brief outline of two previous studies conducted by the author (Rushton and Kossyvaki, 2020; Rushton and Kossyvaki, 2022) are presented below. The processes and findings of both studies influenced the development of this thesis. The initial version of the Musical Play Framework was created during the first study, and a consultation with school staff was undertaken which influenced its development. The first study was undertaken in partial fulfilment of a Masters of Severe, Profound and Multiple Learning Difficulties (SPMLD). The second study, conducted as part of the Master of Social Research (Education) focused on the experiences and effects of listening to and making music for children and young people with PMLD in their home environment. These musical encounters were described by parents/carers of people with PMLD, and findings suggested that some people with PMLD had, and communicated, musical preference. This finding prompted the researcher to consult people with PMLD and motivated the first phase of research within this doctoral thesis. A description of each of the studies is presented below.

1.2.1 Using Musical Play with children with profound and multiple learning disabilities at school (Rushton and Kossyvaki, 2020).

The small-scale study aimed to investigate the impact of combining music with play, on the experiences of children with profound and multiple learning disabilities (PMLD).

The *General Principles of Musical Play*, and *The Role of Adults in Play*, were developed from several existing practices including Musical Play (Kemple et al., 2004), Intensive Interaction (Nind and Hewett, 2001), Playful Practice (Corke, 2012), creating a responsive environment through reduced distractions as discussed by Ware (2012), and the Adult Interactive Style Intervention (Kossyvaki, 2018). Adaptations were made when principles were not appropriate for use with children with PMLD. For example, 'enhance children's exploration by adding well-chosen and often open-ended questions' (Kemple et al., 2004), was removed as it was above

the cognitive level of comprehension for children within the study, and instead the principle became to 'support exploration in non-conventional ways'. Principles were simplified to increase understanding and improve usability by school staff.

The evidence from this research (Rushton and Kossovaki, 2020) suggested that the play skills of children with PMLD vary greatly. However, Musical Play positively impacted on the levels of engagement and playfulness of all child participants. This study highlighted the importance of creating discrete opportunities for children with PMLD. It addressed the significance of the adult as a play-partner on the play experiences of children with PMLD and made suggestions of how, through combining music and play, children with PMLD can develop individual and peer-play skills. It was limited due to its sample size (n=5), participant attendance and timeframe (five-weeks). Providing the foundations for this thesis, this study was the catalyst. The outcomes of this research sparked a desire to investigate whether this short-term research project would translate into a viable intervention for staff, carers and parents supporting people with PMLD.

A second study, into the role of music within the home-lives of young people with Profound and Multiple Learning Disabilities: Parental Perspectives (Rushton and Kossovaki, 2022), further influenced the thesis design.

1.2.2 The role of music within the home-lives of young people with Profound and Multiple Learning Disabilities: Parental Perspectives

(Rushton and Kossovaki, 2022)

The study was developed based on the researchers' interest on how children and young people with PMLD were accessing music in their homes, and what influence this had on their behaviours, moods, and relationships. Due to the restrictions in place because of the Covid-19 pandemic, this study collected parental perspectives on these experiences and did not directly involve people with PMLD. It considered the qualities of music, and its ease of access as attributes which may be accessible to people with PMLD and their families.

This study aimed to investigate parental perspectives on how children and young people with PMLD encountered music at home, and how music affected the behaviours and mood of children and young people with PMLD. It also considered the role of music within the parent-child relationship. Using a mixed-method explanatory sequential design and cross-sectional survey methodology the study collected data from parents and carers of children and young people with PMLD. Data was collected from a non-probability convenience sample using an online questionnaire.

Results showed that children and young people with PMLD accessed a wide range of musical genres, instruments, and resources within the home. Parents stated that music was used for enjoyment, to support mood-regulation, and to add routine and structure to daily-life. They commented on the ways they felt listening to music and music-making elicited playful responses and supported opportunities for communication and engagement with their child. Furthermore, parents reported that listening to music is an activity which facilitates mutual feelings of connectedness and strengthens family bonds.

The study was one of the first to provide evidence that supports the positive role of music within the home-lives of children and young people with PMLD, as experienced by their parent/carer. It highlighted the inclusive and emotive nature of music and considered ways music may be utilised to support the understanding and well-being of people with PMLD. The potential for the Musical Play intervention to be utilised to support playful interactions in the home-settings of people with PMLD is beyond the capacity of this thesis but is an area which would be of great research interest. The findings from this study suggested that equipping and empowering parents to facilitate positive musical experiences within the home may be instrumental in supporting the social and individual needs of a child or young person with PMLD and their family.

Further findings from this study suggested that parents considered children and young people with PMLD to demonstrate musical preferences. This is of particular interest for this thesis, and the development of the Musical Play Framework. If people with PMLD have musical

preferences, then taking these into consideration may further enhance their playful experiences. These musical preferences, and their characteristics, are investigated further in Chapter 5, and led to the development of Phase 1 of this thesis.

1.3 Profound and multiple learning disabilities (PMLD)

1.3.1 Terminology

When discussing people with disabilities, or disabled people, this thesis uses person-first and identity-first language interchangeably. When discussing people with PMLD the thesis uses person first language on the understanding that people with PMLD are unable to self-identify as profoundly disabled (Ladau, 2015) due to their cognitive disability.

1.3.2 PMLD

The term profound and multiple learning disabilities (PMLD) is used within this thesis. This term is widely accepted across UK educational contexts, and was the terminology used by staff participants within this study. The definition of PMLD provided by Doukas et al. (2017, 12) is adopted within this research.

‘People with Profound and Multiple learning disabilities are a heterogeneous group of people with a profound intellectual disability, often combined with additional disabling conditions such as physical disabilities, sensory impairments and complex medical needs’.

Although there is currently no universally agreed definition (Nind and Strnadová, 2020), people with PMLD have a profound intellectual impairment, combined with physical disabilities, sensory impairments, and complex medical needs. The term PMLD is not a medical diagnosis, rather it is a label used to encompass a wide variety of individuals who have profound intellectual and complex physical disabilities (Sheehy and Nind, 2005). Within literature the term PMLD is often used interchangeably with Profound Intellectual and Multiple Disabilities (PIMD), the latter is used on a wider global scale

(Simmons and Watson, 2015). However, the term PMLD was used by parent/carers involved in this research and staff participants of this study, and is the terminology currently used by the Department for Education (DfE), UK government.

People with PMLD often experience the world in a sensory way, having little or no understanding of formalised language (Grace, 2017), and will live their lives interdependently, reliant on support for all aspects of daily life (Vehmas and Mietola, 2021). Adopting the terminology PMLD to describe this population highlights the distinctly different ways in which they encounter the world, the barriers they experience, and the unique pedagogical approaches and methods they may require to support communication, interaction, and learning (Imray and Colley, 2017).

The number of children and young people recorded as having PMLD in educational settings in England, according to the school census, at the time of this study (2021-22) was approximately 11,000 (UK Gov, 2022). However, evidence suggests that the population is increasing in both size and age, primarily because of medical advances and increased survival rates (Carpenter et al., 2017). As the population increases in both size and age, it is necessary to better understand effective ways to support the experiences, well-being, and quality of life of people with PMLD, to enable them to flourish.

1.4 Philosophical underpinning

1.4.1 Models of disability

Models of disability theorise about, and aim to provide descriptions of, the notion of disability, conceptualising what makes the 'disabled' differ from the 'abled'. The most frequently discussed versions of these are the medical model and the social model of disability. These models are conflicting in their nature. The medical model, a deficit-based model, argues that since disabilities are diseases or illnesses, disabled people require methods of treatment to 'repair' their state of being (Thompson, 2016). Within this model an individual is regarded as disabled if, due to their impairment/s, they cannot do things 'normally' (Rees, 2017). This perception of disability often leads to limited perceptions of a persons' capability, victimizing or

excluding the individual from wider society. The medical model of disability is reductionist, concluding that it is the state of the person that causes the disabling issue or disability, if, because of their impairment, a person is not able to meet the 'norm' within society, they are considered disabled.

In contrast to this, the social model assumes that disabilities are a result of social and political constructs, disabling barriers and a lack of acceptance within wider society (Barnes, 2019). Shakespeare (2013), who is a great advocate for the social model of disability, argues that society disables individuals. This social model of disability 'undermines the idea that disability is caused by bodily impairment,' (Hodkinson, 2016, 27) and instead implies that with enough societal adaptations everyone would be 'abled'. Whilst this model of disability is advocated for by many individuals with physical disabilities, it is debatable whether this model is viable or indeed practical for individuals with severe and profound learning disabilities. Although people with PMLD are likely to be further disabled by physical and attitudinal barriers within society (Sheehy and Nind, 2005), it should be acknowledged that no amount of societal adaptation is likely to overcome an individual's profound intellectual disability, often caused by a neurological difference (for example part of the brain being missing or damaged).

Within this research the biopsychosocial model (Engel, 1977) of disability is adopted. This model views disability as a combination of the state of an individual's physical and mental health, and the impact of the society, social experiences, and opportunities, in which they live (Bath et al., 2014). The biopsychosocial model of disability acknowledges that disabilities are caused by biological or physical impairments which require medical treatment. This model recognises the complex medical needs of people with PMLD, which often require ongoing medical treatment, from a wide range of specialists to support quality of life, and in some instances sustain life (Rees, 2017). It is necessary to acknowledge these complex health needs, to ensure vital services and resources are available to this population (Nind and Strnadová, 2020). Still, this philosophical viewpoint also recognises the compounding disabling barriers present within society.

This study was undertaken from the perspective that people with PMLD are disabled due to their profound intellectual disability, often combined with complex medical needs and/or sensory impairments (Mansell, 2010; Doukas et al., 2017). They are also people with the same rights as all humans, to live a high-quality life, to experience, participate, and engage with society. People with PMLD are playful, resilient and loved (Vorhaus, 2014; 2015; 2016), they are active in developing interactions and relationships (Watson, 2020), and are unique individuals with preferences and interests (Rushton and Kossyvaki, 2022). However, they are further disabled by numerous social constructs, attitudes and a lack of knowledge and suitable resources (Nind and Strnadová, 2020).

The fundamental principle of this research is that everyone is different and that all humans live and experience the world in a unique way, regardless of their abilities or disabilities. The researcher acknowledges the equal worth of all these experiences. The collaborative nature of the first phase of this research, in which the contributions of people with PMLD influenced the design of the second phase of the research reflects this philosophy. Furthermore, the methods of data collection used within this thesis, described in Chapter 4, in which participants with PMLD are compared only to themselves also reflects this. Finally, the use of staff participant quotes within the narrative of the text in Chapter 7 aims to further acknowledge the worth of all contributors to this research.

1.4.2 Capabilities approach

The capabilities approach emphasises the diversity of human experience (Watts and Ridley, 2007). Originating from the works of Sen (1999) and further developed by Nussbaum (2011) the approach is concerned with ‘human freedom’ and the capability of people to lead the kind of lives that they, and others, value (Watts and Ridley, 2007).

Nussbaum (2011) outlines ten ‘central capabilities’ which she suggests are essential for human flourishing; ‘life, bodily health, bodily integrity, senses, imagination and thought, emotions, practical reason, affiliation, (living in harmony with) other species, play, and control over one’s environment’ (Sissons et al., 2023). Considering these central capabilities in relation to people with PMLD, it may be argued that some individuals with PMLD may never attain all ten of

Nussbaum's central capabilities (Vorhaus, 2015), for example some individuals will not have the capability to practically reason. However, Nussbaum (2007) highlights that these capabilities may be realised with the support of others, emphasising the interdependency (dependence of two, or more, people on each other) of people with PMLD. Furthermore, it should be acknowledged that the absence of any of these capabilities, due to the profound and complex disabilities of people with PMLD does not lessen the moral value of the person (Vorhaus, 2015). Additionally, the ten central capabilities do not provide an exhaustive list of the capabilities of people with PMLD. Observations, motivations and intentions of policy and practice should not be limited to these capabilities to the detriment of acknowledging and supporting other capabilities which are valuable for, or are valuable to, an individual.

When applied specifically to people with PMLD, the capability approach acknowledges the disabling biological, psychological, and societal factors which may impact on the potential for people with PMLD to flourish. Combining both the skills and abilities of an individual, with an understanding of their 'social, political, and physical environment' (Stermann et al., 2020, 580), the capability approach could be considered a strength- based reflection of the biopsychosocial model of disability discussed earlier in this chapter. Instead of focusing on the limitations of people with PMLD, a deficit-based approach to disability, capability theory promotes the value of the capabilities of people and acknowledges that these may not conform to normative ideals of productivity or achievement. The approach focuses on increasing individuals' capabilities through access to resources (Watts and Ridley, 2007), suitable and supportive environments (Nussbaum, 2011), and/or development of skill (Stermann et al., 2020).

This philosophical approach not only reflects the positionality of the researcher but, since play is highlighted as a central capability for human flourishing, '*being able to laugh, to play, to enjoy recreational activities*' (Nussbaum, 2011,34), it further strengthens the weight and value of this research. Nussbaum (2011) highlights the difficulties that disabled children may have surrounding play, and the additional support that may be required to enable them to convert resources into capabilities. The Musical Play Framework is designed to acknowledge this. In combining music with play, it is founded on the strengths and abilities of people with PMLD, to

engage with, and respond to, music (Corke, 2012; Kittay, 2008; Ockelford, 2008). Through access to resources (the Musical Play Framework and appropriate instruments), in a suitable and supportive environment (high levels of dedicated adult support, in a non-distracting environment) and the opportunity to practise playful skills, Musical Play sessions are designed to support flourishing.

Flourishing, in this context, can only be achieved when the individual has both the ‘internal capability’, or ability (Nussbaum, 2011), combined with the opportunity to act (Sissons et al., In Press). Nussbaum highlights that this opportunity to act or ‘combined capability’ (Nussbaum, 2011) is not simply the absence of negative factors or restrictions, but instead the presence of positive conditions, which allow individuals to flourish. The Musical Play Framework is intended to be implemented as a creative opportunity for flourishing. It is hoped that the sessions will be a conducive environment, in which the playful capabilities of people with PMLD, similar to the joy, laughter and humour, expressed during the comical theatrical performances of Vorhaus’ (2016) research, will flourish.

1.5 Aim of the thesis

The aim of this thesis was to consider the effects of implementing Musical Play sessions on the play experiences of people with PMLD and their supporting staff. The positive effect of music on the lives of people with PMLD has been commented on in literature (Corke, 2012; Ockelford, 2008; Ockelford et al., 2011) and experienced in practice. Additionally, the complexity and difficulties in conceptualising, providing, and facilitating play experiences for people with PMLD has also been observed (Imray, 2017; Nijs et al., 2016; Watson, 2015). The aim of the Musical Play Framework was to consider whether using music, a motivating and engaging medium for people with PMLD, as the foundation to support opportunities for play and playfulness, could overcome some of the barriers to play and playfulness that people with PMLD, and their supporting staff may encounter. This thesis builds on previous research (Rushton and Kossovaki, 2020). Firstly, to develop the Musical Play Framework in partnership with people with PMLD and their families (Phase 1). Secondly, to better understand the impact of the Musical Play Framework across a wider range of settings and ages (Phase 2). Finally, to use

robust methods of data collection, to examine the impact of the framework on the potential expressions of playfulness of people with PMLD (Phase 2).

It was important to the researcher that this study investigated the effect of the intervention on both children and adults with PMLD, firstly, to draw attention to the role of play within adulthood. Also, to ensure the increasing population of adults with PMLD (Carpenter et al., 2017), for whom there is scarce research, due to the ethical and practical complexities of researching with this group of people, have a presence within research.

Phase 1 of the research aimed to answer the following research question:

- How do people with PMLD respond and engage with the varying characteristics of pre-recorded instrumental music?

Phase 2 of the research aimed to answer the following research questions.

- How does the introduction of Musical Play sessions affect the potential expressions of playfulness of students with PMLD?
- How does Musical Play impact peer-awareness and peer-play opportunities for students with PMLD?
- How does the use of Musical Play affect the attitudes of teaching-staff towards play for students with PMLD?

The aim of the research was to better understand the impact of using the Musical Play framework as a medium to facilitate play and provide opportunities for playfulness, for people with PMLD. Alongside this, it was important to explore the usefulness and useability of the framework for staff working with people with PMLD, and the impact of implementing the sessions on staff attitudes and approaches. Finally, the research provided an opportunity for the researcher to consider the ecological validity of the framework and the feasibility of implementing Musical Play sessions in two contrasting settings.

1.6 Structure of thesis

To answer the above research questions Chapter 2 and 3 examine the literature. First the literature surrounding play and playfulness is presented (Chapter 2), after this literature on music is considered (Chapter 3). Both literature review chapters follow the same format. Literature which is applicable to all persons (disabled and non-disabled populations) is presented first. After that, more specific literature focusing on the experiences of disabled people is considered. The chapters often intertwine literature related to non-disabled and disabled populations throughout. This is done intentionally, with the aim of reducing the 'othering' of people with disabilities. Finally, to develop knowledge and understanding, literature which includes people with PMLD is examined. Both chapters are of equal relevance to the study, and the order of presentation within the thesis should not suggest any hierarchy.

Chapter 4 presents the research design of the study. The chapter outlines the pragmatic approach adopted by the researcher in conducting real-world research. The two-phased study is outlined. The methodology, data collection methods, coding and analysis are presented. The Musical Play Framework is introduced. Ethical considerations of the research are discussed, and the limitations of the research design are highlighted.

Chapter 5 reports on the results for Phase 1 of the research, a participatory design with proxies, online exploratory listening experience. The impact of these results on Phase 2 of the research are also described. Chapter 6 presents the findings from Phase 2 of the research, answering the first and second research question, involving participants with PMLD. Chapter 7 reports the findings from staff participants, using qualitative data to answer the third research question. Each of the results chapters (5, 6 and 7) present the findings followed by the discussion.

Finally, Chapter 8 draws conclusions from across the findings. The contribution to research that this study makes is highlighted. Limitations of the study are examined. The implications of the findings for policy and practice are considered. Recommendations for future research are also discussed.

2. PLAY, A REVIEW OF THE LITERATURE

‘When people play, they realize themselves through activity in the world.’

(Henricks, 2014,203)

2.1 Introduction

‘Every child has the right to engage in play’ (United Nations Convention on the Right of the Child (UNCRC): Article 31, 1989). It is generally accepted, within most of the global north, that providing opportunities for children to play has both an intrinsic (for the sake of enjoyment), and instrumental (as a learning tool) value (Goodley and Runswick-Cole, 2010). Appropriate playful activities and opportunities are reported to support the developmental, personal, social and communication skills of children (Goldstein, 2012). Furthermore, play and playfulness is thought to be crucially important in the development of ‘*secure attachment*’ and ‘*self-esteem*’ (Youell, 2008, 126). Research has shown that meaningful play opportunities can support the confidence and wellbeing of those taking part (Almon, 2003). Many positive outcomes have been attributed to the play activity of children. However, most studies have focused on the outcomes of play, as a learning tool, rather than the intrinsic nature of playfulness itself.

This chapter presents popular theories and research studies surrounding play. It considers how these theories have influenced the perception of play, its value within society and in education, and the involvement of adults within play activity. Literature which considers the cognitive, social, and individual outcomes of play are then reviewed. The chapter often intertwines literature related to non-disabled and disabled populations, with an aim to reduce the ‘othering’ of people with PMLD and their experiences of play and playfulness. It attempts to draw attention to, and disperse, a hierarchy of value, based on normative, non-disabled, experiences (Garland-Thomson, 2005). The play experiences and opportunities of disabled children and young people, in particular children and young people with PMLD, are discussed exclusively in greater detail to develop knowledge and understanding.

Later in the chapter the concept of playfulness is introduced and explored. A definition of playfulness adopted within this study is presented. Finally, the role and attributes of adult-play

partners in facilitating and supporting play opportunities is considered. The first part of this chapter begins with the conceptualisation of play. After considering classic play theories it works towards providing a definition of play which is relevant for both disabled and non-disabled people of all ages.

2.2 Play

Play is a concept which is particularly difficult to operationalise (van Oers, 2013). Many theorists have attempted to conceptualise both play and playfulness (Pelligrini, 2009), in doing so trying to understand, justify and validate both the activity and the notion. The following section discusses theoretical concepts of play. The ideas of classic play theorists are briefly introduced. The limitations of these theories, in relation to children and young people with PMLD are then discussed. After these, contemporary concepts of play, defined by practitioner-researchers working in the field of PMLD are presented and evaluated. This section of the review builds on earlier theoretical perspectives and in conclusion attempts to provide a definition of play adopted within this study.

After considering theoretical perspectives of play, specifically in relation to people with PMLD, more general outcomes of play are presented. This is followed by a review of literature surrounding play and disability and more specifically, play for people with PMLD.

2.2.1 Classic play theories

There are numerous theories which aim to conceptualise and justify the purpose of play. Most of these associate play with the activity and pastime of children. Play is described as the 'highest' concern of the child (Froebel, 1896), taking place in imaginary self-created worlds (Freud, 1958), to gain control (Freud, 1965), or as a means to learn (Piaget, 1957). Play can also be seen as a time for exploration, and a safe space to develop social skills (Vygotsky, 1967). The following section expands on these prominent theories, before considering their relevance for people with PMLD.

Froebel (1896) placed play at the centre of childhood and children at the centre of play. Linking learning to first hand experiences, encountered through play, Froebelian theory places the 'whole child' at the centre of play activity (Hoskin and Smedley, 2019). Stemming from the interest of the child, rather than the agenda of the adult, play should 'begin where the learner is, not where the learner ought to be' (Froebel, 1896, cited in Bruce, 2012, 30). Alongside the promotion of spontaneity and creative freedom in play, Froebel also acknowledged the importance of freedom with the guidance of an adult. Froebel highlighted that if children were to be left entirely alone in play, they may not grasp or fully develop their potential to play, or the learning possibilities play offers (Werth, 2019). Furthermore, adults have the responsibility to offer play materials to extend and develop child's play (Tovey, 2016). Sensitive and child led Froebelian play facilitates and fosters relationships between children and adults (Tovey, 2016). Froebel's high regard for play frames play as a fully engaging activity, in which there is opportunity for exploration, experimentation and imaginative and creative development (Hargreaves, 2018).

Remarking on play as a more self-centred endeavour, Freud suggests that 'every child at play...creates a world of his [/her] own, or more truly [s/]he rearranges the things of his [/her] world and orders it in a new way that pleases him [/her] better' (Freud, 1958, 45). Although some of Freud's theories have been considerably challenged nowadays, his perspectives concerning play continue to be important within contemporary play studies (Henricks, 2018). Whilst Freud did not assign any one work to the study of play, he commented frequently on this topic. Play was presented as an activity which takes place in a self-created 'illusionary' world (Henricks, 2018). Developing and adjusting his thinking from this theory (1958), Freud later suggested that the pleasure and satisfaction found in play came from the child's ability to regulate, influence, and control all aspects of their play-world (Freud, 1965). Through this lens play is imagined as an activity of creation and control. In contrast to this Piaget (1957) conceptualised play as an activity of exploration.

Piaget (1957) theorised that play was a medium in which a child learnt to explore the world. Like Freud, some of his theories have been criticised, but his work on play is still prominent.

Piaget proposed play as the opportunity in which the biological and psychological state of the child encounters and interacts with their physical and social environment (Henricks, 2018). He believed that during play activity children consolidate their knowledge, experience and understanding through a process of *accommodation* and *assimilation* (Goodley and Cole, 2010). Piaget proposed that children have, and develop, through schemas, and as they grow older children adopt more complex schemas (Kibler, 2011). However, in developing schemas, a child may need to make personal *accommodation*, to meet the environment they encounter. Alternatively, the child may practise and implement learned techniques within a schema, which Piaget refers to as *assimilation* (Henricks, 2018). In essence, Piaget suggested that play leads to learning, and that this often occurs spontaneously, without the interference of adults (Piaget, 1957).

Incorporating concepts from both the theories of Freud and Piaget (Henricks, 2018) Vygotsky (1967) emphasised play as social communication, proposing play as a process of learning. Described as a dynamic and complex activity (Steiner et al., 2011), Vygotsky proposed play to be ‘...the leading source of development in preschool years’ (Vygotsky, 1976, 537). Although highlighting the cognitive benefits of play, Vygotskian theory is most concerned with the learning which happens through play, and the social interactions play facilitates (John-Steiner et al., 2010). Distinguishing play from other childhood activities, Vygotsky suggested that play involves the creation of imaginary situations and is rules-based (John-Steiner et al., 2010). Within these situations and rules the opportunity for those involved in the play activity to ‘co-operate or challenge one another’ arises (Henricks, 2014, 195). Thoughts, feelings, and actions combine during play, and those taking part improvise together, expressing new ideas and committing to new worlds (Henricks, 2014; 2018).

2.2.2 Play theories and PMLD

When considering the above theories in relation to the play of people with PMLD there are several compromises. Whilst the theories were not developed for or with children with disabilities, it is useful to consider the transferability of these theories as they are likely to influence the thinking, understanding and practices of the wider population. Considering

whether these theories are relevant may lead to a better conceptualisation of play for people with PMLD.

The fundamental motivation of satisfaction concerned with the individual, and their control of the environment, presented in Freudian play theory is dependent on the cognitive understanding of affect. Contingency awareness, one's ability to affect something else, is a concept that many people with PMLD may not have established (Hinchcliffe, 2022).

Additionally, the physical independence of a child to influence and regulate their environment may be compromised. Considering these factors there must be an alternative motivation for the play of people with PMLD.

Within Piaget's stages of cognitive development, it has been suggested that the sensorimotor stage encompasses the experiences of people with PMLD (Staves, 2019). Additionally, Imray and Orr (2015) argue the unlikelihood that people with PMLD can generalise schemas and form concepts. It may be useful to understand the subtleties of Piaget's sensorimotor stage of play development, to create suitable play opportunities for people with PMLD (Staves, 2019). Nevertheless, there is a distinct difference between the spontaneous explorative play of typically developing children, for whom Piaget's theory was developed, and the dependency of people with PMLD on adults to initiate and facilitate play experiences.

Froebel acknowledges the role of the adult to guide, support and provide materials which may extend play. This role is particularly relevant for people with PMLD who, due to their complex needs, are often dependent on those around them. Placing the child at the centre of the activity, and the understanding that play should 'begin where the learner is, not where the learner ought to be' (Froebel, 1896, cited in Bruce, 2012, 30), are also relevant theories when considering play for people with PMLD. Due to the heterogeneity of the population, play is likely to be more successful if it is appropriate for the person and facilitated with a focus on the capabilities of the individual.

There is a paucity of literature which considers the concept of play specifically for people with PMLD. Corke (2012) defines play for this population as the '*tangible, observable manifestation*' of playfulness. She describes play, as an action or behaviour. Discussing the play of children

with PMLD, Watson et al. (2018) describe play as the activity, in which an object or another person is 'played with'. The self-directed, spontaneous nature often attributed to play may need to be reconsidered when understanding play for children with PMLD (Smith, 2017), due to their reliance on adult prompting or initiation. Within this thesis, play is attributed to the activity or action taking place. Play is, a creative, in-the-moment activity, which happens with someone or something (Watson, 2014). Adopting Froebelian principles, play is concerned with the process not the outcome. With the child at the centre of play, play-partners may initiate, guide, or extend play. Play affords players, all those involved in play, the opportunity to create, imagine and explore their abilities and relationships in novel, light-hearted environments, and ways of being. The following section considers some of the outcomes of play.

2.3 Outcomes of play

A review of contemporary definitions of play (Masek and Stenros, 2021), reported that cross-discipline studies often conceptualised play based on expected or intended outcomes.

Numerous studies have focused on the additional outcomes of play, more than the act of play itself (Besio, 2017). Cognitive, social, and personal development have been attributed to play experiences and playful approaches (Wood, 2014) of all children. This section considers the cognitive and social outcomes of play, before exploring the concept of play as a process of self-realisation.

2.3.1 Play and cognition

Play is often operationalised as a tool for learning (Singer, 2013), and playful approaches can be adopted within education practice (Rice, 2009). However, educational approaches, and play theorists have frequently monopolised children's play, manipulating it to include elements which lead to measurable outcomes (Goodley and Cole, 2010). When play is facilitated in this way, the potential educational outcomes of play activity may out-shadow the intrinsic value of play itself. Critical of the 'functionalist approach of play' (Singer, 2013), play theorist Huizinga conceptualised play as a free and meaningful activity, which children engage in simply for the

sake of their subjective experience (Huizinga, 2004), without an intended outcome or alternative motive.

The intrinsic value of play may be further devalued, in favour of outcome driven play experiences, when involving children with disabilities (Goodley and Cole, 2010). Normative constructs of play have led to play activity for disabled children being dominated by assessment, interventions, therapy, and the ‘teaching’ of play skill (Goodley and Cole, 2010). This has resulted in outcome driven play, valued only as a medium in which skills can be taught and goals can be achieved.

2.3.2 Social skills

Evidence of play activity developing the social skills of children has been well documented (Coplan and Arbeau, 2009). Since play is central to the social interactions of young children, it provides the opportunity to acquire, practise and develop skills which lead to positive interactions (Coelho et al., 2017). Numerous ‘soft’ skills can be practised in a relatively safe environment during playful interactions (Laureta, 2019). Differences in co-operation, attention, and empathy (Mpella, 2019) as well as increased initiations, social interactions, and turn-taking (Harper et al., 2008), were all reported as positive social outcomes of play activity for children with autism. Access to structured playfulness sessions for young children supported the development of children’s problem solving and communication skills (Tersi and Matsouka, 2020), and their ability to cooperate, interact and share (Wood, 2014).

Parten (1932) developed a six-point scale of social participation within play to represent the increasingly socialised forms of play that children may develop and progress through. As children move through these stages, patterns of social play become increasingly complex. This requires the development, practice, and navigation of various social skills. The six stages of social play Parten (1932) describes are: 1. unoccupied play, 2. solitary play, 3. onlooker play, 4. parallel play, 5. associative play and 6. cooperative play (Coplan and Rubin, 2021). Although not originally designed to represent the social play of disabled children, White (2006) adopted Parten’s scale of participation in his development of the *Social Play Record Assessment*. The

Social Play Record Assessment (SPRA) (White, 2006), developed as a tool to assess and develop the social play of autistic children, considers the social play of a child across environments and social play-partners.

Much of the literature surrounding the development of social skills through play for children with disabilities focuses on children with autism (Gibson et al., 2021; O’Keeffe and McNally, 2023). A range of play-based interventions have been developed with the intention to improve the social skills of autistic children through play (Gibson et al., 2021). Play has been identified as a process to directly teach and model social skills, and as a medium through which these skills may be inadvertently practised, explored, and developed (Godin et al., 2017). This play is often facilitated or overseen by an adult (Besio et al., 2017; Crawford et al., 2014). In addition to play-based interventions which develop social skills, literature highlights interventions and practices which aim to develop the social play skills of people with disabilities (Hart Barnett, 2018; Stagnitti et al., 2012).

White’s *Social Play Record Assessment* (2006) is concerned with documenting the social aspects of play for disabled children. Play skills are categorised by response to, and interaction with, an adult play-partner, and these are documented using a 4-point Likert Scale. Early play skills are classified under ‘reactive’ and ‘reciprocal’ definitions. Peer-play skills are categorised using descriptors developed from Parten’s scale of social participation, Observer, Parallel and Associative (White, 2006, 35). Although the SPRA is developed specifically for use with children with disabilities, primarily autism, the descriptors provided do not successfully transfer to assess the social play skills of people with PMLD. Some adaptation of the descriptors would be necessary to make the assessment tool applicable and useful for this population. Further exploration of the social aspects of play, in particular peer-play for people with PMLD, are explored later within this chapter (see section 2.5.1).

The reviewed literature highlights the social outcomes of play for non-disabled and disabled children. These outcomes may be intentional, where the function of play activity is to teach or practise a social skill, or incidental, in which play offers possibilities for the development, practice and acquisition of social skills. As with the cognitive outcomes of play, there is a

concern that if play is over-influenced by an intended social outcome, then its intrinsic value, the playfulness of the play, may be lost (Allodi et al., 2019; Besio et al., 2017).

2.3.3 Play as self-realisation

Henricks (2014) proposes an alternative outcome of play; play as a process of self-realisation, suggesting that ‘when people play, they realize themselves through activity in the world’ (Henricks, 2014, 203). The process of play leads to a greater sense of self-hood and self-awareness. Hendrick conceptualises play not as a linear process of moving forwards, but instead proposes that play provides the opportunity to ‘move people in many directions’ (Henricks, 2014, 206). Play is described as an in-the-moment activity, and whilst games or play activities may be repeatable, no two play experiences are the same. Each experience however provides the opportunity for the development of meaning, as those involved in play ‘seek to acquaint themselves with the character of the world in which they operate’ (Henricks, 2014, 197). Within play, skills, experiences, and knowledge are generated, and individual capabilities are practised and refined. This theory of play as a process of self-realisation is fitting and relatable to people with PMLD. The process of self-realisation, through activity within the world, that Henricks (2014) describes as happening during play, embraces the sensory-based awareness of self and the environment that people with PMLD have (Grace, 2017). Considering the cognitive abilities, and spikey profiles (Butler, 2018) of people with PMLD, the non-linear process of play that Henricks describes is reflective of their pattern of learning and development. Further, Henricks’ description of in-the-moment activity resonates with the ‘being’ or presentness of people with PMLD (Goodwin, 2020).

The reviewed literature has evidenced various outcomes, across multiple disciplines, that play activity has facilitated. It has considered the balance between play, which is dominated by intended outcomes, and play which may lead to incidental outcomes. The following section considers play and disability in more detail.

2.4 Play and disability

There are numerous socio-economic and environmental factors which affect the play experiences of children and young people. These, combined with the emotional, physical, and intellectual development of children, all impact on opportunities and engagement with play (Childress, 2011; Elkind, 2007).

Studies on play and play interventions for people with learning disabilities revealed that the opportunities to play, and the characteristics of play were different for children and young people with learning disabilities compared to their non-disabled peers (Kosyvaki and Papoudi, 2016). Children with disabilities were less likely to initiate play interactions and responded differently to play experiences compared to typically developing children (Childress, 2011). In a comparison between disabled and non-disabled children, the variety of play activity children with disabilities displayed was less and the play behaviours they engaged in were fewer (Barton and Wolery, 2008). Childress (2011) proposed that the differences in playful behaviours and engagement in play was directly related to the child's disability. For example, children with physical disabilities were less likely to reach or move to retrieve a desired play object (Smidt and Cress, 2004), affecting their ability to actively engage in and pursue play experiences (Sonday and Gretschel, 2016). In contrast, a child with communication disabilities, such as autism, was less likely to initiate play, or recognise or respond to offers of play from others (Webb and Jones, 2009). Additionally, when engaging in free-play activities, in contrast to structured play interactions, children with learning disabilities were reported to engage less with others (Childress, 2011).

Literature including children with disabilities has focused on the use of play as a mediator for learning, for developing social interactions and as an intervention to teach play skill (Buchanan and Johnson, 2009; Kosyvaki and Papoudi, 2016). The use of play as therapy is also a feature of research discussing the play of children with disabilities (Astramovich et al., 2015; Mora et al., 2018; Porter et al., 2009). Play therapy uses the play, within a therapeutic relationship, to prevent, resolve or achieve emotional, behavioural, or developmental outcomes (Australasia Pacific Play Therapy Association, 2015). Therapeutic play has been used to support the

development of gross and motor skills, and the social and communication skills, of children with learning disabilities (Astramovich et al., 2015). In the UK play therapy can only be delivered by accredited play therapists, who have completed postgraduate study in this area (Play Therapy UK, n.d). The requirement of a specialist to deliver play therapy sessions is likely to impact the availability and access to this provision.

Alongside considering the impact of play on children with disabilities, research has sought to compare the effects of, and behaviours during, play between groups of typically developing children and those with disabilities (Brodin, 2007; Hamm, 2006). Whilst this type of research may be useful in highlighting the barriers to play, and differences in the play experiences that children with disabilities may encounter, it further perpetuates a deficit model of disability. If research only documents and validates typical presentations of play, it may unintentionally undermine or disregard the play experiences of disabled children. Theodorou and Nind (2010) challenge the ‘helpfulness’ of comparing the play experiences of autistic children with their non-disabled peers and aim to recognise and validate the differing types of play and play skills that children with autism may enjoy. The normative narrative of play, and the deficit model of disability, which frequently surrounds the play of disabled children, is likely to affect perceptions of, and engagement in, play, specifically for children with profound and multiple learning disabilities.

2.5 Play and PMLD

There are few empirical studies which consider play for people with PMLD. Although there may be some similarities in the play experiences of children with other learning and physical disabilities, and those with PMLD (Brigg et al., 2016); due to their profound intellectual disability, and additional sensory/physical disabilities, access, engagement, and responses to play activity is likely to differ (Brodin, 2007; Corke, 2012). Furthermore, the play development of, and process in which children with PMLD learn to play, is non-conventional (Imray and Orr, 2015) therefore play for, and with, children with PMLD will look different to typical children’s play (Brodin, 2007).

Brodin's (2007) study into the play experiences of 38 young people with PMLD, used proxy reporting with the aim to investigate how children with PMLD played, what materials they played with, and considered parental attitudes towards play. Minimal information is presented regarding the play characteristics of people with PMLD. Results discussed parental perspectives of play, highlighting the importance of play for children with PMLD, as well as outlining the difficulties in engaging and sustaining these children in play activity (Brodin, 2007).

McConkey (2006) highlights the humanising aspect of play in relation to people with PMLD. Defining play as a dynamic, creative, and feeling activity, McConkey (2006) suggests that children with PMLD should have daily opportunities to experience the dynamics of play. Although children with PMLD are often dependent on others to instigate the play, dynamic, patient, and observant adults should be able to join in with any playful responses, to encourage communication, co-operation, and creativity in people with PMLD. The activity and presentation of peer-play, in which two or more children play together, is also likely to differ for children with PMLD. Literature which considers the peer-play of people with PMLD is now considered.

2.5.1 Peer-play and PMLD

Social peer-play, is a dyadic, mutually rewarding activity in which two or more people take turns of exchange during play activity, throughout which the interaction partner is the focus (Beauchamp and Anderson, 2010). During peer-play children and young people interact with one another. Fundamentally, those taking part are aware of each other's presence. The ability to initiate, sustain or develop peer-play relies on the social competencies and skills of the children involved (Nijs and Maes, 2014). The awareness levels and communication skills of people with PMLD are likely to influence their experiences of peer-play (Ware, 2012).

Facilitating and encouraging playful peer exchanges between people with PMLD is likely to be challenging (Watson and Corke, 2015) as the social competences and skills of this population are often obscured (Nijs et al., 2016). Furthermore, the sensory impairments of people with PMLD are also likely to impact on their potential to initiate peer-play (Nijs et al., 2016). For

example, if a child cannot see or hear their peer, they may be unable to seek or gain their attention.

Most research considering the peer-play experience of people with PMLD has focused on the peer interactions of people with PMLD and their typically developing peers. In this dyad, the social competencies and skills of the typically developing child are more sophisticated than the child with PMLD, and the peer-play is more likely to take the form of playing 'with' rather than playing together (Nijs and Maes, 2014). Typically developing peers were able to initiate and develop interactions with their peers with PMLD, however the same was not true in reverse (Nijs and Maes, 2014). Literature which focused on the peer-to-peer exchanges of people with PMLD, although not necessarily during play activity, emphasised the limited social interactions demonstrated between people with PMLD (Nijs and Maes, 2014).

The characteristics and attributes of peer-play for people with PMLD are restricted by numerous physical, environmental, and cognitive factors (Nijs and Maes, 2014; Watson and Corke, 2015). However, peer interaction may allow opportunities for people with PMLD to lead interactions (Ware, 2012), communicating with their peers who may be encountering and accessing the world in similar ways. Supporting adults may be needed to facilitate peer-play opportunities for people with PMLD (Corke, 2012; Nijs et al., 2016; Rushton and Kossyvaki, 2020). Adults may use social scaffolding (Nijs et al., 2016; Williams et al., 2010), a process in which supporting adults use scaffolding strategies to guide young children during peer-to-peer social experiences, to draw attention to and share play objects between peers with PMLD. Social scaffolding may be through verbal or physical prompts (Nijs et al., 2016), but could also include shared play objects (Nugent, 2017). These supported social interactions, through scaffolded associative play (White, 2006), in which awareness and exchanges are facilitated through shared play materials, may be an appropriate way to encourage and support peer-play for people with PMLD.

Despite the difficulties people with PMLD have in accessing social play, Corke (2012) highlights the feelings of togetherness and unity that peer-play opportunities can present. Developing

strategies and understanding of how adults can best support and facilitate these unifying experiences is essential to fulfil a fundamental part of human life (Corke, 2012).

2.5.2 Potential barriers to play

There are numerous obstacles which may compromise the play experiences of people with PMLD. Assuming the biopsychosocial model of disability, adopted within this research, environmental and social factors combined with the physical, sensory, and cognitive disabilities of people with PMLD may affect opportunities for, and experiences of play.

McConkey (2006) cautions that play may be neglected for people with PMLD, deprioritised due to the care, therapies, and interventions they may require. The time pressures of facilitating these daily care routines, and the level of support required when assisting someone with PMLD, may also affect the opportunities supporting adults have to facilitate play (Brodin, 2007; Rushton and Kossyvaki, 2022). Imray and Orr (2015) suggest numerous barriers which may affect the play opportunities and experiences of people with PMLD. These include difficulties in communication, concentration, and cognition. Additionally, the ability to remember and recall previous play experiences may be compromised for people with PMLD (Imray and Orr, 2015), affecting their potential to build on, and develop play experiences. The physical and sensory disabilities of people with PMLD also affect the potential opportunities for initial exploration, sensory examination or manipulation of play toys or props (Staves, 2019). Furthermore, the unsuitable positioning of people with PMLD may affect their opportunity to initiate or engage in play experiences (Corke, 2012; Ware, 2012).

Watson (2014) found that poor attitudes and low expectations of supporting adults, was the main barrier to play for people with PMLD. Staff attitudes, alongside difficulties in communication from and with the child, led to an underestimation of the play potential of people with PMLD. Understanding of the value and relevance of play for people with PMLD is likely to diminish as children grow older, particularly in settings which adopt an age-appropriate approach (Forster, 2010).

Age-appropriateness is a concept which implies a responsibility for people to access activities and approaches in-line with their chronological age (Forster, 2010). Within disability and education studies in the global north, the contentious issues of age-appropriateness emerge as individuals reach the age of adolescence (Vehmas and Mietola, 2021). The concept of play and playfulness is strongly associated with childhood (Lester and Russell, 2010), and therefore a probable casualty of the age-appropriateness argument. However, since the interaction needs and understanding of a person with PMLD is distinctly different to their typically developing peers, playful approaches, and access to play, may be most effective in facilitating and encouraging interaction and development (Forster, 2010). Therefore, withholding these opportunities based on the normative construct of age appropriateness may be restrictive and harmful (Forster, 2010). Furthermore, there is a continual need for play in adulthood. The next section of this chapter discusses the concept of playfulness, in contrast to the activity of play.

2.6 Playfulness

The concept of playfulness was introduced by the work of Dewey (1933). Dewey highlighted the significance of playfulness over that of play, describing playfulness, as ‘an attitude of mind’, whereas play as ‘the outward manifestation of this attitude’ (Dewey, 1933, 210). It could be argued therefore that it is possible to be involved in a play activity and not experience feelings of playfulness and vice versa. Youell (2008), who defined playfulness as a state of mind, supports this line of reasoning, suggesting that many typical play activities children and young people take part in may not necessarily elicit feelings of playfulness. Therefore, it is necessary to differentiate between the activity of play and the feelings of playfulness. Previous research has often linked playfulness to play, which creates further ambiguity in defining these concepts (Corke, 2012). The following section explores the concept of playfulness further with specific relevance to people with PMLD.

Corke (2012) builds on Dewey’s (1933) descriptors of playfulness in relation to people with severe and profound intellectual disability. Corke (2012) describes playfulness as concerning *‘our internal world- thoughts, feelings and emotions arising as we investigate, explore and experiment with our physical, social and mental worlds’* (Corke, 2012, 11). Playfulness, Corke

(2012, 3) proposes, creates an opportunity for those involved to explore ‘emotional, cognitive, and social dimensions’. Watson (2015) offers another definition of playfulness for this population, describing playfulness as ‘*a lift in mood, physical signs (e.g., eyebrows go up), increased awareness, increased motivation, sense of fun, humour*’ (Watson, 2020, 86).

Watson’s description presents playfulness as a physical manifestation of the thoughts and emotions of an individual. It is not possible to know if someone is experiencing internal feelings of playfulness unless they share this externally. This may be through verbal expressions, body-language, facial expression, or vocalisations such as laughing. The transference of the internal feeling of playfulness to an external expression is particularly noteworthy when considering playfulness for people with PMLD, who often communicate in non-conventional, idiosyncratic ways (Doukas et al., 2017). Acknowledging differences in communication, and presentation of playfulness, may be a fundamental step in recognising this quality in people with PMLD.

Whilst the concept of playfulness remains ambiguous, it is important for both research and practice to attempt to adopt a clear definition (van Oers, 2013). For this research playfulness is defined as a subjective phenomenon. It is both an internal state, and an external expression, of feeling. Playfulness can be influenced by an individual’s current environmental factors and social availability, as well as their previous playful experiences. The biological and psychological state of an individual may also affect their experiences and potential for playfulness, for example, a person who is tired or in pain may be less likely to be playful (Smith, 2017). This definition combines Dewey’s (1933) theory of playfulness as ‘an attitude of mind’ with Watson’s (2015) external expressions of playfulness and the qualities of fun and humour. Describing these as *potential expressions of playfulness* for people with PMLD acknowledges the role of proxy interpretation that occurs during the communicative expressions of people with PMLD (Rushton et al., 2023b). The following section discusses whether it is possible to measure playfulness, and reviews tools that have been developed with this purpose. Consideration is then given to the validity and usefulness of these tools for people with PMLD.

2.6.1 Measuring playfulness

The circumstances, wellbeing, environmental factors, and disposition may all affect the playfulness of an individual. To better understand the effect of these factors on the opportunities for, and experiences of playfulness several tools have been developed. These tools rely on observations, after which the playful behaviours are measured and quantified. As with all observational tools, they rely on the outward expressions of the child, and the observation and interpretation skills of the adult. The Children's Playfulness Scale (Barnett, 1991) categorises playfulness into five dimensions influenced by the work of Lieberman (1966), and rates these using a five-point Likert Scale. The Test of Playfulness (ToP) (Skard and Bundy, 2008) evaluates the 'Extent', 'Intensity' and 'Skilfulness' of playful behaviours during a prescribed period of observation. The tools are now described in more detail, and their suitability for use with people with PMLD is considered.

The *Children's Playfulness Scale* (CPS) (Barnett, 1991) was built on Lieberman's understanding of playfulness. Lieberman proposed that playfulness was comprised of five elements: physical spontaneity, social spontaneity, cognitive spontaneity, manifest joy, and sense of humour (Lieberman, 1966, cited in Barnett, 1991). These five dimensions of playfulness form the categories of Barnett's playfulness scale. Each category is split into four or five descriptors, creating a total of 23 items. These items are rated using a five-point Likert Scale. The CPS is designed to be completed by an adult who knows the child well, or who has spent a minimum of 30 hours familiarising themselves with the playfulness of the child across a range of contexts. The scale was originally designed for use with typically developing children (Barnett, 1991). There have been mixed findings when the scale has been used with children with disabilities (Muys et al., 2006). The CPS is an ill-fit for use in assessing the playfulness of children with PMLD. This is primarily because people with PMLD are not likely to be spontaneous in play (Imray, 2017), and three of the CPS categories feature spontaneity. Furthermore, many of the *physical spontaneity*, *cognitive spontaneity* and *sense of humour* descriptors surpass the capabilities of people with PMLD.

The *Test of Playfulness* (Skard and Bundy, 2008) was designed to systematically evaluate the playfulness of children and young people aged 6 months-18 years, whose playfulness 'is a concern,' (Skard and Bundy, 2008). The concept of playfulness is the 'combined presence of intrinsic motivation, internal control, freedom to suspend reality, and framing' (Skard and Bundy, 2008, 71). The test contains 29 items which are scored using a 4-point Likert Scale, for each descriptor the 'Extent', 'Intensity' and 'Skilfulness' is rated. The test is conducted using video footage of a child's free-play activity, it is assumed to be most reliable when coding a 15-minute play session (Snow, 2013). The ToP was designed with a focus on evaluating and assessing the playfulness of children with physical disabilities but no known learning disabilities. Whilst most of the descriptors Bundy provides may be relevant to people with profound and multiple learning disabilities, other such as, 'enters a group already engaged in an activity' or 'pretends to be someone else' (Bundy, 2010, 9) are not.

The test and scales developed for typically developing children and those with disabilities (Barnett, 1991; Skard and Bundy, 2008) are useful in considering how playfulness may be presented, observed, and documented. However, elements of each of the considered tools are not relevant or appropriate for use with people with PMLD. Therefore, if attempts are to be made to measure, or reliably document playfulness in people with PMLD the reviewed tools would need to be altered. Alternatively, a specific tool, which considers and encompasses the communication methods of this population is needed. The following section considers the experience and expressions of playfulness of people with PMLD.

2.6.2 Playfulness and PMLD

Watson's (2020) *Passport to play* study observed the playfulness of five children described as having PMLD. The study, which generated data through direct observations, characterised playfulness for children with PMLD as: 'a lift in mood, physical signs (e.g., eyebrows go up), increased awareness, increased motivation, sense of fun, humour' (Watson, 2020, 86). These descriptions of playfulness relied on the observer's perception of the physical manifestation of an internal playful state. Extended periods of pre-data collection observation time, along with multiple proxy reports of how each child appeared to display feelings of playfulness, informed

Watson's perception. In the vignettes of the five participants (Watson, 2020) the children are described as becoming excited by slapstick humour, anticipation, and exciting sounds, and displaying playful attributes through 'succeeding', 'leading', and 'watching' playful activity.

Slapstick humour, alongside activities which build anticipation also revealed the playful nature of four children with PMLD in Brigg et al.'s (2016) study. The study assimilated playfulness with laughter, and participants with PMLD were documented to be 'laughing', 'smiling' and humorous (Brigg et al., 2016, 1184). The vignettes described the participants responding to and enjoying playful exchanges, through vocalisations, physical contact, gestures, and eye-contact. Brigg et al. (2016) highlighted the subtleties of the children's expressiveness, and noted the necessity to establish a responsive, patient, and safe social environment for these capabilities to be demonstrated. These playful exchanges and moments of shared laughter facilitated opportunities for 'relational commonality' between children with PMLD and their supporting adults. In moments of laughter and play, people with PMLD were not overlooked, or ignored, instead they were seen as 'fellow human beings' (Brigg et al., 2016, 1188).

It is evident from the literature reviewed in this section (Brigg et al., 2016; Brodin, 2007; Imray and Orr, 2015; McConkey, 2006; Watson, 2020) that people with PMLD can be playful. These playful behaviours are observable to supporting adults and researchers. Whilst people with PMLD may communicate their playfulness in non-conventional, subtle, and fleeting ways (Watson, 2020), acknowledging, engaging with, and supporting playfulness can reframe perceptions of people with PMLD. Individuals who may otherwise be overlooked, or considered passive, may demonstrate their abilities and personalities during playful activities. Joining people with PMLD in this activity may facilitate opportunities for mutual enjoyment and shared understanding of the world (Brigg et al., 2016). The significance and value of play in the lives of people with PMLD is of equal, if not greater importance, than that of other children (Imray and Hinchcliffe, 2013; Imray and Orr, 2015). Furthermore, as people with PMLD live their entire lives in the earlier stages of cognitive development, playful opportunities continue to be relevant, meaningful, and necessary in adulthood (Anderson, 2022; Brodin, 2007). Despite the potential of playfulness to act as a transformative tool in the lives of people with PMLD, there

are many barriers which effect playful opportunities within daily-life. The following section considers the significant role of adults in supporting play and playfulness for people with PMLD.

2.7 To play and be playful, the role of adults in play

Parents and caregivers are likely to be an infant's first play-partners (Imray and Orr, 2015). Most babies encounter incidental playful exchanges within their daily life (Parker-Rees and Leeson, 2014). Within these moments the rules, rituals and rhythms of play are established; playfulness precedes the addition of toys, or the acquisition of formal language (Singer, 2013; Youell, 2008). As babies develop independence, the role of the adult within play shifts and alters (Parker-Rees and Leeson, 2014). There are numerous guises the adult takes within play. As discussed earlier within this chapter adults may construct, manipulate, or direct play activity or play environments to facilitate a particular developmental outcome or learning process (Besio, 2017).

Joint play activity, when an adult joins a child in play, may help to overcome the power differences within the child-adult relationship (Singer, 2013). Adults who support, rather than direct play, or remain onlookers within the child-led play activity of typically developing children, gain insight into the world from a child's perspective (Ginsburg, 2007). Child-led, or adult supported play opportunities enhance the child-adult relationship and can lead to more effective communication between play-partners (Ginsburg, 2007). Supporting adults may develop a greater understanding of, and insight into, the personality of individuals with PMLD when they observe and join in with child-led play interest (Watson, 2020). Additionally, it may provide an opportunity to develop the communication of all involved (Smith, 2017).

2.7.1 Play-partners and PMLD

There are few studies which focus on the role of the adult in the play experiences of people with PMLD. However, the role of adults within play is likely to be significantly different when supporting people with PMLD (Brodin, 2007). Children and young people with PMLD continue

to be dependent on the support and guide of an adult to play (Anderson, 2022). Adults must be open and available to opportunities to support, respond to, and cultivate playfulness (Watson, 2020). Adult availability for, and responsiveness to, playful interactions is vital to recognise, validate, and build on, the fleeting invitations to play people with PMLD may offer (Watson and Corke, 2015). The role of the adult in supporting play for people with PMLD is fundamental to the play experiences of the child or young person (Anderson, 2022; Corke 2012).

2.7.2 Attributes and skills

Time, skills, and effort are needed for an adult to join in with play, and foster, facilitate, and reciprocate playful exchanges (Youell, 2008). Due to the idiosyncratic communication methods of people with PMLD (Doukas et al., 2017), the time and skills needed to foster and facilitate playful exchanges may be greater. In a study of the relationship, role, and attitude of playworkers supporting play opportunities for people with PMLD, Smith (2017) referred to the metacommunication between the play-partner and child which can support playful exchanges. Staff were reported to be alert, paying 'careful attention' (Smith, 2017), and responding intuitively, to the metacommunication of the children with PMLD. Playworkers reported the importance of the strong relationships, and deep knowledge of the children, they had developed over time, in supporting play opportunities for people with PMLD.

Watson (2014) and Corke (2012) also consider the skills and qualities that successful play-partners may possess. Watson (2014) implies that successful play-partners are innately playful and have the skills to tune in to the child. Whilst acknowledging that some adults are more pre-disposed to playfulness than others, Corke (2012) provides theoretical and practical guidance on the attributes and skills adults may require. Both Corke (2012) and Watson (2014) acknowledge that playfulness is a quality which varies between adults; suggesting that the play experiences of people with PMLD may be somewhat dependent on the playful nature of their supporting adult.

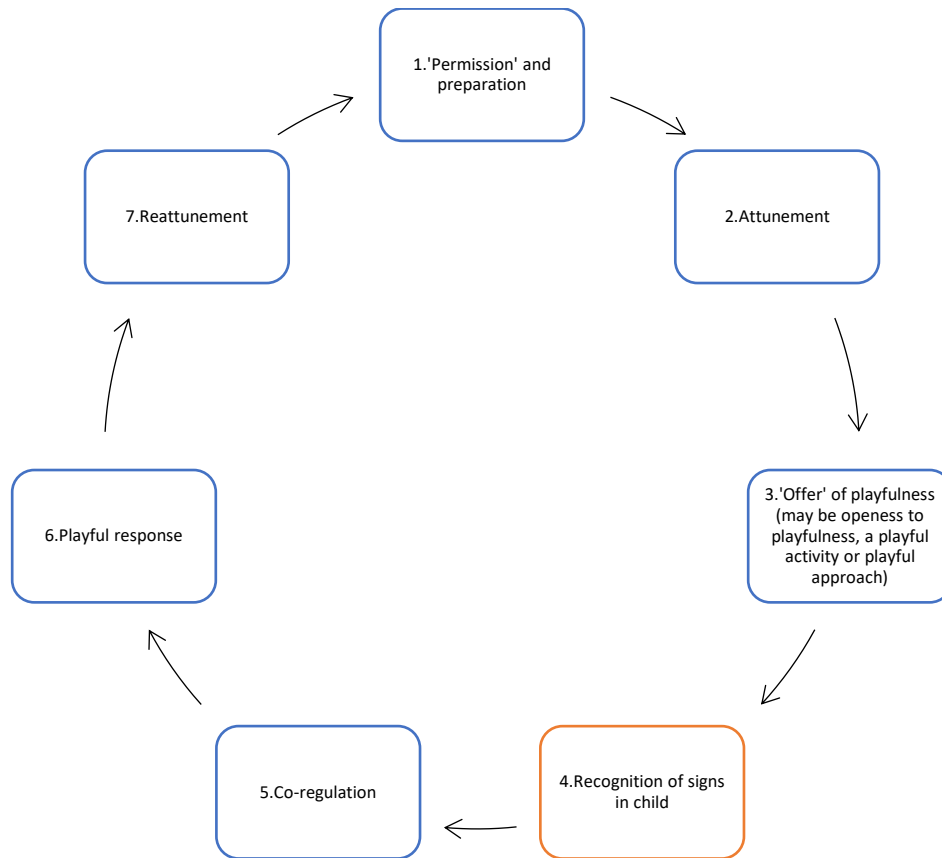
2.7.3 The 'offer'

Children with PMLD may not become spontaneously motivated to play (Imray, 2017). Therefore, the role of play-partners, usually a supporting adult, is particularly important in encouraging people with PMLD to be playful (Watson, 2014). This invitation, or 'offer' of playfulness is fundamentally influential on the play experiences of people with PMLD (Anderson, 2022; Corke, 2012; Imray and Hinchcliffe, 2013). Supporting adults have a responsibility to extend offers of playfulness to people with PMLD (Watson and Corke, 2015), who often rely on external stimuli or motivation to encourage feelings of playfulness (Imray and Orr, 2015).

Play-partners should initiate, join in, and guide playful experiences (Corke, 2012). They must navigate the fine balance between leaving enough flexibility for the child or young person's spontaneity, whilst also ensuring that the exchange does not feel too chaotic, forced, or free, so losing its playful focus. A non-threatening, playful availability, expressed through non-verbal communication, including 'tone of voice, warmth, sensitive touch, facial expression and movement' (Corke, 2012, 15) all contribute to the 'offer' of playfulness an adult may provide.

Principles of the *Playfulness Cycle* developed by Watson (see Figure 1) (2015) suggest that only after 'observation' and 'attunement' (tuning into the individual), should the supporting adult make an 'offer' of playfulness. Observation of an individual with PMLD is a necessary and important step in creating and recognising playfulness. As already highlighted a couple of times in this chapter, although some playful expressions of people with PMLD may be easily recognisable, others are likely to be individualised and idiosyncratic. Observation allows the adult play-partner the time to understand how an individual may be feeling, before presenting an offer to play, and potentially facilitating a playful exchange.

Figure 1: The Playfulness Cycle (Watson, 2015, 171)



2.7.4 Scaffolding play

Imray and Orr (2015) suggest that one role of the adult play-partner is to facilitate opportunities for people with PMLD to learn and develop play skills. Referring to Vygotsky's scaffolding theory, discussed earlier in this chapter, Imray and Orr (2015) propose that structured play opportunities may facilitate the possibility for people with PMLD to experience the basic elements of play. The typical route of learning play skills through free, non-directed play, is often inaccessible for people with PMLD due to the levels of communication and cognitive flexibility it requires (Imray and Orr, 2015). Instead, children with PMLD may need adult support to experience play activity and opportunities for playfulness in a more guided

way. Staves (2019) also emphasises the scaffolding approach, as a method to support children's play development, through a non-hierarchical play framework. The play development framework ranges from initial learning of the processes of play through to collaboratively exploring through social play (Staves, 2019). In presenting the framework, Staves (2019) highlights the importance of the adult to support, guide, and scaffold children's play development. This scaffolded approach to non-hierarchical play, supports the child to repeat and practise new skills, whilst also providing opportunity for the play-partner to focus on the playful qualities of the interaction (Ware, 2012). With adult support, people with PMLD may be able to develop play skills, enabling them to access and experience various types of play (Imray and Orr, 2015; Staves, 2019). The approach of the supporting adult is considered further in the following section.

2.7.5 Clowning

Previous studies have reported that slapstick humour, such as that used in clowning, has facilitated moments of playfulness with people with PMLD (Brigg et al., 2016; Watson, 2020). The principle aim of clowning, or clown therapy, is to create a non-hierarchical playful environment which is exclusive to the individual involved. Within this environment attention between the clown and the individual involved is undivided, and co-created meaningful play is nurtured (Clark, 2013). The interaction of the clown facilitates opportunities for both verbal and non-verbal communication (Meiri et al., 2016) which makes it an accessible approach for people with PMLD who have minimal understanding of formalised language. There has been little research into the effects of clowning on the play experiences of people with intellectual disabilities (Feniger-Schaal et al., 2023). However, Feniger-Schaal et al. (2023), in a study involving 52 children aged 3–7 years with intellectual disabilities, found that children's playfulness increased significantly at the end of six-months, of weekly 30-minute, clowning sessions.

The concept of clowning has been included within this review as the attributes of the clown may be similar to those of a successful play-partner for people with PMLD. Clowns create a safe environment, which provides space and permission to be playful (Raviv, 2018). The clown is the

‘offer’ of playfulness, after which the clown must immerse themselves in the child’s world, whilst remaining receptive to the responses and emotional state of the individual (Anes and Obi, 2014). Clowns often use exaggerated expressions, slap-stick humour, and anticipation to facilitate moments of playfulness, all of which have been reported to support and facilitate expressions of playfulness for people with PMLD. Foremost, the aim of a clown is to enable the other person to join a playful encounter (Feniger-Schaal et al., 2023). This ‘sense of fun’, ‘willingness to go with the learner’ and levels of ‘theatrical energy’ have been acknowledged as ways to playfully engage and support the play needs of people with PMLD (Watson and Corke, 2015, 371). Whilst supporting adults may feel more inhibited than clowns when supporting play, a basic understanding of how and why these approaches are successful may enhance the playful responses of adults, and the play experiences of people with PMLD.

2.8 Summary

This chapter considered the concept of play and playfulness. It reviewed classic play theories and applied these, specifically in relation to people with PMLD. The potential outcomes of play activity were discussed, during which the devaluing of intrinsic play opportunities, in favour of instrumental ones was highlighted. Henricks’ (2014) non-linear theory of play, as a process of self-realisation through activity in the world, provided a conceptual understanding of play which encompassed the abilities and play experiences of people with PMLD.

A review of previous play studies involving children with disabilities highlighted the differences and disparity of play behaviours, engagement, and experiences. Some studies directly attributed these differences to the specific disability of the child (Childress, 2011). However, the attitudinal and social barriers to play should also be considered. Play has often been used in deficit models of disability to identify, adjust, or teach typical play behaviours. This review highlighted the limitations of studies which considered play behaviours and playfulness from a normative narrative, and suggested that, in conducive and supportive social environments, children with disabilities have the potential to be just as playful as their non-disabled peers. However, whilst the manifestation of this playfulness may appear different than that of

typically developing children, the presentation of play and feelings of playfulness are equally valid.

Through the biopsychosocial model of disability, adopted within this research, the chapter then considered the playfulness of people with PMLD. Most of the reviewed literature (Brigg et al., 2016; Corke, 2012; Watson, 2020) presented the playful capabilities of people with PMLD. The differences in prerequisites to, and presentations of, play were highlighted. The personal, physical, and attitudinal barriers that may affect the play experiences were discussed, and the detrimental impact of the construct of age-appropriateness, in relation to the play opportunities of older people with PMLD, was addressed. Evidence of the playful abilities of people with PMLD during peer-play and social interaction within the reviewed literature was limited. However, suggestions of social scaffolding and associative play to support opportunities for peer-play were explored.

The role of adults as play-partners was then discussed and the importance of this role, in relation to the play experiences of people with PMLD, was highlighted. The skills and attributes of play-partners, as well as their relationship with the individual with PMLD, were presented as fundamental to the play experiences of people with PMLD. People with PMLD may not play spontaneously, therefore it is the responsibility of play-partners to offer playful invitations to initiate or facilitate play opportunities. Literature suggested that this offer should come after a process of 'observation' and 'attunement' with the child (Watson, 2020), after which an adult may present their playful availability through non-linguistic communication.

The Vygotskian concept of scaffolding was considered. A scaffolding approach to play supported the child to repeat and practise new skills and engage with novel play activity. This scaffolding approach may provide the opportunity for the play-partner to focus on the child-adult interaction with play becoming a co-constructed social activity. Finally, within this chapter, literature concerning the concept of Clowning was presented. Approaches of the clown were considered. The exaggerated, improvisatory nature of the clown, whose primary aim is to enable the other person to join a playful encounter, were highlighted as methods for play-partners to employ when facilitating playful exchanges with people with PMLD.

Few studies have been conducted on the play and playfulness of children and young people with PMLD. This paucity of research, lack of relevant theories and understanding of play for people with PMLD may compromise its role, value, and place within their lives. There is a need for further research into effective approaches to play for people with PMLD, and evidence is required to support and acknowledge the playfulness of this population. Additionally, further research into approaches which may support opportunities for playfulness with, and by, people with PMLD is also necessary. This research may provide practical methods for supporting adults, play-partners, to employ when facilitating play activity and playful experiences. Highlighting the significance of the role of the adult in devising and facilitating effective play opportunities may also receive greater recognition through increased research and understanding. The following chapter considers the role of music in daily life. It considers how music and musical exchanges are often improvisatory and playful in nature and can affect our emotions, mood, and wellbeing. The creative, spontaneous, and responsive possibilities within play may also be reflected when we 'play' music together.

3. MUSIC, A REVIEW OF THE LITERATURE

3.1 Introduction

This chapter presents a review of the literature concerning the presence and use of music within daily life. The first section of the chapter, music in everyday life, discusses music as a tool to enhance wellbeing, its effects on emotion, and the role of music within social interactions and relationships. Initially this section aims to conceptualise music as presented within this thesis, drawing from, and building on previous theoretical descriptors. After this, the concepts of *being*, *feeling*, and *building*, through music, are reviewed in relation to three populations. Firstly, these concepts are considered in relation to all people, people with and without intellectual or profound intellectual disability. Next, they are considered particularly in the context of people with intellectual disabilities, and finally, specifically for people with PMLD. As with the previous chapter, this section of the literature review purposely presents literature involving disabled and non-disabled populations alongside each other to challenge the hierarchy of value based on normative experiences, to reduce the ‘othering’ of people with PMLD.

Following this, literature exploring musical experiences for people with intellectual disabilities is reviewed. Literature is considered within three categories: music therapy, social or community music-making, and music education. Each of these musical contexts is discussed for people with intellectual disabilities, particularly people with PMLD. The findings of a systematic literature review of musical interventions with people with PMLD, conducted by the researcher and the PhD supervisors (Rushton et al., 2023a), are then presented and discussed. After focusing on music and people with intellectual disabilities the chapter considers the role of music in play and supporting playfulness. Literature which surrounds musical play is primarily found within an Early Years context, for children under five years of age, and the chapter considers the transferability of these findings for people with PMLD. It also explores literature which encompasses music as a medium for playful exchanges across all ages, and music and play for, and with, people with intellectual disabilities, including those with PMLD.

3.2 Music in everyday life

This section considers musical encounters within daily life. It highlights how music may be created, experienced, and conceptualised. After introducing and evaluating previous musical theories, and the concept of ‘musicking’ (Small, 1998) specifically in relation to people with PMLD, a new conceptualisation of music, developed by the researcher, is presented. This definition is adopted within the thesis.

Literature on music as a medium for being and supporting individual well-being is then discussed. The evidence of the effect that listening to, and making music, has on well-being is highlighted. Emotive responses to music are then considered, including both cognitive, and affective emotional response. The implications of previous research findings are examined in relation to compositional elements within music, musical experiences, and people with PMLD. Finally, within this section, both well-being and emotional effect are considered within shared musical experiences, and the use of music to build and facilitate reciprocal relationships within literature is introduced.

3.2.1 Music and musicking

Music is an ambiguous and debated concept (Juslin and Sloboda, 2010). The conflict between music and sound production, intent versus outcome, and the perspective of the listener in contrast to that of the creator, are just a few of the perpetual discussions surrounding this topic. These factors place music as a relational concept, determined by individual perceptions, intentions, and environmental constructs. The debates surrounding music as a concept and construct may be further expanded when considering the perception, intention, and capabilities of people with PMLD. A contribution, such as a vocalisation by a person with PMLD, may be regarded as music if created during a music session, or in response to an external musical stimulus. However, the same vocalisation, expressed by the same individual, during a medical procedure may not be perceived as music. The intent of the individual with PMLD remains ambiguous, on both occasions a ‘speech act’ or a ‘musical act’ (Small, 1999, 20) may have been voiced. In this instance, both the environment and the one listening to the

vocalisation influence the context attributed to the communication. Whilst this is not limited to individuals with PMLD, it is further exacerbated when involving individuals who do not have formalised methods of communication to express their intent (Gluschankof, 2008).

In his seminal work, *Musicking: The Meanings of Performing and Listening*, musician and educator, Small (1998) introduces the term 'musicking', which he uses to encompass the act of doing music or making music, as a verb. This act of musicking, or 'to music' is described as:

'To music is to take part, in any capacity, in a musical performance...or to take part in any activity that can affect the nature of that style of human encounter which is musical performance.' (Small, 1999, 12)

Small suggests that the meaning of musicking is located within the relationships of those involved in the musical performance, regardless of whether their participation is an active or a passive one (Small, 1999, 12). This is notable when considering the term in relation to people with PMLD, who may often appear passive within exchanges (Ware, 2012). Focusing on the function of music within human life, Small asserts that musicking captures and involves all those who are present within a given performance, and all those connected through the relationships that the act of musicking generates. His descriptive, rather than prescriptive theory, does not seek to categorise or formalise elements necessary to define music, but instead focuses on the encounter between humans (Small, 1999, 13). The personal and musical relationships are intertwined within the act of musicking, and the environment where the musicking takes place.

Small's definition of a musical performance includes performing, listening, rehearsing, and practising, as well as composing and dancing (Small, 1998). When considering musicking in relation to people with PMLD there are some limitations to Small's theory, notably that it is developed within the context of the 'normally endowed' human being (Small, 1999, 20). It is unclear what Small means by this term, but he links this term to those born with 'the gift of music' and the 'gift of speech'. The latter of these two 'gifts' is not likely to be true for

individuals with PMLD, who often use non-formalised, idiosyncratic means of communication (Doukas et al., 2017), however does this necessarily nullify the former?

Much of Small's theory of passive and active contributors, environmental factors, and the shared responsibility, within the relationships generated between both humans and sound, in the act of musicking, is applicable to this research and people with PMLD. However, Small's use of the terms 'normally endowed' and his assumption of the 'gift of speech', suggests the term excludes people who have physical or intellectual disabilities, and those who cannot, or do not use speech. Within this thesis Small's definition of music, as a verb, is adopted cautiously with the intent to challenge the normative narrative which subtly permeates his description of 'to music'. The effects of music, as defined above, on individual well-being are now considered.

3.2.2 Being: Music and well-being

Well-being, a contributing factor to individual health (World Health Organisation, 1948) includes the physical, psychological, and emotional wellness of an individual (Dodge et al., 2012). It is widely reported that music has a positive effect on the individual and social well-being of people of different ages, circumstances (MacDonald et al., 2017), and/or cultures (Mehr et al., 2019; Morinville et al., 2013). However, the purpose and significance of music, as a contributing factor to well-being within daily life, varies depending on the context, engagement, and experiences of individuals. Although it is frequently claimed that music has a transformative power (Carlson, 2013) understanding how or why this phenomenon occurs is not easy, and in some instances this bold claim is neither useful nor true. Whilst music can be used to establish and enhance environments (DeNora, 2000), provide ambience or influence emotion and mood (MacDonald et al., 2017), it too can be a distraction or cause distress (Hynes and Manson, 2016), a barrier to engagement or a hindrance to communication (Miranda and Gaudreau, 2011). A greater and more conscious awareness of how music may affect an individual's environment and their well-being requires acknowledgement. The difference between the effects of self-selected listening experiences, versus subjected ones, on well-being should be included in the narrative surrounding music and well-being for people with intellectual disabilities (Kittay, 2009).

The benefits of listening to music on an individual's well-being have been well documented (MacDonald et al., 2017). Listening to music is reported to reduce stress, and positively influence emotions (Vastfjall et al., 2012). These findings are often dependent on the participants self-selecting their own listening experiences (Greasley and Lamont, 2011). When participants are able to select the music they are listening to, the listening experience is self-reported to have a positive impact on individual well-being. This is particularly notable for people with PMLD, who typically do not have the opportunity to self-select their listening experiences, but instead are often subject to the musical content of their environment, or choices of those around them (Hooper et al., 2010; Kittay, 2008).

The effects of active music-making, in contrast to passive musical experiences, are reported to provide additional benefits to individual and social well-being. Active musical experiences can improve an individual's emotional regulation and increase opportunities for moments of happiness and relaxation (van Goethem and Sloboda, 2011). Furthermore, collaborative music-making may provide opportunities for social interaction and enhanced self-esteem (Waddington-Jones et al., 2019). These additional benefits may be due to the higher levels of participation, autonomy and creativity required and afforded by music-making activities, resulting in a sense of personal achievement and validation. Croom (2015) evidences the opportunities music-making affords for deep engagement, purposefulness, developing connections with others, and feelings of personal achievement. All these outcomes have been reported as positive contributing factors to wellbeing (Croom, 2015), and show how music-making may function to facilitate this.

There is overwhelming support for the benefits of listening to and making music on individual and social well-being. However, most studies which have explored the relationship between music listening and well-being have been short-term laboratory-based trials (Vastfjall et al., 2012) and included self-selected music and/or self-reported methods. Although there is a growing body of real-world studies into the role of music-making and well-being (Ellis, 2018; Hallam and Creech, 2016; McFerran et al., 2019; Waddington-Jones et al., 2019), there is a need for research which investigates this with more populations, especially those with

intellectual disabilities and people with PMLD. Emotional responses to music contribute to the effect of music on individual well-being. The following sub-section considers in more detail how music elicits these emotional responses, and how they may be experienced by the listener. It also suggests ways in which specific musical elements may be used within musical composition to evoke particular emotions.

3.2.3 Feeling: Emotional responses to music

Emotions, an affective phenomenon, are ‘brief responses to potentially important events or changes in an external or internal environment’ (Juslin, 2009, 131). Emotional responses to music are highly individual and context specific. Listening to, and making-music, may elicit affective and/or cognitive reactions (Carlson, 2015; Hynes and Manson, 2016; Solms, 2021) in the listener or creator. Music may affect the emotion, behaviour and, in some instances, mood of the listener. Understanding of how, and why, music effects the emotions of listeners continues to present some ambiguity.

Juslin and Västfjäll (2008) theorise that the emotional responses to music are a result of six mechanisms. Each mechanism requires different levels of cognitive processing, understanding and memory. The mechanisms are 1. ‘brain stem reflexes’, 2. ‘evaluative conditioning’, 3. ‘emotional contagion’, 4. ‘visual imagery’, 5. ‘episodic memory’ and 6. ‘musical expectancy’. Although the theory is not directly applied to people with intellectual disabilities, some of the discussed mechanisms may be transferable to people with PMLD. Of these, affective responses in brain stem reflexes, emotional contagion, where the listener perceives the emotion contained within the compositional elements of the music, and evaluative conditioning, in which, through repeated pairing, music becomes associated with positive or negative stimuli, are particularly notable when considering this population. Juslin and Västfjäll (2008, 564) consider how the response of the brain stem, when listening to music can ‘induce pleasantness and unpleasantness’. However, the above authors are unable to justify how these responses elicit emotive reactions. Solms (2021) presents some further insight into the emotional responses and experiences of people with PMLD. Evidence of emotions, evoked through

brainstem reflexes to music, are presented in studies with children who live without a cerebral cortex.

Positive emotional states, such as 'joy' and 'calm' as a result of listening to music, are found in self-reported studies undertaken with non-disabled populations (Lamont and Webb, 2010; Vastfjall et al., 2012). When considering the effects of listening to music on the arousal states of people with a mild intellectual disability, and those without an intellectual disability, Hooper et al. (2010) found that both populations reported similar responses to the stimuli. This finding may suggest that musical characteristics such as tempo, volume, melody, and harmony, could generate similar affective emotional responses in disabled and non-disabled populations (Hooper et al., 2010). However, as the study relied on self-reporting data collection methods it did not include participants with severe and profound intellectual disabilities.

It is evident that there are numerous reasons and ways music can affect the emotions of all listeners, regardless of their age, background, or cognitive ability (MacDonald et al., 2017; Trevarthen, 2002). However, after accounting for the external and internal factors such as memory, association, and familiarity, it is also possible that specific elements within music, such as tempo, volume and modality can be used within the composition of music to evoke emotional responses.

Composing emotion

It has been suggested that certain characteristics of music, such as tempo, volume and tonal centre can encompass emotion (Lundqvist et al., 2009). These emotions may be affective or cognitive emotions. In the former the listener feels a genuine emotional response, in the latter the listener cognitively perceives the emotions intended to be expressed by the music. It is worth distinguishing these different emotional responses, as due to the intellectual disability of people with PMLD they are less likely to cognitively perceive the intended emotion contained within music, and more likely to experience affective emotional responses (Solms, 2021).

Affective emotions such as happy or sad can be exaggerated and simplified into their musical elements (Allen and Heaton, 2010). For example, within Western society, positive, playful music often features a 'fast tempo, high sound level and is composed in a major mode' (Lundqvist et al., 2009, 65). This contrasts with sad music, which is slower in tempo, quieter and in a minor key (Juslin and Laukka, 2004). Lundqvist et al. (2009) used a range of self-reporting, behavioural and autonomic responses to investigate listeners' experiences to happy and sad music. Although the results were mixed, the study found that there was congruence between the intended emotion of the music and the effect on the listener. Ockelford's (2008) reasoning, specifically for children with PMLD also supports this understanding. Ockelford suggests that the emotional responses of people with PMLD are often reactions to the basic elements of music such as pitch, volume, and tempo.

Although it may seem reductionist to simplify emotion and music into binary concepts, the effect of musical elements on the affective emotional responses of the listener is particularly important when considering the experiences of people with PMLD. Acknowledging the effect musical elements can have on affective emotions, involving minimal cognitive processing, is an important step toward developing a better understanding of how these musical elements work. Developing understanding into their effect on affective emotions may provide resources to better support the emotional state of people with PMLD, enhancing their personal and social well-being. The role of music on social well-being and as a medium for building, sustaining, and sharing relationships will now be discussed.

3.2.4 Building: Relationships through music

The innate musicality, such as that seen between a mother and baby, fused with the human desire for companionship, creates shared experiences, feelings and meaning on which relationships, communities and cultures can be created (Malloch and Trevarthen, 2009). Shared listening experiences have the potential to form connections between listeners, through common musical preference and the associated collective identity (Boer and Abubakar, 2014). These experiences can contribute to the formation of friendships (Selfhout, 2009), family cohesion (Boer and Abubakar, 2014) and the building and maintenance of social relationships.

Shared listening experiences, in either private or performance settings, such as a family home or the concert hall, support feelings of connectedness for all those involved (Small, 1998; Rushton and Kossyvaki, 2021) building and consolidating relationships.

'It is our common musicality that makes it possible for us to share time meaningfully together, in its emotional richness and its structural holding, and for us to participate with anticipation and recollection of pleasure...'

(Malloch and Trevarthen, 2009, 5)

The concept of 'Communicative Musicality', coined by Malloch and Trevarthen (2009), contributes to the understanding that humans are innately musical, suggesting that music can be used as a medium for forming, building, and sustaining relationships. Music-making, in which the active creation of music takes place through human voices, bodies, formal or found instruments, is too a collaborative act which facilitates opportunities for social interaction. These social relationships can be initiated, explored, and developed through shared musical activities (Lamont, 2012; Murphy and McFerran, 2017). Shared music-making experiences, at the earliest stages of development, between parent and baby, are adopted as bonding opportunities for families globally (DeNora, 2014; Young, 2018; Zeedyk, 2008). Communicative musical exchanges, emotions and environments are interchanged, collectively built, shared, and celebrated often without the need for discussion (Higgins, 2012).

Group music-making opportunities for disabled adolescents provide occasions to develop meaningful relationships, shared identity and to express feelings (Rickson, 2019). Notably, Rickson's study includes participant voice. Participants, who were teenagers in a special school, reported that 'the music group was mostly a fun and happy place' and that they 'learnt to notice what other people were doing...to accept...play together and take turns' (Rickson, 2019, 144). The study highlighted the potential music had to provide participants the means to interact, connect and develop relationships with their disabled and non-disabled peers.

Building and consolidating relationships through music may be of particular importance for people with PMLD, who typically do not use conventional means of communication to create,

maintain and develop relationships (Colley et al., 2021). Shared musical experiences may provide the opportunity to bypass some of the obstacles to interaction and communication between people with intellectual disabilities and those without (Kittay, 2008; Rushton and Kosyvaki, 2021), providing a medium to facilitate and support human relationships (Stige et al., 2017). The ethical significance that shared musical experiences have in facilitating opportunities to create and shape relationships have been highlighted in the literature (Carlson, 2015). Arguing that many approaches to researching music and intellectual disability further perpetuate the normative and 'abnormative' narratives surrounding disability, Carlson considers how music may positively contribute to the lives of people with intellectual disabilities and their relationships with others. When describing her own encounters of sharing musical experiences with people with intellectual disabilities, Carlson discusses the synchrony and connectedness that can be achieved through music. The re-identification of those taking part in musical experiences, regardless of intellectual ability, as 'creative and expressive beings' (Carlson, 2015, 44) has the potential to reframe people with PMLD as active contributors within reciprocal relationships.

Shared musical time may provide opportunities for people with PMLD to positively contribute to their musical environments, their relationships and those they share their lives with (Carlson, 2015; Kittay 2008; 2009; Rushton and Kosyvaki, 2021). Whilst the empirical research in this area is limited, anecdotal evidence strongly suggests that sharing music with people with PMLD positively affects the relationships of all involved. Kittay (2008) describes the musical experiences of his daughter, Sesha who has 'several disabilities, including profound retardation and cerebral palsy' (Kittay, 2008, 42). Sesha is represented as a more active member of her social group during musical activity, not only sharing in these occasions but also positively contributing to them through the joy she expresses and shares with those around her. Shared musical experiences allowed Sesha to be both the receiver and giver of pleasure from and to her family.

This section presented literature which considered music within everyday life. The role of music in relation to wellbeing, emotion and relationships was examined in literature which discussed

and included disabled and non-disabled populations. The following section looks at the musical encounters and experiences of people with intellectual disabilities. Current practitioner approaches to music-making, for people with intellectual disabilities, and people with PMLD, found within the literature are also examined.

3.3 Music and intellectual disability

When considering the literature exploring music, specifically in relation to people with intellectual disabilities, this section of the review broadly divides musical activity into three categories. These categories, although not exclusive, are music-therapy (Adler and Samsonova-Jellison, 2017; De Vries et al., 2015; James et al., 2015; Mayer-Benarous, 2021), social and community music (Brown and Jellison, 2012; Hooper et al., 2008; Rolka and Silverman, 2015) and music education (Corke, 2012; Ockelford, 2008). The cross-over of practices delivered within each of these distinct groups may appear similar in delivery (Ockelford, 2008), but the motivation, purpose and intended outcomes of each differ.

Music education is concerned with the development of musical skill, in contrast to music therapy in which the development of musical skill is secondary to the therapeutic, physiological, or psychological change of participants (Salvador and Pasiali, 2017). For individuals with intellectual disabilities music therapy may be employed with intended social, physical, or psychological outcomes (Thompson and Skewes McFerran, 2015). Social and community music making may also have therapeutic outcomes, however these are not the purpose, or intention of the session or facilitator (MacGlone et al., 2020). Instead, social and community music making, often delivered in groups, is concerned with the fulfilment of a positive, enjoyable, and social experience for all involved (MacDonald, 2013). The following sections will consider each of the three categories, music therapy, social and community music, and music education for people with intellectual disabilities, in more detail.

3.3.1 Music therapy

Music therapy contributes significantly to the literature on music and intellectual disability, (Murphy and McFerran, 2017). Music therapy is defined as:

‘an established psychological clinical intervention, delivered by Health and Care Professional registered music therapists to help people whose lives have been affected by injury, illness or disability’

(British Association for Music Therapy (BAMT), n.d.)

The positive impact of music therapy on the individual and social well-being of people with intellectual disabilities is well documented (Nicholson et al., 2008; Swaney, 2020; Williams et al., 2012). However, most of this literature involves children with autism or moderate intellectual disabilities (Kim et al., 2009; LaGasse, 2014) and few studies involve people with PMLD.

Thompson and Skewes McFerran’s study (2015) suggests that the targeted outcomes for individuals with profound disabilities are often physical or communication goals, in contrast to the social and behavioural goals typically attributed to music-therapy. Their study, involving four children with PMLD, contrasts the communicative attempts of the participants during toy play and music therapy sessions. The authors consider the purpose of music therapy for individuals with PMLD. Whilst the study is not conclusive in determining music therapy sessions superior to toy play, Thompson and Skewes McFerran (2015, 9) suggest that ‘music therapy creates engaging conditions that motivate interactive communication with an attentive other’. The authors challenge therapists to consider opportunities for the knowledge acquired during music therapy sessions to be shared with others, at home and in school, in order that opportunities for interaction using the approaches employed in music therapy are not limited to the weekly therapy sessions.

Swaney (2020) presents the Good-Life-Orientated Process as an approach to music therapy for people with severe and profound intellectual disabilities. This relational focused approach

addresses the 'why' of the sessions, rather than the 'what' of the content, and is based on four principals, relational experiences: 'the curiosity of another, the invitation of another, the celebration of another and the recognition of another' (Swaney, 2020, 72). The model focuses on the relationships between therapist and participant and highlights the need to consider that these are formed through 'unconditional positive regard, genuineness and empathy' (Swaney, 2020, 77). Swaney also suggests that the principles of these approaches should be expanded beyond the space of the music therapy sessions and the skills of the music therapist, and instead could be employed by support-workers and family members.

In contrast to the process focused approach described by Swaney (2020), Adler and Samsonova-Jellison (2017) present the 'MuSense', their multi-sensory approach to music therapy for children and adults with severe to profound intellectual disabilities. The approach focuses on developing the sensory and body awareness of participants. Whilst providing some insight into the perceived benefits of music therapy, the manual focuses strongly on the 'what' of the delivery. Their approach, which, from the language used, seems anchored in the medical model of disability, is content heavy. The focus is on the activity that should be included within a session, rather than the approach of the therapist. Adler and Samsonova-Jellison (2017) also draw attention to the age-appropriateness of the content used within the session, which has been discussed in the previous chapter. In practice, the application of the normative construct of age-appropriateness would suggest that the musical content used within MuSense music therapy sessions should reflect the chronological age of the participant, regardless of individual preferences.

Whilst the literature surrounding music therapy is beneficial in supporting and documenting the use of music with people with intellectual disabilities, including those with PMLD, the evidence of outcomes and the impact of music therapy on individuals with PMLD within research remains ambiguous (Stegemann et al., 2019; Thompson and Skewes-McFerran, 2015). Additionally, some music therapy practice remains rooted in the deficit-based model of disability (Gross, 2018; Murphy and McFerran, 2017; Pickard, 2020). Although it should be acknowledged that literature may not always reflect the practice/attitudes of those delivering

the sessions in person (Metell, 2014), the deficit-model, represented in the literature reviewed (Adler and Samsonova-Jellison, 2017; Kim et al., 2009; LaGasse, 2014) suggests that music therapists/therapy, remains a 'treatment' for the illnesses and/or disabilities of participants. Whilst there is some evidence of the awareness and narrative around music therapy moving away from the medical model of disability (Metell, 2014; Pickard, 2020), there continues to be resistance to the positionality of music therapy/therapists from individuals within the disability community (Pickard, 2020; Watts and Ridley, 2007; 2012). This literature highlights the risk of music therapy dominating the narrative of music and disability, further limiting the access to, and prospects of, disabled individuals to develop musical skills and musical identity.

Further, the transferability of music-therapy as a practice is restricted (Thompson and Skewes-McFerran, 2015). The specialised clinical role of the music therapist and the availability of this individual limits access and impact within educational settings (Thompson and Skewes-McFerran, 2015). In that, music therapy can only be delivered when a music therapist is present (Murphy and McFerran, 2017). However, many of the practices and approaches of music therapy may be transferable to non-therapeutic environments such as music education and employed by other individuals supporting people with PMLD (Metell, 2014; Swaney, 2020; Thompson and Skewes-McFerran, 2015). Social and community music practices, including community music therapy, are further explored in the following section. Current practitioner approaches to music for, and with, people with intellectual disabilities are also examined.

3.3.2 Social and community music

As highlighted earlier, there is often a crossover in practices between musical activity for people with intellectual disabilities. This includes the overlap between community music therapy, and community music-making. Community-music therapists facilitate musical communities through group therapy and community sessions, encouraging musical participation, inclusion, and overall well-being of the group. This model of community music-therapy may be closer to the practices of community music than those of music therapy (Rickson and Skewes-McFerran, 2014; Stige and Edvard Aarø, 2011). However, this model is still reliant on the availability of a qualified music therapist. In contrast to music therapy, the

processes, and outcomes of community music-making, or social music, with, and for, people with intellectual disabilities are often undefined. The practice is typically delivered by musicians acting in the role of music facilitator.

Community musicians acknowledge that everyone can engage, make, and celebrate their own music-making and employ flexible, accessible, and inclusive approaches to facilitation (Higgins, 2012). Higgins (2012) presents community music as an 'intentional intervention, involving skilled music leaders, who facilitate group music-making experiences in environments that do not have set curricula' (Higgins, 2012, 4). In this review, literature which includes music-making as a social, non-formalised activity is presented. As discussed earlier in this chapter, music can be used to facilitate the building of relationships, networks, and communities for people with intellectual disabilities (Carlson, 2015; Kittay, 2008; Murphy and McFerran, 2017). Some approaches, which have been developed to structure social interaction, through music activity, for people with intellectual disabilities are discussed below. Most of these are found within practitioner literature.

Current practitioner approaches

Musical Interaction (Prevezer, 2013), developed initially as an approach for children with autism, creates a responsive environment in which the role of the music facilitator is to provide a live accompaniment to the activity. In this approach the music facilitator does not aim to develop a social relationship directly with the participant, but instead adapts the musical accompaniment to support the interactions between the participant and their play-partner. This play partner may be a family member or supporting staff. The approach provides a shared listening and music-making experience, to encourage social interactions between the two parties, with a highly responsive accompaniment or tailored musical environment. The musical accompaniment may be used to influence the emotional and behavioural responses of the participants. However, the approach is reliant on a musician or music specialist to provide the live accompaniment and is often focused on supporting one-to-one relationships.

In contrast, the Rapport-Based Music approach (Laurie, 2021) uses music to foster connection and communication. Drawing on many of the same concepts captured within Communicative Musicality (Malloch and Trevarthen, 2009), this approach specifically focuses on people with PMLD. The approach is based on the principles of Intensive Interaction (Nind and Hewett, 2001), a practical approach adopted by communication partners to support and sustain interactions with people with intellectual disabilities. Laurie (2021) also highlights the influence of Rosenthal and Tickle-Degnan's (1990) ingredients for high quality interactions: mutual attentiveness, positivity, and coordination on the development of the approach. Rapport-Based Music is intended to facilitate 'deeper interactions' (Laurie, 2021) and develop positive connections between those taking part. The approach is described in three steps, in which the music leader sees the offer from those taking part, copies this offer and then celebrates the offer. This approach uses live musical accompaniment; however, Laurie suggests that this role can be fulfilled by a non-music specialist. Notably Laurie (2021) highlights the importance of supporting adults sitting face-to-face, in contrast to side-by-side when employing the Rapport-Based Music approach to enhance communication opportunities.

Tactile Approach to Communication Pac (Tacpac) developed specifically for use with people with severe and profound disabilities pairs particular pre-recorded music and sensory stimuli. The aim of Tacpac is to 'develop communication between two people' (Tacpac, n.d: online), promote response to stimuli, and develop levels of awareness (Panter, 2004) through combining touch and music. The music used in Tacpac is composed with the intent to support the textures of the linked sensory stimuli, and the 'character and emotional quality of the touch experience' (Gent and Newby, 2008, 15). This supports the theory that the compositional elements of music can infer and/or affect emotion, discussed earlier within this chapter. Panter (2004) highlights the importance and range of musical stimuli used in the Tacpac approach. This is further emphasised by Wainer (in personal conversation, 2021), who stressed the significance of the unity between music, rhythm, beat and touch to support sensory alignment. Although not its primary intent, playful responses, by participants with PMLD, have been documented during Tacpac sessions (Panter, 2004). Tacpac is designed to be used by non-music specialists who are trained in the approach (Goldbart and Caton, 2010; Tacpac, n.d).

Using resource packs of pre-recorded music and tactile objects may support non-music specialists, parents, and staff to use the approach. However, research which supports the use of Tacpac is limited and anecdotal. Further research is necessary to develop a greater evidence base for this practice.

Corke's (2012) Interactive Music approach could also be considered a community or social music approach as it aims to build relationships between participants. Much like the Rapport-Based approach (Laurie, 2021), Interactive Music uses playful musical games and songs to support engagement, communication, and interaction for people with PMLD in group settings. This approach is discussed and evaluated in more detail later within this chapter.

Within the practitioner-based literature the skills of those facilitating the music sessions varied. Musical Interaction (Prevezer, 2013), Rapport-Based Music (Laurie, 2021) and Interactive Music (Corke, 2012) all highlighted the role of a music facilitator, however the musical skills needed to fulfil this role in each of the approaches varied, from confident improviser (Prevezer et al., 2012), to basic self-accompaniment (Laurie, 2021). In contrast to this, Tacpac utilised pre-recorded music within the approach, requiring no previous musical skills. Research evidence which supports each of the approaches is limited, therefore the claimed impact and outcomes remain to a great extent subjective. Further understanding of how musical approaches can be used to support communication, and social relationships of people with intellectual disabilities, particularly those with PMLD is necessary. A brief review of the literature which discusses the musical education of people with intellectual disabilities is now presented.

3.3.3 Music Education

Music in an educational context includes both 'education *in*' and 'education *through*' music (Ockelford, 2008, 39). Education *in* music involves the teaching and development of musical skills. This contrasts with education *through* music in which music is used to support or facilitate other educational outcomes. Considering music education, for musical skill development, there is a growing body of evidence to support the approaches and content of music education for people with intellectual disabilities (Anderson, 2021; Ockelford, 2008,

2015; Pickard, 2021; Salvador, 2015). Pickard (2021) acknowledges that tailored pedagogical approaches, which recognise the distinct learning profiles of people with intellectual disabilities, should be employed when teaching and developing musical skills.

Ockelford (2008) makes a significant contribution to the literature on music education for people with PMLD highlighting the widespread recognition of the value of music within their daily lives (2008). The *Sounds of Intent* framework (Ockelford, 2008), developed to map the musical development of people with PMLD, divides musical skills into three categories: 1. proactive, 2. reactive, and 3. reciprocal, and focuses only on the development of musical skill, interest, and preference. Whilst the framework may be useful in understanding the perceived musical experiences of people with PMLD it does not capture the social, emotional, and communicative opportunities music presents. Furthermore, within the context of the UK subject specific skill development for people with PMLD is no longer recommended (Rochford Review, 2016), as people with PMLD, at the earliest stages of development, are unlikely to develop subject-specific skills (Imray and Hinchcliffe, 2013).

So far this literature review has focused on the significance of music in the lives of people, with and without intellectual disabilities, and people with PMLD. Access to a broad range of musical experiences may be fundamental to the well-being, social and reciprocal relationships of people with PMLD. Musical experiences can offer uniting and emotive experiences for all people. However, due to the cognitive abilities of people with PMLD, time expended trying to teach music specific skills may be better spent in 'shared being' and '*educating through music*' rather than '*in education*'. This does not mean people with PMLD should not have extended and multiple opportunities to take part, explore and practise musical activity. Instead, listening to and making music, exploring sound and musical preferences, could be more appropriate when performed with a relational and communicative focus. The following section discusses the focus, implementation, and content of seven studies which used music with people with PMLD.

3.4 Musical interventions for people with PMLD: a systematic review

The researcher, with the two PhD supervisors, undertook a systematic review of the literature on musical interventions with people with PMLD (Rushton et al., 2023). The aim of the review was to evaluate the content, effectiveness and design of previous empirical studies which included music, either pre-recorded or live, as a key feature of the independent variable. The review also examined the characteristics of the musical activity used within each study. The review, in which a systematic search of the electronic databases, ProQuest and Education Resources Information Center (ERIC) was conducted in April 2021, included papers published between 2010 and the beginning of 2021. The review identified seven peer-reviewed studies which included a music-based intervention and at least one person with PMLD (Bosch et al., 2017; Fenech, 2015; Kossyvaki and Curran, 2020; Ockelford et al., 2011; Rushton and Kossyvaki, 2020; Thompson and McFerran, 2015; Wilson and MacDonald, 2019). The definition of PMLD adopted was Doukas et al. (2017), presented earlier in this thesis. The study aimed to present data on participant characteristics, use of music, including purpose and type, and implementation of the intervention. Details on the implementation of the intervention included the intervention frequency and duration, as well as the facilitator, setting and its reported effectiveness. The remainder of this section provides a summary of this review paper.

The reviewed studies were categorised depending on the type of musical activity taking place. Musical activity was defined as either *social*, *therapeutic* or *educational*. Five of the studies included social music activity (Bosch et al., 2017; Fenech, 2015; Kossyvaki and Curran, 2020; Rushton and Kossyvaki, 2020; Wilson and MacDonald, 2019). Social music activity was described as music which supported the social interactions of people with PMLD between their peers and others. One study used music therapy (Thompson and McFerran, 2015), and in one study music was used with the primary purpose to teach or develop musical skill, music for education (Ockelford et al., 2011). Most interventions focused on supporting and increasing opportunities for communication and interaction. This focus was also described within the wider literature which involved musical activity for participants with other disabilities (James et al., 2015).

3.4.1 The participants

The seven studies involved both children and adults with PMLD, however three of these studies included people with PMLD alongside participants with other intellectual disabilities. Where the number of people with PMLD involved in the study was known, participant numbers ranged between four participants and twenty. These sample sizes were relatively small, and reflect the small size of this population, and the time-heavy data collection methods which may be needed when involving a population who do not use standardised methods of communication.

Details of the participants are presented in Table 1 below.

Table 1: Participant details from studies included in the systematic literature review

Reviewed study	Participant details		
	Total number of participants with PMLD	Age range	Sex
<i>Bosch et al. (2017)</i>	2	18+	Unknown
<i>Fenech (2015)</i>	14	22–74 years	5 males 9 females
<i>Ockelford et al. (2011)</i>	20	11 years 11 months-17 years 7 months	Unknown
<i>Kossyvaki and Curran (2020)</i>	1	5 years	male
<i>Rushton and Kossyvaki (2020)</i>	5	8–10 years	4 males 1 female
<i>Thompson and McFerran (2015)</i>	4	10–15 years	3 females 1 male
<i>Wilson and MacDonald (2019)</i>	=/>1	18+	Unknown

3.4.2 Intervention characteristics

Most of the musical activity described in the reviewed papers lasted between 20-45 minutes (Fenech, 2015; Ockelford et al., 2011; Rushton and Kossyvaki, 2020; Thompson and McFerran, 2015; Wilson and MacDonald, 2019) and was delivered on a weekly or twice-weekly basis (Kossyvaki and Curran, 2020; Ockelford et al., 2011; Rushton and Kossyvaki, 2020; Wilson and MacDonald, 2019). The duration and frequency of the reviewed studies was viable for the timetables of educational or social care settings, where most of the musical activity was reported to take place. The period of intervention for each of the studies varied from five-weeks to six-months in duration. The period of data collection may have been limited due to resources. However, longer periods of data collection are desirable when working with people with PMLD due to the extended period needed for learning and processing, and the often-poor health and absence of participants. Further details on the characteristics of the intervention can be found in Table 2.

Table 2: Intervention details from studies included in the systematic literature review

Reviewed study	Duration	Frequency	Period of intervention	Facilitator	Musical Activity	Equipment
<i>Bosch et al. (2017)</i>	Up to 20 minutes per session	10 separate days	9 weeks	Non-music specialist	Social music	Six audio speakers
<i>Fenech (2015)</i>	45 minutes per condition	Unknown	Unknown	Music specialist	Social music	Pre-recorded music Simple musical instruments
<i>Kossyvaki and Curran (2020)</i>	12 minutes	Twice weekly	5 weeks	Music specialist	Social music	‘Cosmo hardware’ a set of six auditory and visual switches
<i>Ockelford et al. (2011)</i>	45 minutes	Weekly	24 sessions over 7 months	Music specialist	Music Education	Untuned percussion instruments and electric keyboard
<i>Rushton and Kossyvaki (2020)</i>	15–35 minutes (25 min average)	Weekly	5 weeks	Music specialist	Social Music	Playful pre-recorded music wrist bells, wrist shell-shakers, chime-tree, flat-skinned drum, and large shell-shakers
<i>Thompson and McFerran (2015)</i>	30 minutes	22 sessions over a period of 6 months	22 sessions over 6 months	Music specialist	Music therapy	Range of different instruments
<i>Wilson and MacDonald (2019)</i>	2 hours	Weekly	10 weeks	Music specialist	Social music	Djembe Boom Whackers Keyboards

The systematic review found that in most studies musical activity was facilitated by a music specialist: a music teacher, therapist, music specialists and a disk-jockey (DJ) (Fenech, 2015; Kossyvaki and Curran, 2020; Ockelford et al., 2011; Rushton and Kossyvaki, 2020; Thompson and McFerran, 2015; Wilson and MacDonald, 2019). As discussed previously, access to music specialists is often limited (Imray and Hinchcliffe, 2013; Thompson and Skewes McFerran,

2015). The transferability of the practice and the resulting effects, described within the reviewed studies, may be compromised due to the availability of a music specialist. Furthermore, the confidence of non-music specialist staff to implement the interventions within their own settings may be compromised due to the implied need for a specialist facilitator.

The equipment used in most interventions (n=5) included a selection of tuned and untuned percussion, as well as singing (Fenech, 2015; Ockelford et al., 2011; Rushton and Kossyvaki, 2020; Thompson and McFerran, 2015; Wilson and MacDonald, 2019). This equipment is likely to be easily accessible in most educational settings (Ockelford, 2008). Approaches which use non-specialised accessible equipment and resources may have enhanced ecological validity, as they can be replicated with readily available resources.

3.4.3 Data collection tools

The outcomes of the interventions were primarily measured by the frequency of observable participant behaviours or responses. Most studies (n=5) used checklists or frameworks which were designed or adapted from pre-existing checklists, by the authors (Bosch et al., 2017; Kossyvaki and Curran, 2020; Ockelford et al., 2011; Rushton and Kossyvaki, 2020; Thompson and McFerran, 2015). Observable behaviours of participants were often collected using video recording, these observations then being quantified to generate comparable data. Three studies (Kossyvaki and Curran, 2020; Rushton and Kossyvaki, 2020; Wilson and MacDonald, 2019) further explored the outcomes of the interventions through interviews with supporting staff or family members.

3.4.4 Reflecting on the review

It may be considered reductionist to simplify the outcome and impact of an intervention into measurable observable behaviours. However, considering the idiosyncratic and infrequent communication methods of people with PMLD, failing to acknowledge these behaviours and responses leaves people with PMLD without discernible existence. Using additional interviews,

with those that know the individuals well, to further substantiate the claims of effectiveness may allow researchers greater understanding of the meaning of behaviour and responses of participants, and the relative significance of the intervention outcomes.

Although only involving a small number of papers due to the sparsity of research with people with PMLD, the review highlighted several areas for consideration when developing, implementing, or reviewing the effects of musical activity for people with PMLD. There is a need to acknowledge and further investigate the role and relationships between participant and facilitator during musical activity. The approaches of the facilitator may develop and alter during the implementation period. As relationships build and familiarity increases the facilitators approach may become more attuned to the participants' preferences and communication. The significance of developing this familiarity, when working with people with PMLD, has also been discussed in the wider literature (Colley et al., 2021).

3.5 Music and Play

Turning to the relationship between music and play, when making music, the word 'play' is often incorporated. People 'play music', orchestras and bands 'play together'. The creative, exploratory, and emotive opportunities that play provides are much the same as those found within music (Solms, 2022). From early childhood many children's toys include music, or musical elements (Young, 2008), and forms of early play between parent and child include songs, musical games, and routines (Watson, 2014; Young, 2008). Musical play is often evident in the expressive and exploratory play of non-disabled children (Niland, 2009). Forming part of broader play activities and playful exchanges, or within specifically facilitated play with a purposeful musical intent, musical play allows young children to creatively explore sound within themselves and their environment (Pitt, 2020). Playful musical exchanges often begin between parent and baby, through exaggerated vocalisations, rocking, and bouncing (Street, 2017; Zeedyk, 2008). Parents and caregivers use imitation, playful vocal sounds, gesture, and facial expressions along with anticipatory songs to create playful communicative moments with their baby (Street, 2017; Young, 2005).

In the context of early years development, defining musical play is difficult as both the boundaries of play and music are ambiguous and open to interpretation. However, the fundamental elements of musical play, which appear within literature discussing the concept, include spontaneous child-led multi-modal improvisations, which often combine movement, singing and an exploration of sound production (Pitt, 2020; Young, 2008). Research suggests that the musical play activity young children create and engage in is notably different from the activity of music-making between adults (Gluschankof, 2002; Pitt, 2020; Young, 2008). This play is often a process based, rather than outcome focused activity, and is freer of musical expectations or structures. When adults become involved in facilitating the musical play activity of young children, they should be mindful not to dominate it (Koutsoupidou, 2020; Pitt, 2020). Instead, Koops (2012) recommends that adults take the role of play partners, joining in with children, rather than leading them, or otherwise, remain as onlookers. The role of adults within play activity was discussed further in the previous chapter.

Pitt (2020) found that musical play provided an environment in which social interaction and communication could be explored between children, their peers, parents, and practitioners without the dominance of formal spoken language. The opportunity to communicate without formalised language, which playful musical activity can provide, may also be relevant to people with PMLD, who use alternative non-speech dominant means to communicate. Furthermore, with minimal use of words, observation and time, all children may have the chance to initiate, lead, or develop playful communicative exchanges (Pitt, 2020).

Considering musical play for people with PMLD, Corke (2012) presents a range of playful practices which are embedded within the creative arts. Corke discusses the potential and significance that music, song, and vocal play have in facilitating playful opportunities for individuals with PMLD. In the 'Interactive Music' approach, discussed previously in this chapter, which is developed from Musical Interaction (Prevezer, 2002), Corke (2012) uses musical songs and routines to build in opportunities for playful responses and exchanges. In contrast to Musical Interaction (Prevezer, 2002), Corke's Interactive Music approach aims to build playful relationships directly between the music facilitator and participants. The approach emphasises

the structure and routine of adult led pre-composed songs or games, using multi-sensory props in small group sessions for children with PMLD. Some key principles to this approach include using musical instruments and props in non-conventional ways to enhance opportunities for engagement and exploration, ensuring participants have enough time to respond and explore and, creating a fun, playful and positive environment in which interactions with the participants are playful, game-like, and celebratory (Corke, 2012). After presenting the approach, Corke provides a selection of pre-composed activities for facilitators to use. She is conscious to highlight the likelihood that participants will prefer some Interactive Music activities more than others.

When comparing Corke's approach to facilitating opportunities for playfulness, through music, some of the practical considerations, similarities and differences between musical play described in research within the early years, with non-disabled young children, and those with PMLD can be found. Playful approaches through and with music offer opportunities for exploration and expression. However, unlike the spontaneous and unstructured musical play described in the Early Years, children with PMLD are less likely to initiate spontaneous musical play activity. The role of the adult, instruments, props, and environment are likely to influence the musical play experiences of people with intellectual disabilities (Corke, 2012; Rushton and Kossyvaki, 2020). Corke's Interactive Music is contained within a behavioural framework. She argues that this framework provides a predictable and safe space for children to participate and anticipate outcomes, offering opportunities for playful responses. However, the lyric heavy songs found within this framework may engender an adult-dominated environment when playing with people with PMLD. This contrasts with the findings of musical play sessions within the early years, which recommended a reduction in adult-speech and dominance to support musical play activity (Koops, 2012; Koutsoupidou, 2020; Pitt, 2020). It may be possible to balance some of the exploratory and creative elements of musical play, described within the Early Years literature, with the adult facilitated activities and approaches suggested for people with PMLD. Creating space for people with PMLD to respond playfully and musically, through reducing adult language and pre-composed lyric-based songs, may allow more opportunities for people with PMLD, to actively lead and influence musical play activity (Rushton and

Kossyvaki, 2021; Ware, 2012). It has to be acknowledged that musical play activity, as with all activities with people with PMLD, will require support and influence from external stimuli. However, it is possible, considering the playful opportunities music provides, and the evidence of music on the emotions, well-being, and relationships of people with PMLD, that musical play could be a co-created, reciprocal activity for all involved.

3.6 Summary

This chapter considered the effects of music on well-being, emotion, and relationships. It has highlighted the effects that music can have on all people regardless of their age, or cognitive ability. The theories surrounding music and emotion aimed to explain and acknowledge the emotional affect music can have on people with profound intellectual disabilities. Solms' (2021) theory presented the argument that emotional responses, generated through musical stimuli, create emotional and often visible responses in people with profound and complex disabilities.

The importance of self-selected involvement in preferred musical experiences, through personal choice was discussed, and the limitations that people with PMLD may have in accessing and initiating these was considered. Throughout the chapter there were anecdotal suggestions that people with PMLD may have musical preferences (Carlson, 2015; Corke 2012; Kittay 2008; Ockelford, 2008; Rushton and Kossyvaki, 2022). However, further evidence and understanding of this is required to inform the type and use of music within the lives of people with PMLD, which may offer opportunities to support and enhance well-being.

The experiences of non-disabled and disabled people engaging in music and the effect these have on their wider relationships were also discussed. This highlighted the potential of shared musical happenings to overcome the communicative obstacles and distances between people with PMLD and their relations, fostering feelings of connectedness and shared appreciation.

The chapter then considered music as therapy, community, and education for people with intellectual disabilities, and more specifically those with PMLD. Most of the literature surrounding music for people with PMLD was found within music therapy. There were mixed

findings on the effects of these sessions, and a dominance of the medical model within their narrative. Notably, the reviewed literature highlighted the importance of sharing knowledge, skills, and approaches used within music therapy practices with the wider network of people surrounding those with PMLD to increase access and availability. Specific approaches designed to support the musical activity of people with intellectual disabilities (Corke, 2012; Laurie, 2021; Prevezer et al., 2012) were evaluated and discussed. The features and limitations of these designs in relation to people with PMLD were considered. After this, a summary of the findings of a systematic review of the literature on musical interventions with people with PMLD (Rushton et al., 2022) was presented. The design, content and implementation of the interventions were considered, along with the methodological design of the studies. The review evidenced that recording observable behaviours of participants with PMLD was the predominant approach in data collection. It also suggested that proxy reporting and interviews with the networks (i.e., teachers, support-staff, and families) of the participants with PMLD provided further explanation and understanding of the findings.

Finally, music, together with play and playfulness was considered. Literature surrounding music and play, the primary focus of this thesis, in the early years context was presented.

Comparisons and parallels were drawn between early years research and the playful opportunities music presents for people with PMLD. Some similarities were found between the musical play experiences of babies and those of people with PMLD. However, the literature which discussed musical play in young children suggested an element of self-generated spontaneity which contrasted with the structure and predictable play approaches used by Corke (2012) and the adult role within the musical play opportunities of people with PMLD (Rushton and Kossyvaki, 2020). The chapter considered whether combining approaches from both early years musical play and previous facilitated music activity for people with PMLD, may facilitate the opportunity for co-created and shared musical play activity for people with PMLD.

The following chapter, the methodology, discusses the development of the Musical Play Framework, an approach to musical play designed with and for people with PMLD and their

supporting play partners. The development and implementation of this framework is the main focus of this thesis. The methods used to develop the musical content of the Musical Play Framework, and to collect data on the impact of introducing the framework in two educational settings, are also outlined.

4. METHODOLOGY

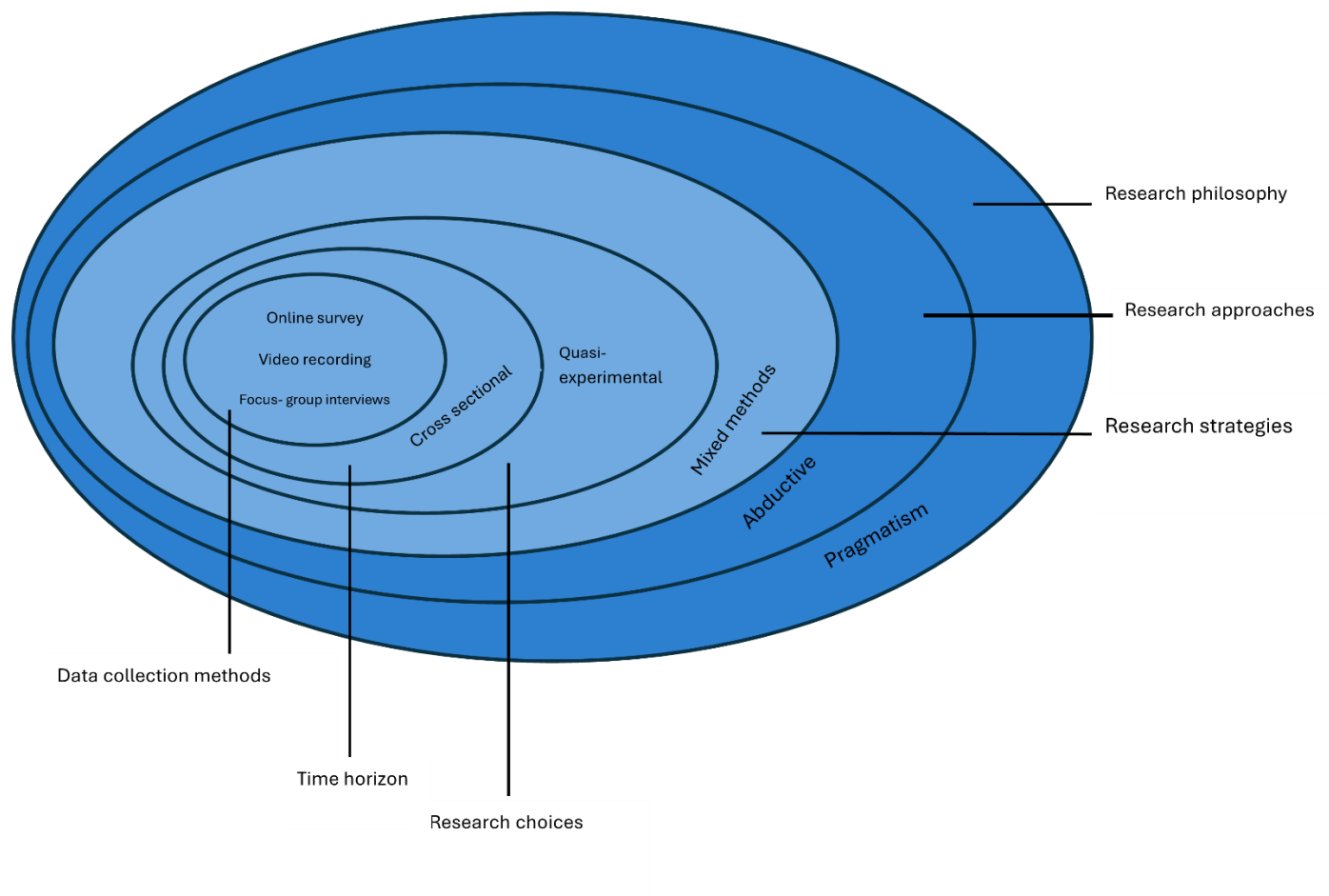
4. Introduction

This two-phased study aimed to investigate the effects of music on the playfulness of people with PMLD and their supporting play-partners. Drawing on previous literature which highlighted the importance of music in the lives of people with PMLD, the intention of the study was to develop and implement a framework of principles. These principles, the Musical Play Framework, had been developed previously with school staff (Rushton and Kosyvaki, 2020). The Musical Play Framework is described in detail within this chapter (see Table 14). In developing the framework further, the researcher felt it was important to consult with people with PMLD, for whom the framework was intended. This formed Phase 1 of this study. The second phase of the study involved training staff participants to deliver the Musical Play sessions. The sessions were delivered in a primary-aged (5-11 years) and college setting (19-25 years) to investigate the effect of Musical Play on participants with PMLD of different age groups and supporting staff.

This chapter begins by outlining the positionality of the researcher and summarising the philosophical approaches to research. The research approach adopted for this two-phased study is explained. The chapter then discusses the methodology and methods of Phase 1, an exploratory listening survey which aimed to consult with people with PMLD using creative research methods. The development of the survey and listening experiment is presented along with the ethical considerations of this phase. The Musical Play Framework, which forms Phase 2 of the study, is then described in detail. The methodology, data collection methods, coding and analysis of Phase 2 are presented and justified along with the ethical considerations, which involved participants with PMLD, who do not have the capacity to provide informed consent (Mental Capacity Act, 2005) and their supporting staff. The limitations of the research design are then highlighted.

A visual summary of the methodology adopted within this study is presented below in Figure 2. The ‘research onion’ adapted from Saunders et al. (2019) outlines the various decisions made by the researcher when developing the methodology for the study. When viewed starting from the outside layer moving inward, each layer describes the research process in more detail (Saunders et al., 2019).

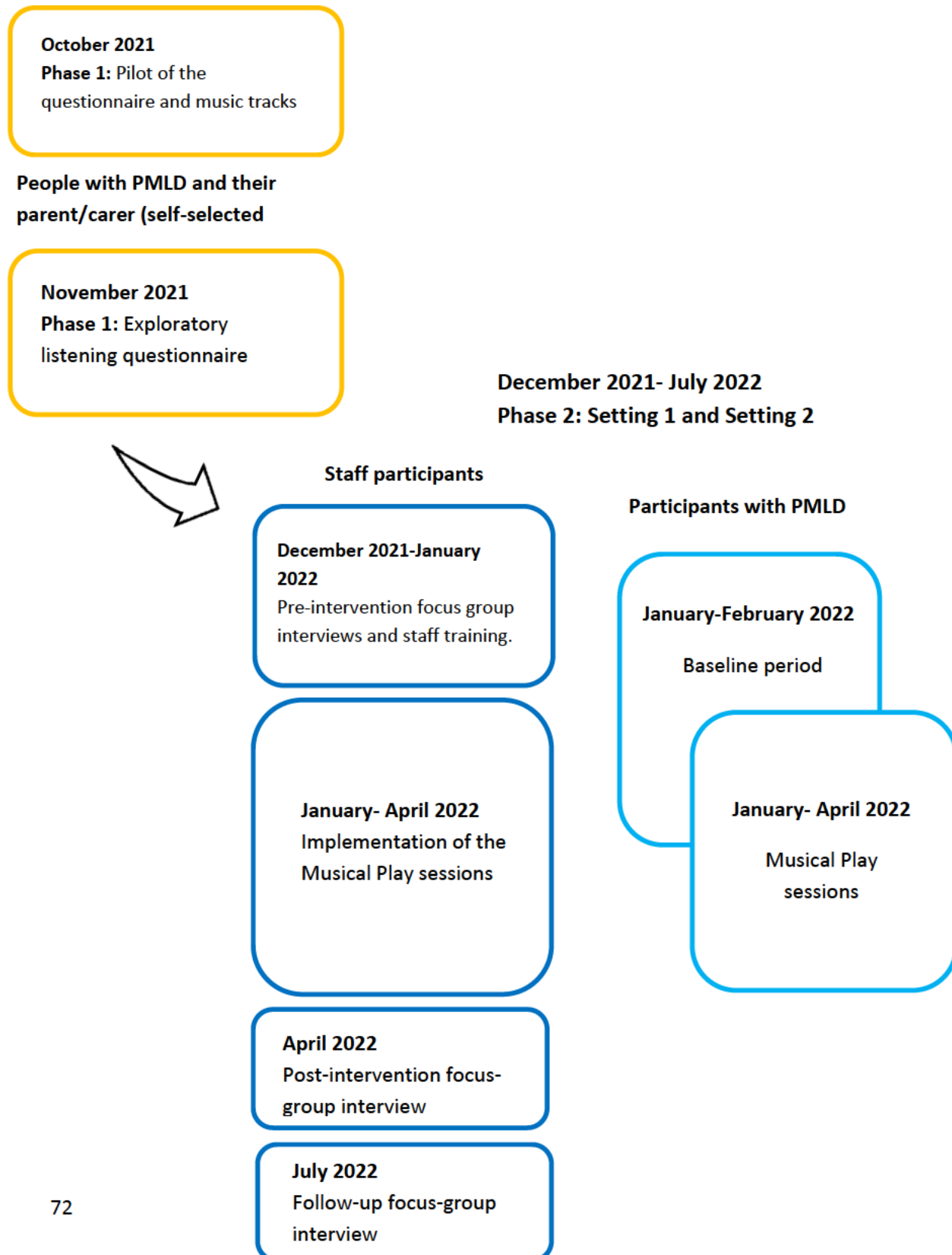
Figure 2: A summary of the methodology of this study; adapted from Saunders’ research onion (Saunders et al., 2019)



The flow diagram below (Figure 3) shows the chronology of the research process. Phase 1 is outlined in yellow, and Phase 2 in blue. In Phase 2, processes which included staff participants are outlined in dark blue, and processes which included people with PMLD are outlined in a

lighter blue. Co-occurring processes can be seen in Phase 2, where activities sit side-by-side or overlap.

Figure 3: Flow-diagram of the research process



4.1 Pragmatic approaches to real world research

Philosophical underpinnings of the study

This section briefly discusses philosophical theories which are commonly used in social science more broadly and those often adopted in educational research. After defining the terms ontology and epistemology the influence of philosophical assumptions on the methodological decisions of researchers is then discussed. The section concludes by presenting the philosophical underpinnings of this study.

The philosophical foundations of a researcher strongly influence the research design, methods, and interpretation of data (Grix, 2004). Ontological and epistemological assumptions effect knowledge production and perception, and in turn influence the methodology of the research.

Ontology considers whether reality exists regardless of the individual or whether reality is a product of our cognition (Grix, 2004). Epistemology addresses whether knowledge is hard, real, and transmittable in a concrete form, or whether it is softer and more subjective, based on personal experience and insight (Cohen et al., 2018). Ontological and epistemological approaches to research influence the way in which researchers conceptualise reality and seek knowledge. Far from an exhaustive list, this study presents three main research paradigms adopted within educational research: positivism, interpretivism and pragmatism.

Positivist ontology assumes reality to be objective and epistemologically aims to determine 'truths' as concrete facts. Positivism assumes that 'truths' exist irrespective of human interest, or researcher experience, and are quantifiable observable behaviours or facts (Ryan, 2018). Researchers who adopt this philosophical standpoint typically analyse large amounts of quantitative data to prove or disprove causal relationships (Della Porta and Keating, 2008). In contrast to positivism, interpretivist researchers acknowledge the existence of multiple realities which can be experienced and interpreted through individual engagement (Johnson and Onwuegbuzie, 2004). Exploring and understanding these realities often involves a small number of highly detailed cases, generating qualitative data (Saunders et al., 2019).

Pragmatism is adopted as both a philosophical and design approach to this research. Pragmatism considers the practicalities of how to conduct research to best answer the research questions of a study. It also addresses why the research should be designed and conducted that way (Morgan, 2014). Pragmatism acknowledges that the world is complex. A pragmatic approach to the research acknowledges that causal relationships may be established or inferred, however these are often transitory and unpredictable (Teddlie and Tashakkori, 2009) and limited in their transferability. Using a mix of both positivist and interpretivist epistemologies, the researcher believes truths exist, but that these truths are relative and not absolute. For example, with regards to this study, feelings of playfulness may be relative truths, taking into consideration a person's mood, experiences, or history. Furthermore, what is understood as a play activity may be a relative truth based on the experiences of the individual/s involved, e.g., a game of football may be experienced as play, sport, or exercise. Pragmatists often use mixed-method research designs, which make use of both quantitative and qualitative data, to answer the research aims. This is a practical, rather than idealistic, approach to research (Cohen et al., 2018) and supports the real-world nature of this study.

Adopting a pragmatic approach, the researcher considered the research questions, and how these could be investigated to determine the methodology and methods which would be used within the study (Teddlie and Tashakkori, 2009). The practicalities of how best to answer these questions in real-world research was fundamental to the design of the study. Whilst researching in a real-world setting may compromise the external validity of a study (the extent to which the findings of the research may be generalised beyond the context of the study) (Harackiewicz and Barron, 2004), it is likely to increase its ecological validity (the amount that the findings of a study may reflect real-world situations and be applicable in daily life). When developing and investigating the effects of a framework, such as Musical Play, which was designed to be delivered in real-world settings, the ecological validity of the research was given high priority. Adopting a pragmatic approach to research, this study aimed to generate true and useful knowledge, which worked at both a practical level and made sense in, and of, the real world (Johnson & Onwuegbuzie, 2004).

The pragmatic approach employed within the study meant that the research questions were given a high priority (Lund, 2012). The research was designed as a two-phased, mixed-method design, to develop an inclusive and collaborative research process. Inclusive research involves participants as active contributors within the research process (Walmsley et al., 2018). Collaborations with research participants, in which knowledge is co-created, aims to redistribute the imbalance of power between the researcher and the researched (Rushton et al., 2023). The first phase used an online exploratory listening survey to collect the experiences and responses of people with PMLD and their parent/carer. The second phase used an intervention study to better understand the experience and effect of using the Musical Play Framework in two specialist settings. Data was collected from individuals with PMLD and their support staff. The design of the research placed equal value on all contributions to the study and collected data from the participants using effective and considerate methods.

4.2 Phase 1: Development of the Musical Play Framework

This section discusses the development of the Musical Play Framework in consultation with young people with PMLD. Previous methodological approaches to exploring musical preferences are presented. Relevant research, which advocates for the involvement of people with intellectual disability within the research process is also discussed. The development of the content, and piloting process of the exploratory listening survey, employed within this study, is then explained. After which the sampling methods, ethical considerations, and limitations of design are established.

4.2.1 Consultation of children/YP with PMLD on the characteristics of playful music

The significance of developing a framework or intervention for a population without consideration or consultation with the population presents ethical dilemmas (Warwick, 2018). Whilst the Musical Play Framework had previously been developed with school staff (Rushton and Kossyvaki, 2020), there had been minimal consultation with people with PMLD due to previous time and fund limitations. Phase 1 of this study aimed to address this limitation through consulting with people with PMLD, collecting their responses and reactions to the characteristics of pre-recorded instrumental music. Phase 1 of this study aimed to explore the

effect of these musical characteristics on the listening experiences of people with PMLD, a population highly unlikely to have been included in previous creative research of this type (Warwick, 2018). It was hoped that the findings from this phase of the study would be used to directly inform the musical characteristics of the pre-recorded music that was used with the Musical Play Framework.

Previous methodological approaches

Perceptions of listening to music, and its effect on an individual's emotional and behavioural responses are often collected through self-reporting (Juslin and Sloboda, 2013; Vastfjall et al., 2012). Whilst some clinical studies have included observing physiological changes when listening to music (Juslin and Sloboda, 2013), most rely on self-reported data (Lamont and Webb, 2010) in which the participants listen to the music and report on its impact on their own emotion and behaviours. The self-reported method of data collection is limited when including people with PMLD, as although with support, people with PMLD may be able to communicate their preferences (Nind, 2008), it is doubtful that they can express their viewpoint (Nind, 2008; Ware, 2004). Therefore, to include the opinions of people with PMLD their parents and primary carers were enlisted as co-researchers.

The idiosyncratic and highly personalised means of communication used by people with PMLD (Colley and Tilbury, 2021) are often best recognised and known by family members or individuals who work closely with the individual on a regular basis (Watson, 2020). This familiarity and closeness allow the opportunity for the typically non-formalised methods of communication a person with PMLD may be using to be contextualised and assigned meaning. Some scholars in the field of PMLD (Nind and Vinha, 2013; Ware, 2004) question the validity and reliability of these interpretations, and the use of proxy reporting. Validity is concerned with 'the design of the research to provide credible conclusions' (Sapsford, 2006,1, as cited in Bell, 2010, 120). Reliability, in relation to quantitative research, is the extent in which the research or data collection methods would produce similar results if repeated. Concerning qualitative research, reliability is the accuracy of the researcher's records compared to the actual happenings (Bell, 2010). Validity and reliability, in the case of using proxy reporting in

research design for people with PMLD, consider whether proxy reporters can represent the views of others with enough accuracy to draw credible conclusions, whether these methods are replicable, and how reliably these are reported. In this instance, the primary carer was viewed as the interpreter, to convey the responses of their son or daughter to the researcher using an online questionnaire. The role of parents/carers was undertaken within the context of distributed competence (Goodley, 2001, as cited in McCormack, 2020), in which the parent/carers is viewed as an expert in interpreting the communications of the key participants, people with PMLD, to make their communications discernible to the researcher. The researcher adopts the understanding that all communication, regardless of ability, is 'co-constructed' (de Haas et al., 2022, 159). Although the communication of people with PMLD may often be pre-intentional (Simmons and Watson, 2015), the thoughtful, careful, and systematic interpretation of these communicative behaviours are used to construct a voice for individuals with PMLD (de Haas et al., 2022) as active contributors to this research, and the design of the Musical Play Framework.

It may have been possible for the preference and responses to the musical stimuli to be collected directly from the participants with PMLD, through direct observation by the researcher. However, extended periods of time, to establish and develop relationships with many participants, would have been necessary. So, to gain a breadth of responses in this consultation phase the researcher utilised the pre-established parent-child relationships. Furthermore, this research was conducted during the Covid-19 pandemic, direct observations may have posed a risk to the participants and the researcher and would likely have been disrupted because of the pandemic.

The research question to be answered in Phase 1 of the study was:

- How do people with PMLD respond and engage with the varying characteristics of pre-recorded instrumental music?

4.2.2 Methods of data collection

Online Listening Questionnaire

Data was generated from an exploratory online listening questionnaire, created using Qualtrics, an online survey platform, which was available for four-weeks during November 2021. Online listening questionnaires use online platforms to survey participant responses to a range of pre-recorded audio samples (Sue and Ritter, 2012). A period of four-weeks was selected to maximise participation. Four-weeks is the longest recommended period for an active online questionnaire, after which participation is likely to cease (SurveyMonkey, n.d). This online method of data collection was likely to reach a wider geographical area and collect responses from a more diverse sample of the population than paper questionnaires (Bell et al., 2022). It allowed the respondents to answer the questions at a convenient time, location, and at their own pace, something which is particularly important to consider for people with PMLD and their families, who are often time-poor and have numerous care demands (Mactavish and Schleien, 2004). The online survey method of data collection enabled the researcher to embed audio and video content into the questionnaire, and for respondents to access this with relative ease.

The questionnaire contained eighteen open and close-ended questions, generating both quantitative and qualitative data, as well as an exploratory listening section which included four one-minute instrumental audio tracks (see Appendix 1 for a blank copy of the online questionnaire). All data collected were about the individual with PMLD although the questionnaire was filled in by their parents/carers.

Table 3: Questionnaire content

Section of online questionnaire	Data collected
Section 1 Questions 1-3	Demographic information: Age, Sex, Ethnicity
Section 2 Questions 4-12	Communication and musical preferences
Section 3 Questions 13-17	Responses to experimental listening tracks

Questions in Section 1 and 2 of the survey were developed from existing literature, presented earlier within the literature review chapters of this thesis. This included the communication and interactions of people with PMLD (Goldbart and Caton, 2010; Grace, 2017; Nind and Hewett, 2001), musical encounters at home (Rushton and Kossyvaki, 2022), previous musical research with families (Mehr, 2014; Young, 2008), as well as the researcher's experience working with families with children/young people with PMLD. Demographic information of participants was collected in *Section 1* of the questionnaire, as the demographics of the participants may have influenced their previous musical experiences, preferences, and responses. For example, participants with PMLD from an Asian or Asian British background may have had more experiences and encounters with musical genres connected to their cultural background (Schäfer and Sedlmeier, 2010).

Section 2 was designed to prompt parents/carers to consider the communicative behaviours of their child/YP. This section was included with the intent to support parents/carers to recall and reflect on the communicative behaviours of their child/YP before beginning *Section 3* of the questionnaire. In Section 3 parents/carers were asked to document any communicative behaviours displayed by participants with PMLD, in response to the exploratory listening experience. Section 3 of the survey was designed as an exploratory listening experience, in which the participant with PMLD listened to four tracks of music with the support of their parent/carer. The responses of the participant were then described by the parent/carer.

Parents/carers were asked to record participant engagement using a five-point Likert scale and note any responses they communicated to/about each of the music tracks. The design and development of the tracks for section 3 of the questionnaire is described below.

Designing and developing the tracks (Section 3)

To gather feedback from participants with PMLD on how differing musical stimuli may affect their emotion and behaviours, four instrumental tracks, lasting around one-minute each, were composed. The researcher used GarageBand, a digital music-making programme (Apple, 2024), to create the four tracks. The duration of each track was based on previous research (Garrido and Schubert, 2015). A review of studies which looked at the effects of music on emotion found the average length of stimuli was around 30-60 seconds (Eerola and Vuoskoski, 2013). The researcher decided the longer length, of around 60 seconds would be most suitable for listeners with PMLD, who often need more time to respond to external stimuli (McCormack, 2020). It was also felt this duration was a practical and realistic request, in terms of the time commitment, for participants. Parents/carers were encouraged to play each track on more than one occasion if they felt this was appropriate drawing on parents'/carers expertise and knowledge of the child/YP with PMLD.

The four tracks were composed to explore the effect of each musical stimuli and consider whether there was any preference or trend among the responses of participants. It was not intended that the tracks proved or disproved the effect of a particular music element, rather, the tracks were presented to gather opinion, and consider whether there was any consensus in preference, much like a taster menu, from those taking part.

As most previous musical research which considers music and emotion has been conducted with non-disabled adults, using self-reporting methods (Garrido and Schubert, 2015; Juslin and Västfjäll, 2008) the tracks were provided to ensure that the transferability of findings from non-disabled populations to children and young people with PMLD, was not assumed. Instead, participants with PMLD were consulted on their own responses to a range of music.

The content of each of the tracks was designed to emphasise specific and differing musical elements, for example, Track 1 emphasises major tonality, syncopation, and a faster tempo, in contrast to Track 2 which emphasises a strong pulse, at a tempo comparable to the speed of a resting heartbeat. Similarly, Track 3 was created to consider the ethnic diversity of participants who may engage with the listening experience, whilst also using specific instrumentation, such as the bells, which the researcher has found to elicit positive responses from individuals with PMLD in previous musical experiences. Track 4 again included instrumentation that the researcher has found to be engaging for, and may be familiar to, people with PMLD (the chimes and chime-tree), additionally this track was purposefully composed in a minor key to consider whether the effect of minor tonality (as ‘sad’ music, Lundqvist et al., 2009) was perceived in the same way by individuals with PMLD.

Table 4: A basic description of the four instrumental tracks used in the online questionnaire

Track No.	Basic description of musical elements	Tempo (bpm)
1	Major tonality, simple melodic line and popular I, IV, V chord progression. Marimba and brass instrumentation with shuffle rhythm.	125
2	Unpitched, percussion instruments, strong pulse	70
3	Modal, South Asian, Bollywood style. Bells, percussion, and sitar instrumentation.	98
4	Minor tonality. Chimes, clarinet, and chime-tree instrumentation.	76

All four tracks can also be heard online: <https://www.youtube.com/@musicalplayresearch>.

4.2.3 Piloting

Undertaking the process of piloting allows the researcher an opportunity to identify any modifications or adjustments that need to be made to the research tools. In turn these

adjustments can improve the understanding, usability and/or type of data produced from the research tool (Malmqvist et al., 2019). This has the potential to improve the quality of the overall research project (Kim, 2011). Within this phase of the research, the online questionnaire and the instrumental tracks were piloted. The online questionnaire was piloted with families/carers of people with PMLD. The instrumental tracks were piloted with musicians and people working with individuals with PMLD. The process of piloting is outlined below.

Piloting the questionnaire

Two versions of the questionnaire text were generated using first- and third-person language. The language of the questionnaire was important as an attempt to establish the viewpoint being collected, and the person providing it. There are several debates surrounding the language used in identifying disabled people (Botha et al., 2023) however few of these include people with PMLD. This consultation aimed to collect the views of people with PMLD whilst engaging their parent/carer as a co-researcher to relay these responses to the researcher. However, fundamentally it was the parent/carer completing the questionnaire. At this stage of piloting the questionnaire did not include the musical extracts and was piloted only to gather feedback on the language and clarity of the content.

Each question was developed in two ways, one in which the '*I*' referred to the participant with PMLD, and one where the '*they*' referred to the participant with PMLD. For example:

Pilot V1: Q5. *When I am in a good mood, I will show this through...* (e.g., How do I look? How do I move? What sounds do I make?)

Pilot V2: Q5. *How do they communicate their good mood?* (What does this look like in their actions/sounds)

Both versions of the survey were shared via email with parents (n=3) and carers (n=3) of people with PMLD, with whom the researcher had previously established connections, with the following questions:

1. Which version of the questionnaire makes more sense to you, Pilot 1, or Pilot 2, and are there any questions you are unsure of how to answer?
2. Which language do you prefer in the address, first person or third person?
3. Is there anything you would change to make it easier to understand or to answer?

All those who responded, two parents and one carer (n=3), said they preferred third-person language, version 2. They felt it was more respectful and made most sense. One carer said,

'I much prefer third person as (to me) it feels more respectful to talk about X through my observations, rather than stating it as if he is saying it about himself...truthfully I don't know what he would want said about himself!'

Piloting the questionnaire also highlighted the need for more explanation of the musical terms used. Additionally, there was a need to further clarify the processes the parent/carers would have to follow to take part in the exploratory listening experience. As a result of piloting, it was decided that third-person language was most appropriate. More information was also added to support parents/carers to navigate the exploratory listening experience; a video which described the online questionnaire, and its purpose, was added to the participant information form to support parents/carers to act as co-researchers in the exploratory listening section of the questionnaire.

Piloting the instrumental tracks (Section 3)

The instrumental tracks were also piloted with individuals known to the researcher. These individuals were a mixture of primarily musicians (n= 12) and a few non-musicians (n=2). The instrumental tracks were piloted with a different group of participants than the questionnaire. This was to ensure the goodwill of the pilot participants was not exhausted. Non-musicians who were contacted were professionals who currently, or have previously, worked with people with learning disabilities. All individuals were pre-established contacts of the researcher. Participants were contacted via email and asked to answer the following questions.

1. How does the track make you feel (what mood and/or emotion) and could you describe why?
2. Would you change, add, or alter anything musically about the track to further enhance this feeling?
3. Which was your favourite track?

There was consensus, from those who responded (n=14) of the mood/emotion felt when listening to the four instrumental tracks. These emotions mostly corresponded with the musical intentions of the researcher during the composition process. For example, Track 1 was composed to generate positive, happy feelings and similar descriptions were collected from the pilot. Respondents to the pilot suggested changes to the harmony, instrumentation, dynamics, and structure of the tracks. A full list of suggestions can be found in Appendix 3. After piloting the tracks, the following changes were made:

Table 5: Amendments to tracks after piloting

Track No.	Amendment
1	Trumpet counter melody added to the second section.
2	Dynamic hairpins added. Additional bass drum line added.
3	Additional drum line added.
4	Dynamics of parts adjusted. Clarinet counter melody added in second time.

4.2.4 Sample

Sampling strategies enable researchers to select specific samples of a whole population. Typically, it is not possible to collect data from a whole population, due to limitations of access and researcher resources (Bell and Waters, 2018). Therefore, sampling strategies facilitate opportunities to create sub-groups of the entire population. Types of sampling strategies

impact on the data collected, internal and external validity, and the generalisability of findings to the wider population (Emmel, 2013).

Phase 1 of the study used a self-selected purposive sample of people with PMLD aged 5-25 years in England and their parent/primary carer. The characteristics of the sample are described in the inclusion criteria below.

Table 6: Inclusion criteria for the online listening experience purposive sample

Inclusion Criteria Young Person	Inclusion Criteria Adult	
Aged 5-25 years	The primary carer or parent of an individual with PMLD as defined by the Core and Essential Standards (2017)	
An individual with PMLD as defined by the Core and Essential Standards (2017)		Regular access to the internet to see/access the link to the online questionnaire
		Adequate computer literacy skills to navigate the online questionnaire
Living in England	Living in England	
Male or female	Male or female	

The sample for Phase 1 was generated from the online exploratory listening questionnaire, which was distributed as an unrestricted, self-select survey. To recruit potential participants a link to the online questionnaire was shared with gatekeepers, including schools, parent-carer groups, and on social media platforms (i.e., Twitter and Facebook). A physical leaflet, which included a QR code link to the questionnaire, was also shared with schools and organisations known to the researcher. Potential participants were provided with the Core and Essential Service Standards (Doukas et al., 2017,12) descriptor of people with PMLD, on the participant

information form, to help ensure that their child/young person met the criteria for the research.

'People with Profound and Multiple learning disabilities are a heterogeneous group of people with a profound intellectual disability, often combined with additional disabling conditions such as physical disabilities, sensory impairments and complex medical needs'.

Purposive sampling, used in this study, allowed the researcher to pre-define the characteristics of the sample, ensuring that these characteristics fit the purpose of the research. The target sample size was fifty children/YP with PMLD and their parent/carer. The researcher made these pragmatic decisions as they seemed both practical and achievable. Sampling was limited to England, due to the type of ethical approval granted for the study. Purposive sampling was necessary to collect data from individuals with PMLD within the age range of 5-25 years. This criterion was selected as these individuals are likely to be accessing educational settings and meet the specific focus of the study. The purposive sampling strategy used, and the way in which the sample was generated, may have facilitated access to an under researched population (Nind, 2008). Sampling in this way, and using online data collection methods, meant that the survey was likely to have a wider population reach, which may have provided opportunities for the consultation of people with PMLD from a wider geographical area.

Fifty respondents accessed the questionnaire, which was the target sample size. A total of 26 respondents (52%) completed over 70% of the survey. Any survey with over 70% completion were included in the data as these partial completions were felt to include valuable data. Data was collected from fifteen respondents in Section 3 of the online survey, the exploratory listening experience. A total of thirteen surveys were fully completed.

4.2.5 Ethical Considerations

The research was undertaken with approval from the Research Ethics Committee (REC) (England) and sponsorship by the University of Birmingham (see Appendix 3 for a copy of the ethics application). As sponsor, the University of Birmingham took ultimate legal responsibility for the initiation and management of the research (REC, n.d).

Ethical considerations for Phase 1 of the study, the online survey and listening experience included two groups: i. parents, and carers of people with PMLD and ii. individuals with PMLD. Parents/carers were provided with a participant information sheet which included a description of the possible risks of taking part in the study, a privacy statement, and an indication of the time commitment of the listening experience. Consent for participants with PMLD was obtained by proxy, in that their parent/primary carer consented for them to be involved in the study. Whilst this poses some ethical concerns, parental consent is an established medium in which children (under the age of 16 years) can be included in research (British Educational Research Association, 2018). Since parents/carers are likely to be responsible for the auditory and musical home environment of people with PMLD (Rushton and Kossovaki, 2022), it was felt that participation in the listening experience was unlikely to cause any harm. Further, to avoid any potential psychological harm parents/carers were informed of their rights to skip any question or musical stimuli, particularly if their child or young person appeared distressed by the musical stimuli; or leave the listening experience at any point. After this, all participants were required to give informed consent before proceeding with the online survey and listening experience.

No identifiable information was collected or requested in the questionnaire; this gave participants full anonymity (UK Data Service, n.d). Participants were given the option to have access to a summary of the findings after the end of the study. To disseminate the findings participants were requested to provide their email address. These email addresses were collected separately from the main questionnaire, to ensure anonymity, and were stored according to the UK Data Protection Act and the General Data Protection Regulations (UK Data Protection Act, 2018) and in a separate file to the questionnaire results.

4.3 Phase 1: Summary

The ease and flexibility of participation in the consultation phase of the study needed to be prioritised. Parents of children and YP with PMLD are frequently reported to be time-poor (Mactavish and Schleien, 2004) and the demands of care-routines are often inflexible (Wilder and Granlund, 2015). Using an online questionnaire meant participants could take part at a convenient time, returning to the survey later if there was an interruption. The online survey was likely to reach a wider audience, and so increase the number of people with PMLD able to contribute to the consultation phase of the research. The exploratory listening section of the survey allowed participants with PMLD an opportunity to actively engage with, and respond to, the music presented. Whilst parental/carer support was required to access the questionnaire, the accessible medium, music, used in section 3, may have reduced some of the hierarchical imbalance of a linguistic based research processes.

4.4 Phase 2: Using the Musical Play Framework

The second phase of the study involved the implementation of the Musical Play Framework. This section details the development of the framework, the settings, and participants with whom the research took place. It then outlines the process of implementation, the methods of data collection used with participants with PMLD, followed by those used with staff participants. The ethical considerations and limitations of the research design are then presented.

To investigate the effect of the Musical Play Framework on the play experiences of people with PMLD and their supporting staff, the researcher adopted a quasi-experimental design, using concurrent triangular mixed methods (Creswell, 2003). Following this design, the researcher collected quantitative data from participants with PMLD using a multiple baseline design, and qualitative data from staff participants through focus-group interviews. Collecting qualitative data in conjunction with quantitative, enabled the researcher to better understand the practicalities of implementing the Musical Play sessions, and gain insight into the outcomes and impact of the sessions on participants. Further, this design allowed the researcher to collect

and generate multiple data within the same timeframe, minimising disruption to the participants and settings (Creswell and Clark, 2017). The concurrent triangulation of data during analysis and discussion allowed the researcher to consider multiple perspectives.

The research questions to be answered in Phase 2 of the study were the following three:

1. How does the introduction of Musical Play session affect the potential expressions of playfulness of students with PMLD?
2. How does Musical Play impact peer-awareness and peer-play opportunities for students with PMLD?
3. How does the use of Musical Play affect the attitudes of teaching-staff towards play for students with PMLD?

4.4.1 Sample

Purposive sampling was used for this phase of the study. As discussed previously in this chapter purposive sampling enabled the researcher to assemble a sample which met the specific needs of the study. The focus of this sampling strategy supported the pragmatic and real-world nature of the research (Emmel, 2013). This method of sampling may produce data that can be applied to those within the wider population with similar characteristics. However, the heterogeneous nature of people with PMLD limits transferability (Chadwick et al., 2019). The target sample size was 10-12 children and young people with PMLD and their support staff, a total of approximately 24 participants. Previous musical research involving people with PMLD has include sample sizes of between four to twenty participants (Rushton et al., 2023a). This sample size was selected as it was thought to be a practical and manageable size for the researcher. Settings which included primary-aged children 3-11 years were invited to take part in the study as play is often associated with the activity of young children (Coelho et al., 2017). However, the researcher was also particularly keen to work with settings for older student (16+ years) as there is a dearth of research including play and playfulness involving adults with learning disabilities (Kossyvaki and Papoudi, 2016).

After reviewing the content of the websites of specialist educational settings based in the West Midlands, settings that appeared to have at least one class of students with PMLD were contacted via email. Four settings including children aged 3-11 and two settings that included adults aged 19-25, the two-target age groups for this study, were invited to take part. The location of West Midlands was selected as it was accessible for the researcher, who would need to attend the research sites regularly. The contact email address for each setting was either the headteacher/deputy-headteacher and/or the music specialist teacher. One primary setting (3-11 years), two college settings (19-25 years) and an all age (3-19 years) setting responded. The researcher was known, in their capacity of music facilitator, to all settings that responded. Two settings were selected on a first-come basis and are described below.

Potential student and staff participants were identified by the gatekeeper/s at each setting. Gatekeepers included the senior leadership team and class teachers. The inclusion and exclusion criteria for recruiting potential participants are listed below.

Table 7: Participants with PMLD inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Child/YP aged 5-25 years with PMLD	Child/YP with severe to mild or no learning disabilities Child/YP with profound physical disabilities but not profound intellectual disabilities
Child/YP who has regular attendance (> 70%) at the research sites based on their records from the previous term	Child/YP who does not attend one of the research sites Child/YP with PMLD who has irregular attendance at the setting (less than 70% attendance) based on their records from the previous term
Child/YP whose parent/guardian/consultee has provided written consent	Child/YP for whom written consent cannot be/is not obtained
	Child/YP with PMLD who does not engage in musical activities due to religious,

	cultural, or personal reasons
	Child/YP with PMLD for whom musical activity is known to trigger increased seizure activity or other adverse physical responses (such as tachycardia)

Table 8: Staff participants inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Staff who work regularly with participants with PMLD (at least 3 days per week)	Staff participants who do not work with someone with profound and multiple learning disabilities at least 3 days per week
Staff who work regularly at the research sites (at least 3 days per week)	Staff participants who do not work at one of the research sites at least 3 days per week
Staff who provide written informed consent	Staff who do not provide written informed consent

4.4.2 Settings

Setting 1

Setting 1 was a special school for students aged 2-11 years identified as having severe and complex special educational needs and disabilities. The school size was approximately 150 children. There were three classes for children with PMLD. Each class had approximately 10-12 students, one teacher and 3-4 teaching assistants (TAs).

Six participants with PMLD were recruited across the three classes, two participants per class, all participants were male. Most staff (n=9) across the three classes were recruited as participants, the school suggested this due to staff absences/irregularity of staffing in each class

due to the on-going disruption of the Covid-19 pandemic. Staff participants included one teacher, one assistant head-teacher and seven TAs, all staff participants were female.

Information on the participants with PMLD is presented in the table below. The descriptions are provided by the researcher and the staff participants supporting the individuals with PMLD. They are not an exhaustive list of the medical conditions of each participant but instead aim to capture some of the characteristics of each participant relevant to this study similar to the pen-portraits used at the setting.

Table 9: Setting 1 details of participants with PMLD

Name*	Sex	Age (years)	Description of disability/diagnosis**
Chaviv	Male	6	Chaviv makes some vocalisations in response to familiar adults. He uses a wheelchair during the school day. Chaviv appears to have little control of his arm or hand movements. He has been diagnosed with global developmental delay, hearing impairment and dystonic movements.
Hamza	Male	9	Hamza is a social individual, he enjoys tactile exploration, and close contact with his supporting staff. He uses a wheelchair. He makes vocalisations in response to familiar adults, and music. Hamza has a multi-sensory impairment; he is deaf-blind and has cerebral-palsy
Jack	Male	7	Jack makes some vocalisations when he is distressed or/and if he is happy. He has been diagnosed with global developmental delay, microcephaly, and blindness. Jack uses a wheelchair during the school day.
Robert	Male	8	Robert vocalises during musical activities and in response to familiar adults. When medically well he usually appears happy and content. He explores objects using his mouth. Robert uses a wheelchair and is blind, he has been diagnosed with spastic quadriplegia.
Jordan	Male	10	It is often difficult to know what Jordan is responding to. Jordan uses a wheelchair and Acheeva bed (see terminology) during the school day. He has limited and repetitive movement in his hands. He has been diagnosed with hydrocephalus, cerebral palsy, and severe visual impairment.

Kaden	Male	11	Kaden is a sociable and comical individual who, when medically well, usually appears happy. Kaden uses a wheelchair and Acheeva bed during the school day. He has a tracheostomy. He has some movement in his arms and hands, he will sometimes attempt to move his whole body in response to music. Kaden vocalises occasionally in response to a familiar adult or music. Kaden has been diagnosed with a severe neurodevelopmental disorder.
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*all participants' names are pseudonyms

** descriptions are provided by the researcher and the staff participants, those supporting the individuals with PMLD. Medical information was provided from the students Education and Health Care Plan (EHCP).

Table 10: Setting 1 details of staff participants

Name	Gender	Role	Length of time in role	Number of Musical Play sessions delivered
Isabelle	Female	Teaching Assistant	15 years	5
Ruth	Female	Teaching Assistant	16 years	7
Louise	Female	Teaching Assistant	28 years (various settings)	7
Beth	Female	Teaching Assistant	14 years	1
Sally	Female	Teaching Assistant	22 years	1
Emily	Female	Teacher	4 years	1

Setting 2

Setting 2 was a specialist college for young people aged 19-25 with disabilities and different learning needs. The college size was approximately 150 students. There were three classes for students with PMLD. The students attend college four days per week, the fifth day, as described by a member of the college senior leadership team, is intended for independent

study or work-placements. Each class had approximately 10-12 students, one teacher and four TAs.

Six participants with PMLD were recruited across the three classes, two participants per class. There were two female and four male participants. Six staff were recruited as participants, two staff per class. All staff participants were TAs and females. One staff participant took part in the first focus group and then had to withdraw from the research due to personal circumstances.

Information on the participants with PMLD is presented in the table below. The descriptions are provided by the researcher and the staff participants, those supporting the individuals with PMLD. They are not an exhaustive list of the medical conditions or diagnoses of each participant but aim to capture some of the characteristics of each participant similar to the pen-portraits used at the setting.

Table 11: Setting 2 details of participants with PMLD

Name *	Sex	Age (years)	Description of disability/diagnosis**
Robynn	Female	19	Robynn is a social individual; she generally has good health and appears happy. She enjoys gaining people's attention through vocalisations. Robynn can walk unaided. She is very reactive to external stimuli, particularly people she knows, both staff and peers, and music. Robynn has been diagnosed with a rare chromosome disorder.
Joel	Male	19	Joel can walk with support. He makes repeated vocalisation when he is excited. Joel enjoys stimming and clapping using his hands. He is nervous around new people but reaches out to familiar adults. Joel has been diagnosed with a rare genetic condition and a significant learning disability.
James	Male	19	James uses a wheelchair and uses oxygen. He is non-verbal. It is often difficult to know what James is responding to. Sometimes James laughs. James has spastic cerebral palsy and a profound learning disability.

Taksheel	Male	21	Taksheel is non-verbal, he is interested in his surroundings, particularly in what adults around him are doing. He is often sleepy in the mornings. Taksheel uses a wheelchair and wears glasses. Taksheel has Angelman Syndrome.
Pawel	Male	22	Pawel uses a wheelchair. He is often unwell and experiences pain. He is non-verbal. It is often difficult to know what Pawel is responding to. Pawel has minimal use of his hands. He has been diagnosed with spastic quadriplegic cerebral palsy, hydrocephalus, scoliosis, and a visual impairment.
Reepal	Female	19	Reepal can walk with support. Reepal is reactive to musical stimuli, crying when listening to certain 'sad' music. She does not vocalise often. Reepal has repetitive hand movements associated with having Retts Syndrome.

*all participants' names are pseudonyms

** descriptions are provided by the researcher and the staff participants, those supporting the individuals with PMLD. Medical information was provided from the students Education and Health Care Plan (EHCP).

Table 12: Setting 2 details of staff participants

Name	Gender	Role	Length of time in role	Number of Musical Play sessions delivered
Helen	Female	Level 3 Teaching Assistant	6 years	5
Bina	Female	Level 2 Teaching Assistant	Unknown (This information was not provided by the participant)	4
Jenny	Female	Level 3 Teaching Assistant	4 years	5
Sara	Female	Level 2 Teaching Assistant	4 years	7
Julie	Female	Level 3 Teaching Assistant	4 years	8

4.4.3 Data collection methods: Research Question 1 and 2

The data collection process is detailed in the following section. Data collection methods used with participants with PMLD are presented first. Data on participants with PMLD was collected during one academic term, lasting 12-weeks, between January and April 2022. Data was collected in two six-week blocks, with a one week break in between, due to the half-term break. A concurrent multiple baseline design was used, in which the independent variable, the Musical Play Framework, was introduced after a period of baselining.

The process of baselining is first presented. The Musical Play Framework is then described. Training, coaching and logistics of the delivery of the Musical Play sessions and collection of video footage are then explained. The process of coding the video footage, using interval coding is outlined and justified, after which the data collection process and methods used with staff participants are introduced.

4.4.4 Concurrent multiple-baseline design

A concurrent multiple-baseline design (Morgan and Morgan, 2009) was used to collect data on child/YP participants. This experimental A (baseline) B (intervention) design is particularly suitable for individuals with PMLD, who are a heterogeneous population, making it difficult to establish a control and intervention group of similar characteristics, as required in Randomised Control Trials (RTC) (Hutchinson and Bodicoat, 2015). The multiple baselines allowed the researcher to investigate the effect of the Musical Play sessions on the potential expressions of playfulness displayed by participants with PMLD. Each transition of participants from the baselining activity to Musical Play sessions provided an opportunity to observe the effects of the Musical Play sessions. Varying the times in which the participants transitioned from baselining to Musical Play sessions allowed the researcher to reduce alternative explanations for any changes in communicative behaviours which may have occurred. Considering other designs, such as A (baseline) B (intervention) A (back to baseline activity) (ABA), the researcher felt it may have been unethical to impose an enforced return to baseline conditions and may have jeopardised any lasting impact or continued implementation of the sessions, after the end

of the study, in the settings. Additionally, it would not have been possible to return to true baseline conditions since staff behaviour, and practices, may have changed as a result of the Musical Play training and the experiential learning staff may have gained through implementing the intervention. The multiple baseline AB design allowed the potential changes in participants, and effects of the intervention, to be compared to their individual starting point (baseline). It was not expected that there would be any need to compare participants to one another. The limitations of this are discussed later in this chapter.

Baselining

The researcher scheduled twice-weekly 30-minute video-recording sessions for each participant. This was partially determined by the availability of the researcher and preference of the settings. Baselining provided an opportunity for typically occurring activities to be captured and a baseline of potential expressions of playfulness, the dependent variable, to be established. Recording sessions for each participant occurred at a fixed day and time. The frequency and duration of the recordings allowed the researcher the opportunity to collect the minimum number of data points, five, over a relatively short time frame (minimum 2.5 weeks) without being overly intrusive in each class setting. A minimum of five baseline data points were collected as suggested for educational research (What Works Clearinghouse-WWC, 2022). Thirty-minutes of footage was selected with the aim of capturing a minimum of ten-minutes of continuous film for coding. The length of time was practical as the duration of a timetabled activity was approximately 30 minutes in each setting. The regularity of the recording schedule reduced the bias of only recording the participants during moments of high engagement. However, it also meant that the content of the baselining sessions was limited to pre-scheduled timetabled activity, which may or may not have facilitated prominent moments for potential expressions of playfulness for participants.

The researcher observed and video-recorded all baselining sessions; using a Zoom Q2n 4K camera, positioned on a tripod, in front of the participants. Brief notes were also taken, these included information on any interruptions which occurred, and comments on the wellbeing of participants made by class staff. Ten-minutes of footage, from the middle section of the video,

in which activity was happening, and the student/s were present, was then coded using a 30-second interval coding method. This method of interval coding is described in detail later within this chapter. When possible, participants were recorded in pairs within each class to collect data on peer interactions.

Table 13: Baseline activities for participants

Setting	Participants	Activity
Setting 1	Kaden and Jordan	Afternoon greeting routine Tacpac
	Robert and Jack	Afternoon greeting routine Tacpac
	Hamza and Chaviv	Tacpac* Yoga
Setting 2	Robynn and Joel	Morning greeting routine
	Reepal and Pawel	Music/communication session
	James and Taksheel	Morning greeting routine Music/communication session

*Tacpac, a sensory communication resource using touch and music (Tacpac, n.d)

The role of the baselining period was to establish a measure of potential expressions of playfulness displayed by the participants with PMLD before introducing the Musical Play sessions. After a period of baselining participants began taking part in the Musical Play sessions. Sessions were scheduled twice weekly. The timetabling of these sessions was determined by the settings.

Figure 4: Multiple baseline design: Intended and actual implementation; Setting 1

Participant	Week											
	1	2	3	4	5	6	7	8	9	10	11	12
Intended implementation pair 1	Baseline		Musical Play					Musical Play				
Kaden	School closed due to Covid	Baseline		Musical Play			Musical Play		Staff sickness	Musical Play		
James		Baseline		Musical Play			Musical Play		Staff sickness	Musical Play		
Intended implementation pair 2		Baseline				Musical Play		Musical Play				
Chaviv	School closed due to Covid	Baseline		Participant illness		Baseline		Musical Play			No delivery	
Hamza		Participant illness			Baseline			Musical Play			No delivery	
Intended implementation pair 3	Baseline							Musical Play				
Robert	School closed due to Covid	Baseline						Participant illness				
Jack		Baseline	Participant illness		Baseline			Baseline	Musical Play	Staff shortage	Musical Play	Staff shortages

Figure 5: Multiple baseline design: Intended and actual implementation; Setting 2

Participant	Week													
	1	2	3	4	5	6	7	8	9	10	11	12	13	
<i>Intended implementation pair 1</i>	Baseline						Half term	Training day	Musical Play					
Robynn		Participant illness	Baseline							Musical Play				
Joel	Baseline									Musical Play				
<i>Intended implementation pair 2</i>	Baseline									Musical Play				
Pawel	Participant illness		Participant illness	Baseline		Participant illness				Musical Play		Staff sickness	Participant illness	Musical Play
Reepal	Baseline		Participant illness	Baseline						Musical Play		Staff sickness	Musical Play	
<i>Intended implementation pair 3</i>	Baseline			Musical Play						Musical Play				
James	Baseline			Musical Play						Musical Play	Participant illness	Musical Play	Staff	Musical Play
Taksheel	Baseline	Participant illness	Baseline		Participant illness	Musical Play			Musical Play	Participant illness	Musical Play		Staff shortage	Musical Play

Independent variable: Musical Play Framework

The independent variable in the multiple baseline design was the introduction of the Musical Play sessions. The Musical Play Framework (see Table 14 for a brief description of the framework) was developed by the researcher and was adapted from the *General Principles of Musical Play* and *Play-Partners: the Role of Adults in Play* (Rushton and Kossyvaki, 2020). The Musical Play Framework (see Appendix 4 for a full description of the framework) merged the *General Principles of Musical Play* and *the Role of Adults*, to create eight principles of practice for staff participants to employ during the Musical Play sessions. Combining the principles into a simplified set was done with the aim to improve understanding and usability.

Table 14: Musical Play Framework

Principle	Description
Prepare	The environment is free from external noise pollution and is appropriately lit. Playful (up-tempo and major) music is used (live or as a recording) to create a positive environment. Play-partners are free from distractions or other tasks and show availability to play. They are appropriately positioned to best support the child.
Observe	The play-partner presents instrument/instruments which may stimulate interest. These may or may not form the focus for play. The play-partner remains engaged in the activity/interest of the learner. Interests may vary in duration; they may be fleeting/ sustained or delayed.
Respond	Pre-intentional communication is assigned meaning and intentional communication gets a response. The learner gets to know that their action gets a result. Actions, movements, or vocalisations are used as the stimulus to develop a playful musical exchange.

Participate	Play-partner uses a playful and animated pitch (e.g. Oooooooh! Ah! Wow!) Sing and move enthusiastically, use exaggerated and anticipatory vocalisations/body language. Laugh loudly and smile lots.
Extend	The play-partner supports the child to explore ways of producing sounds from/with the instrument, these may be non-conventional. This may include throwing/banging instruments and non-conventional ways of creating sounds.
Motivate	Use minimal speech. The play-partner uses speech to motivate the child/ create a playful atmosphere which do not exceed 3-4 words mapped onto what exactly the learner is doing. Where possible avoid instructive and negative language. Playfully use vocalisations/voice play to explore intention and interaction.
Support	Play-partners work to scaffold and support peer-play, they are careful not to dominate it.
Share	In group Musical Play, the play-partner promotes peer interaction through exaggerated sharing of instrument/stimuli. Play-partners draw attention to peer through verbal encouragement, non-verbal signs and supporting turn- taking activities.

The Musical Play Framework is designed for up to two students with PMLD and a supporting play-partner. In this study the role of supporting play-partner was undertaken by a staff

participant, from the students' class, who knew the students well. Staff participants were trained by the researcher in using the Musical Play Framework. The training and coaching protocol is explained below.

Training and coaching staff participants

All staff participants were trained in using the Musical Play Framework. Training lasted for approximately one-hour and included theoretical and practical content (see Appendix 5 for a copy of the training material). The session began with a practical activity where the participants played catch with a ball, first without music, then accompanied by a variety of pre-recorded instrumental music. Participants discussed the effect of adding the music to the activity. The theoretical section of the training facilitated a discussion about playfulness in people with PMLD using Watson's (2015) descriptions of playfulness. It then highlighted the concepts that the Musical Play Framework is based on. This included intensive interaction (Nind and Hewett, 2001) responsive environments, as discussed by Ware (2003) and the Adult Interactive Style (Kossyvaki, 2017). The eight principles of the Musical Play Framework were then introduced.

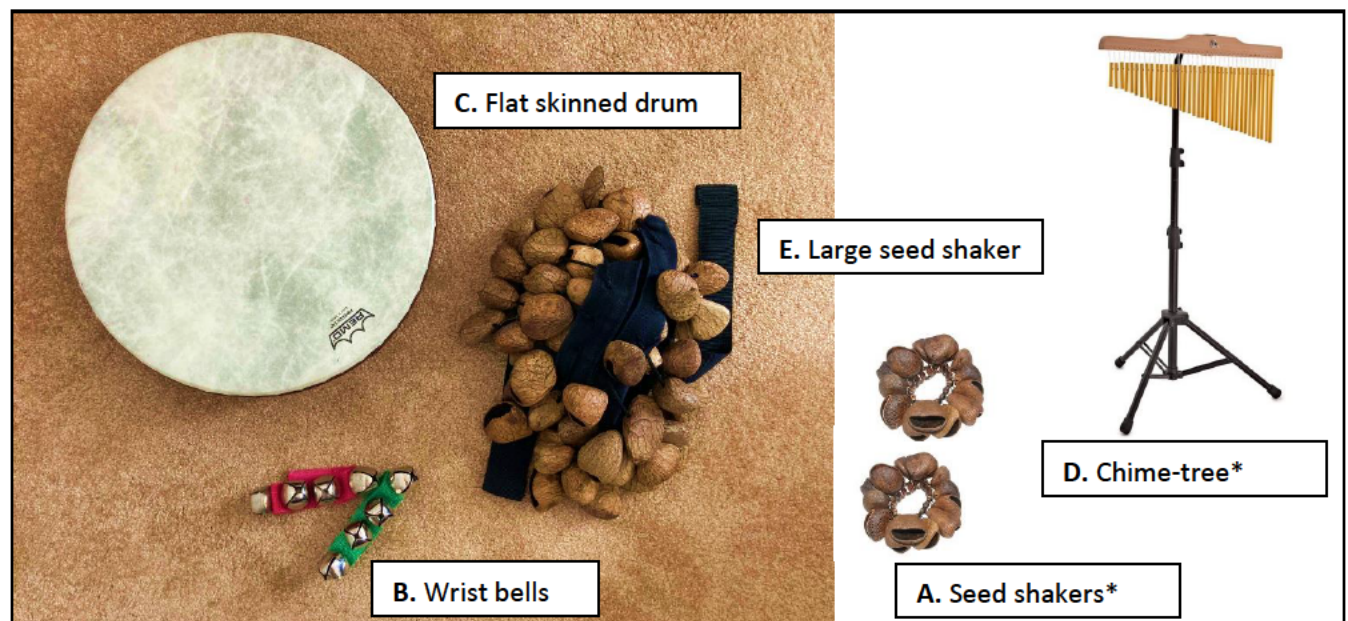
The session concluded by staff using the instruments, described in the equipment below, and working in pairs to deliver short Musical Play sessions to each other. Finally, the researcher demonstrated a short interaction using the principles, with a volunteer staff participant. All staff were trained at the beginning of the data collection period, regardless of when, in the multiple baseline design, they started delivering the Musical Play sessions. This was due to the time limitations and availability of staff participants in both settings.

After the training process the researcher supported staff participants to set-up equipment for the Musical Play sessions during their first week of delivery. Following this initial set-up, support staff participants were asked to conduct the sessions independently. Staff participants were also responsible for setting up the video recording equipment, a camera and tripod, to collect the data during the Musical Play sessions. The number of sessions staff delivered varied due to the multiple baseline design of the study. The maximum period for delivery was ten-weeks, the minimum period was five-weeks.

Equipment

Both settings were provided with the following equipment to use in the Musical Play sessions: i. an electronic tablet with a music playlist, ii. a Bluetooth speaker. The following instruments were also provided: a. two seed-shakers, b. two wrist bells, c. flat-skinned drum, d. chime-tree, and e. large seed shaker. The instruments were selected for their tactile interest, responsiveness, ease of use, versatility, and variety of timbre (see Figure 6 for an image of the musical instruments provided). The electronic tablet included a playlist created by the researcher (see Table 29 for the original content). The choice of music for the original playlist was influenced by the findings of Phase 1 of this study. This included tracks and artists mentioned in the results of the online survey, as well as tracks influenced by the findings of the experimental listening experience.

Figure 6: Equipment provided for the Musical Play sessions



**Image source: A. Seed shakers (Sound Travels, n.d). D. Chime-tree (Amazon, n.d).*

Staff were informed that they could add additional instrumental music to the playlist if they thought it may enhance the playful environment for either themselves or the participants with

PMLD. They could also remove music if they felt it was impacting negatively on the sessions. Staff could also add or remove musical instruments used in the session using the same reasoning. The opportunity for staff to vary the musical stimuli used in the sessions aimed to allow for personalisation of the Musical Play Framework for individual participants. This process was intended to acknowledge the individual musical and instrumental preferences of students and staff. The opportunity for variation also aimed to reduce the hierarchical imbalance between researcher and participants.

Location

The sessions were designed to take place in a dedicated space. This was to reduce classroom distractions, external noise pollution and maximise the potential levels of engagement, impact, and responsiveness of the students. In Setting 1 all sessions took place in the Music Room (see Figure 7) or Therapy Room, which was smaller than the Music Room, but still with minimal visual distractions. In Setting 2 most sessions were delivered in the common room (see Figure 8) or an empty classroom (see Figure 9). Some sessions (n=5) were delivered in the usual classroom environment, which was not empty, due to a lack of available rooms.

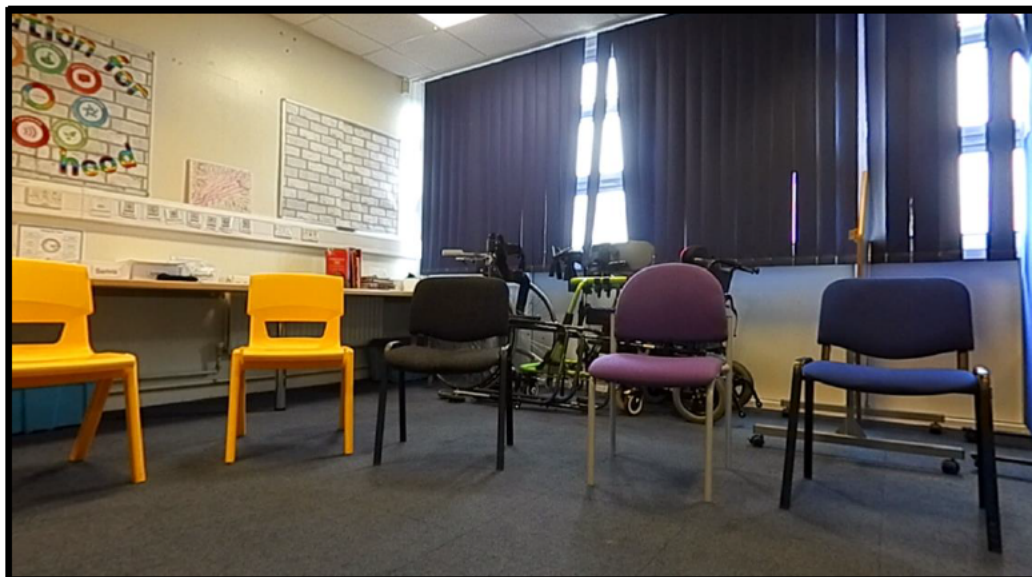
Figure 7: Setting 1; Music Room



Figure 8: Setting 2; Common Room



Figure 9: Setting 2; Empty Classroom



Frequency and duration

Musical Play sessions were delivered twice weekly. This was felt to be a practical and manageable frequency for staff in school settings and is in line with previous studies of similar nature (Rushton et al., 2023a). The duration of the sessions ranged between 14 and 34 minutes. In Setting 1 the average session lasted 17 minutes. In Setting 2 the average Musical Play session lasted 26 minutes. The multiple baseline design meant that the number of Musical Play sessions each participant with PMLD accessed varied. Attendance, alertness, wellbeing, and staffing levels also impacted on the number of Musical Play sessions participants took part in. Most participants (10 out of 12) took part in a minimum of six Musical Play sessions. The maximum number of sessions participants took part in was fourteen and the minimum was six. This is except for two participants in Setting 1 who, after the period of baselining, took part in none (n=1) or two (n=1) of the Musical Play sessions. All sessions were video recorded.

Video recording

Sessions were video recorded using a single video camera. A wide angled lens was used to record both participants with PMLD simultaneously. As a result of their profound intellectual disability, it was thought that participants with PMLD would not be aware of the video camera. It was assumed that their behaviours and responses would not be influenced by the presence of the recording equipment. However, on most occasions the participants were verbally informed they were being recorded, this was done with the intention of ethical consideration and respect for the participants. Staff participants were all aware of the video camera. Awareness of the camera may have influenced staff participant behaviour (Cohen et al., 2018), which in turn could have had an impact on the participants with PMLD. However, no data on staff participants was generated from the video recording.

The camera was positioned facing both participants with PMLD. Most participants were non-ambulant and used wheelchairs, meaning the positioning of participants remained consistent throughout the recording, and so a single static camera was thought to be suitable. However, the positioning of the camera meant that the back of the play-partner (staff participant) was often recorded. Further, the play-partner (staff participant) occasionally obscured the view of

the participants with PMLD in the recording. This is a limitation of using static recording equipment.

Using video recording to generate data with people with PMLD allowed the subtleties of their communicative behaviours to be captured. Video recording, or direct behaviour observation, is a common method used when researching people with PMLD (Maes et al., 2021). The multi-modal method of data collection provided an opportunity for footage to be revisited numerous times by the researcher. This may have facilitated a greater acknowledgment of fleeting, subtle and idiosyncratic communication methods (Jewitt, 2012). Video recording, as opposed to direct observations, also enabled the researcher to code the footage, and provided the opportunity for inter-coder discussion and reliability (Maes et al., 2021).

4.4.5 Coding

When coding the video footage to generate data various decisions needed to be made. The level of structure within the coding system, the type of coding to use and the duration of video to code, all effect the data that will be generated. Approaches to coding range from unstructured inductive coding, in which the coder notes observations with no defined categories, to highly structured deductive coding, recording observable events or behaviours using a pre-determined checklist (Bell, 2010). This section describes how the Social Play Record Assessment (White, 2006) was adapted and combined with previous descriptions of playfulness (Watson, 2014) to develop a coding instrument for this study. The coding procedures are then described and justified, and the process and role of inter-rater reliability is discussed.

Coding system

Video footage was coded using an adapted version of the Social Play Record Assessment (SPRA) (White, 2006) (see Tables 16, 17 and 18 for a blank copy of the adapted SPRA). The SPRA was adapted to include descriptions of the communicative expressions of people with PMLD. For example, 'Shows: points or brings objects to show' (White, 2006, 32) was developed to 'initiates physical interaction- reaching/grabbing towards an object or person'. This adaptation encompassed the desire to communicate and share ('show') and removed the 'bring', as most

participants were non-ambulant, and ‘point’ as this is not a typically established method of communication for people with PMLD. The SPRA was combined with findings from Watson’s (2014) earlier research into the playfulness of people with PMLD. The SPRA, originally developed for use with autistic children (White, 2006), identifies and examines the stages and characteristics of play in both adult supported and peer-play relationships. Early Social Play characteristics, which included reactive, reciprocal and peer-play were adapted from the SPRA to reflect the communicative abilities of the participants with PMLD. These sections of the SPRA were pragmatically selected as they also supported the research aims of the study. The adapted SPRA was to be used in combination with the *Descriptions of potential expressions of playfulness* (see Table 15) developed from Passports to Play (Watson, 2014) and findings from the responses to the online survey in Phase 1 of the study. Although this description was not meant to be an exhaustive list it acted as a guide for the coders.

Table 15: Descriptions of potential expressions of playfulness

The signs of playfulness will be very individual to each child or young person but may be:

-
- **physical** – *subtle changes in facial expression, stilling, increased movement of body and eyes, finger flexing, relaxing, flapping, clapping, postural change*
 - **emotional** – *open-wide eye gaze, smiling, laughing, raised eyebrows, open mouth, tongue out, increased expressive vocalisation, happy sounds*
 - **social** – *moving nearer, reaching out, increased eye contact, leaning towards, touching*
-

Adapted from Watson (2014) The Passports to Play and responses to the Phase 1 online survey

Table 16: Potential expressions of playfulness checklist; Reactive Play

Reactive Play with an adult partner: The individual with PMLD reacts with an adult play partner in <i>what is perceived to be a playful or positive manner</i> to an adult during an activity.	Occurrence (1= occurrence, 0= non-occurrence) 10 minutes (30-second intervals) 																	
A. Responds to adult presence, touch, or sound.																		
B. Looks at and/or shows awareness of objects offered.																		
C. Shows enjoyment in social/anticipation games, e.g., tickles/peek-a-boo.																		

Table 17: Potential expressions of playfulness checklist; Reciprocal Play

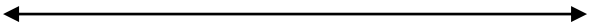
Reciprocal Play with an adult partner * The individual with PMLD takes a more active part in the play activity with the adult play-partner. Joint activity, imitation, and turn-taking, <i>in what is perceived to be a playful or positive manner,</i> begins to emerge.	Occurrence (1= occurrence, 0= non-occurrence) 10 minutes (30-second intervals) 																			
A. Initiates physical interaction- reaching/grabbing towards an object or person.																				
B. Initiates or responds vocally to interaction.																				
C. Shares, partakes in shared attention of an object or person.																				
D. Turn-takes in partner games- e.g., hitting the drum/vocalising in an exchange with the play-partner, involving at least two rounds of turn taking.																				

Table 18: Potential expressions of playfulness checklist; Peer-play

Peer Play: The individual with PMLD reacts or interacts with a peer, <i>in what is perceived to be a playful or positive manner</i>, during the play activity.	Occurrence (1= occurrence, 0= non-occurrence) 10 minutes (30-second intervals) 																			
A. Observer Play: Peer Awareness <i>Shows awareness through turning, moving, or attending towards peer, and/or gives attention to a shared play object/s between peer and self.</i>																				
B. Parallel Play <i>Displays playful responses to a shared play activity alongside, and with awareness of peer, but without making contact or connection vocally or physically.</i>																				
C. Associative Play <i>Responds positively to peer presence, making contact through vocal and/or physical interchanges, and/or shows awareness of connection to peer through use of the shared play object/s.</i>																				

Ten-minutes of continuous footage from the middle of each Musical Play session was coded using 30-second partial interval recording. The researcher decided that selecting footage from the middle of each session may have enabled participants to transition into the Musical Play

activity and location from their previous activity. This aimed to capture a truer reflection of the behaviours displayed by participants with PMLD during the Musical Play activity, as opposed to any transitional period of adjustment. It also avoided the end of the session when participants may have been tired or lost interest. Previous studies, which have coded behavioural responses of participants, have coded various segment lengths of raw video footage. Ten-minutes of footage was felt to be a practical and manageable duration and it has also been used in previous similar studies (i.e., Kossyvaki and Curran, 2020).

Using partial interval recording the first occurrence of the potential expression of playfulness in each interval was recorded (occurrence=1), subsequent occurrences were not recorded. This contrasts with whole interval recording, where the coded behaviour should occur for the whole duration of the interval (Lane and Ledford, 2014), or frequency coding, in which the number of times the behaviour is present in each interval is recorded. Whole interval coding requires the observable behaviour to occur for the duration of the whole interval. Since people with PMLD have complex medical needs, and the research took place in a real-world setting there were often numerous internal and external distractions, including medical procedures, positioning etc., which may have interrupted a potentially playful interaction or expression. Whilst frequency coding may have provided greater detail of the overall frequency in which playful behaviours were displayed, the subtle, and often fleeting communications of people with PMLD, make it very difficult to accurately code in this way.

Partial interval recording was selected as the communications and expressions of people with PMLD may often be fleeting or momentary (Ware, 2004). An interval length of 30-seconds was decided. This was the upper range of the interval length used in previous educational studies (Kossyvaki and Curran, 2020; Lane and Ledford, 2014). A longer interval length was selected as the responses of people with PMLD are often slower and may be delayed (McCormack, 2020). In an attempt to capture both the stimuli (adult or peer behaviour) and the response of the participant with PMLD longer interval lengths were used in coding. Furthermore, there were numerous videos to code (n=166), and so pragmatic choices, which reflected the time-heavy demands of coding also influenced this decision.

Each ten-minute section of video was viewed three times, using the software programme V-Note (V-Note, n.d), and coded for potential expressions of playfulness in; (1) reactive play, (2) reciprocal play and (3) peer-play. Potential expressions of playfulness by participants with PMLD were coded using an occurrence= 1 or non-occurrence=0 score for each 30-second interval coded.

Fidelity

In order to monitor the fidelity of the intervention, that is, the amount to which the staff followed the Musical Play principles and accurately implemented the intervention as it was intended, staff were asked to complete checklists before and after each session. Monitoring implementation is necessary to increased understanding of the degree to which the effects of an intervention can be attributed to the intervention itself (Swanson et al., 2013). Two methods were used to monitor the fidelity of the implementation. Staff were asked to complete a self-evaluation checklist before and after each session (see Appendix 6 for a blank copy of this). Before the intervention, staff were asked to indicate that the environment was prepared (the first Musical Play principle), in that there was no external noise pollution, lighting was appropriate, and playful instrumental music was playing. This checklist also collected information on how often staff felt they used each of the Musical Play Principles, on a scale of 0-3 (never- often), and how confident they were in using these, on a scale of 0-3 (not at all confident- confident). Furthermore, it acted as a reminder for staff of the eight principles included in the Framework.

In addition to this the researcher created an observer fidelity checklist (see Appendix 7 for a blank copy of it) in which the quality of the delivery of the Musical Play principles was considered, as well as the suitability of the environment, and the frequency and competency in which staff implemented the principles. It is generally agreed that interventions which have >80% adherence constitute high fidelity (Feagans Gould et al., 2016).

To assess the fidelity of the implementation of the Musical Play Framework 10% of the total number of intervention sessions for each setting were coded using the Observer Fidelity Checklist (see Appendix 7 for a blank copy of the observer fidelity checklist). A total of 10

videos, four videos from Setting 1, approximately 71 minutes of footage, and six videos from Setting 2, approximately 148 minutes of footage, randomly selected using a number generator, were reviewed using the fidelity checklist. This percentage was chosen as it was a realistic number of videos for the researcher to code within the timeframe of this project.

Videos were coded using the following categories:

1. Pre-session environmental conditions (n=7), of which there was either an occurrence=1 or a non-occurrence=0. Maximum possible score n=7.
2. Quality indicators (n=9), with a score of between 1-3 (3 being high quality). Maximum possible score n=27.

Table 19: Adherence to pre-session environmental conditions and quality indicators

	Setting 1	Setting 2
Pre-session environmental conditions	93% adherence	93% adherence
Quality indicators	81% quality	83% quality

The adherence to pre-session environmental conditions was 93% in both Setting 1 and Setting 2. This indicates that the environments were well prepared in accordance with the principles of the Musical Play intervention. The quality indicator score for Setting 1 was 81% and for Setting 2 was 83%, suggesting that the fidelity of the implementation of the intervention in both settings was high (Feagans Gould et al., 2016). Findings suggest that the quality of implementation was slightly higher in Setting 2 than in Setting 1 based on the reviewed intervention sessions.

The frequency in which staff participants used the Musical Play principles: (i.) observe, (ii.) participate, (iii.) extend, (iv.) model and (v.) motivate, and their competency in each of these principles were also reviewed. Frequency was scored 0-3 (not at all-frequently) and

competence was scored 0-3 (no evidence- appropriately and confidently). Frequency and competency varied across the reviewed videos.

Inter-observer reliability

Using video recording to generate data creates the opportunity for multiple observers to view and code footage. In coding footage human error and bias influences results, multiple coders are used to reduce these inaccuracies. Comparisons can then be made between the findings of multiple observers. Although not absolute, if agreement between multiple coders is high (>80%) the reliability of findings may increase (Reichow et al., 2008).

Approximately twenty percent of a total of 166 videos were coded by secondary coders. Thirty-two videos were coded, two videos were removed as data on this participant was removed from the results of the study due to the low number of intervention sessions (n=2) that the participant took part in. A total of 30 videos were included in the inter-rater reliability, 17 videos were coded by inter-coder 1, a total of 13 videos were coded by inter-coder 2 (see Appendix 10 for the full scores). It was necessary to use two secondary coders due to the time-demands of the role. The secondary coders were trained by the researcher to use the coding tool, the codes and descriptors were discussed and explained. When coding or interpreting video footage the observer may need expertise and experience of the population being observed (Cohen et al., 2018). If the observer is not familiar with the population or activity then behaviours, responses and actions may be overlooked (Schindler, 2009). This was felt to be the case when coding video footage of participants with PMLD whose responses may be subtle, fleeting, and idiosyncratic (Watson, 2020). For this reason, it was important that the secondary coders had experience of people with PMLD, both coders were teachers and researchers of people with PMLD. The first inter-coder was a classroom teacher of people with PMLD and doctoral student also researching young people with PMLD. The second inter-coder was a classroom teacher of people with PMLD and had also completed masters level study in relation to people with PMLD.

The coders followed the same coding schedule as the researcher. Each ten-minute section of video was viewed three times and coded, using the same V-Note software, for potential

expressions of playfulness in: (1) reactive play (3 categories), (2) reciprocal play (4 categories) and (3) peer-play (3 categories). Potential expressions of playfulness by participants with PMLD were coded using an occurrence= 1 or non-occurrence=0 score for each 30-second interval coded.

A total score of 20 was possible for each category. The total for each category (A, B, C or D) of each session (baseline or Musical Play session) was used to calculate the inter-observer reliability, for example, researcher total for *Reactive A: responds to adult presence*= 14, inter-rater total for *Reactive A: responds to adult presence*= 17. Inter-observer reliability was calculated using the following methods.

Frequency was separated into; *infrequent* (behaviour observed in 0-6 intervals), *sometimes* (behaviour observed in 7-13 intervals) and *often* (behaviour observed in 14-20 intervals). Where the frequency of both the researcher and the secondary coder fell within the same range (i.e., researcher total for *Reactive A: responds to adult presence*= 14, inter-rater total for *Reactive A: responds to adult presence*= 17, both of these fall within *often* (14-20)) an agreement was recorded. The following formula was used to calculate the degree of agreement; number of times two observers agreed divided by the sum of both agreements and disagreements, then multiplied by 100. Although a high percentage of agreement (>80%) was desirable (Reichow et al., 2008), the inter-observer agreement for this study was 73% (see Table 20 for a detailed description). It is likely that a higher percentage of agreement was not reached due to the idiosyncratic means of communication that people with PMLD use (Ware, 2012). Furthermore, a higher rate of inter-observer agreement may have been reached if there had been the opportunity for both coders discuss the footage and any discrepancies, however this was not possible due to time and resource limitations.

Table 20: Inter-observer agreement

<i>Inter-rater 1 (17 videos)</i>		<i>Inter-rater 2 (13 videos)</i>	
Setting 1 (9 videos)	IOA 73%	Setting 1 (4 videos) 74%	
Setting 2 (8 videos)	IOA 78%	Setting 2 (9 videos) 64%	
Total IOA	77%	Total IOA	67%
Overall Inter-observer agreement 73%			

4.4.6 Data Collection methods: Research Question 3

Focus-group interviews were used to best answer the third research question for the main phase of this study; how does the use of Musical Play affect the attitudes of teaching-staff towards play for students with PMLD?

Staff focus-group interviews

Further to the video data generated with participants with PMLD, staff from each setting took part in three focus-group interviews. These focus-groups are described in the table below (see Table 21). Data was collected from staff over a period of seven-months. The purpose of these focus-group interviews was to gain better insight into the practicalities of implementing the Musical Play sessions, along with gathering data to understand staff experiences and attitudes towards music and play. This section describes the content, and practicalities of conducting focus-group interviews in educational research and the analysis methods adopted (see Appendix 8 for a copy of the interview schedules).

Table 21: Staff focus-group timeline

Focus-group interview	Purpose	Timeline
Focus-group 1	Collect current views/ understanding/practice	Dec. 2021- Jan. 2022 Pre-Musical Play sessions and training.
Focus-group 2	Evaluate Musical Play sessions	April 2022 Directly post-Musical Play sessions
Focus group 3	Reflect on longevity of impact	July 2022 Follow up: 3 months post-Musical Play

Focus-group interviews were used as a time efficient way to collect the perceptions, feelings, and viewpoints of staff participants (Cohen et al., 2018). Focus-groups were used to reduce the hierarchical imbalance between the researcher and participants and provide a more natural environment to gather the viewpoints of staff participants. Within effective focus-group interviews the researcher undertakes a less dominating role and focus is placed on the participant responses and discussions (Bell, 2010), with the researcher asking open-ended questions to guide the discussion. The researcher aimed to facilitate a comfortable and non-judgemental environment. Focus-group interviews were preferred over one-to-one interviews as they were felt to be a more practical and pragmatic way to collect data. Although one-to-one interviews may have facilitated a more confidential environment and allowed the equal opportunity for each participant to express their individual viewpoint (Cohen et al., 2018), it was felt that the focus-group interviews would support and encourage an interchange of ideas. This had the potential to create an environment for broader discussion. The educational setting of the research also meant focus-group interviews were more suitable than one-to-one interviews. Group interviews, at times convenient to the gatekeepers and participants, cause least disruption to the settings and have minimal imposition on the participants already hectic and stretched time and responsibilities.

In Setting 1 the focus-group interviews were scheduled after-school in class preparation time. Staff from Setting 1 were not required to use any personal time to be part of the focus-group interviews. In Setting 2 the focus-group interviews were scheduled during the lunch-hour, this was decided as participants had childcare commitments. Staff participants used their personal break times to take part in the focus-group interviews. Focus-group interviews were designed to last no longer than one-hour in consideration of the participants' time.

Staff participants who implemented the Musical Play sessions took part in three focus-group interviews. The average length of the focus-group interviews in both settings was 41 minutes, the shortest time was 37 minutes and the longest time 46 minutes (see Table 22 below). These interviews took place pre-intervention, post-intervention and at follow-up (three months after the intervention study had ended). A timetable of the focus-group interviews, staff participant intervention training, and intervention period is presented below (see Table 22). The timetable was created pragmatically based on the academic year in England, which runs from September to July, in three terms of approximately 12-weeks: September to December, January to April, April to July.

Table 22: Timetable of staff participation in the two settings

Participation	Setting 1	Duration (approx. mins)	Setting 2	Duration (approx. mins)
Focus-group interview 1	January 2022	45 mins	December 2021	37 mins
<i>Intervention training</i>	<i>January 2022</i>	<i>60 mins</i>	<i>January 2022</i>	<i>80 mins</i>
<i>Intervention</i>	<i>January-April 2022</i>	<i>N/A</i>	<i>Jan-April 2022</i>	<i>N/A</i>
Focus-group interview 2	April 2022	46 mins	April 2022	40 mins
Focus-group interview 3	July 2022	45 mins	July 2022	34 mins

The focus-group interviews were semi-structured and the same interview schedules were followed in both settings (see Appendix 8 for a copy of the interview schedules). A description

of the staff participants who took part in the focus-group interviews can be found in Table 10 and Table 12.

Coding

The focus-group interviews were audio recorded and later transcribed word by word. Transcriptions were thematically analysed using the software programme N-Vivo Version 12 (N-Vivo, n.d). The transcriptions were abductively analysed (Timmermans and Tavory, 2012). Abductive analysis uses both deductive and inductive methods of analysis to generate themes from the data. Using deductive analysis, the researcher first approached the focus-group transcripts with pre-conceived themes, derived from the literature, which aligned with the research aims of the study. Whilst undertaking this process the researcher remained open to emergent novel themes within the data, an approach often associated with inductive analysis. The method of abductive analysis acknowledges that although data should be analysed with a broad knowledge of theory, the researcher should be open to novel themes and concepts. Abductive analysis was most appropriate for the study as it recognised the previous knowledge and experience of the researcher, which influenced the process, but also provided opportunities for further explanation and discovery. This pragmatic method of analysis allowed the researcher to code the data for themes that best answered the research question, whilst also facilitating the opportunity for topics which were significant to the participants to be captured.

4.4.7 Phase 2: Ethical Considerations

Within any research there is the power imbalance between the researcher and the researched, which is perhaps further exacerbated when researching people with PMLD (Watson, 2020). There were numerous ethical considerations when designing and conducting this study due to the vulnerabilities of the participants with PMLD, who do not have the capacity to provide informed consent (Mental Capacity Act, 2005).

Ethical considerations for Phase 2 of the study involved three groups of participants: i. vulnerable children with PMLD, under the age of 16, for whom parental consent should be

sought (BERA, 2018), ii. vulnerable adults with PMLD who do not have the capacity to consent (Mental Capacity Act, 2005) and iii. teaching staff, adults with the capacity to consent.

Consent

Voluntary informed consent was sought from supporting school staff through written consent forms (see Appendix 11). Gaining freely informed consent requires potential participants to have sufficient information about the research, adequate time to make an informed decision and the opportunity to ask further questions, all without coercion or pressure (UK Research and Innovation, n.d). An ongoing right to withdraw from the study was also highlighted to school staff participants.

Consent for participants with PMLD was obtained by proxy. For participants under the age of 16 (setting 1) their parent/primary carer consented for them to be involved in the study. Parental consent is an established medium in which children (under the age of 16 years) can be included in research (BERA, 2018). For participants over the age of 16 years (setting 2) consultees were sought. The role of the consultee is to advise whether an individual who lacks the capacity to consent should take part in the research and what their feelings or wishes towards participation might be (Health Research Authority, 2022). The college setting identified appropriate consultees; in all cases this was the parent/guardian of the participant with PMLD.

Ongoing consent

Due to the profound intellectual disability of people with PMLD it was felt that gaining informed consent (Mental Capacity Act, 2005) from the participants with PMLD was not possible. Relaying abstract concepts of the Musical Play sessions would have been a tokenistic process. Instead, ongoing consent was sought throughout the study. Ongoing consent is the process in which the researcher and/or supporting staff, and/or the parent, guardian or consultee continually assess participants' behaviours and responses in relation to the task or situation (Cameron and Murphy, 2007). Changes in behaviours or responses can be recognised as a participant's expression to withdraw from the study. Those observing these behaviours can then advocate for the participant to be withdrawn from the study where they may not have the

ability to explicitly do so themselves. Ongoing consent is used to preserve participants' rights to withdraw from a study, and for participants to have an active choice to remain involved in the research process (Bourke and Loveridge, 2014). It was important therefore that the researcher and those involved in implementing the Musical Play sessions prioritised the participants' right to withdraw and remained alert to this being expressed through changes in participant body language, disposition, or behaviours (Bourke and Loveridge, 2014). The process of ongoing consent was outlined in the participant information letters.

Participants with PMLD may have shown signs of unhappiness, distress, or other behaviours which were not typical for the individual, because of the disruption to routine experienced from involvement within the sessions, or because of the session content. If these behaviours were to occur during a Musical Play session participants would be withdrawn from the session immediately. If participants had showed any signs of unhappiness/distress because of involvement within the study on more than one occasion, they would have been withdrawn from the study. As highlighted within the process of ongoing consent, withdrawal from the study could be suggested by the researcher, supporting school staff, parent, guardian, or consultee. Participants who were not at the point of arousal or who were asleep, where ongoing consent could not be obtained, did not attend the Musical Play session.

Confidentiality

Confidentiality and anonymity of participants and their data is considered a standard principle of research design and ethical consideration (BERA, 2018). To ensure participant confidentiality both settings, and individuals were given pseudonym names. Pseudonym names may be seen as a removal of ownership of the data from the participants. To limit this, all the staff participants were asked to choose their own pseudonym names. It was not possible for people with PMLD to provide a pseudo name due to their profound intellectual disability.

All potential identifying information participants provided, such as in the focus-group interviews, which could result in a breach of confidentiality were anonymised (UK Data Service, n.d). The importance of confidentiality within the focus-group interviews was highlighted, however due to the nature of the group interview process, this could not be guaranteed. The

researcher remained alert to the possible consequences to participants of a breach of confidentiality during these periods of data collection (BERA, 2018). Further consideration was given to participants with PMLD, who were likely to have distinct and often rare individual characteristics, which if presented as a complete set, i.e., gender, age, location, description of disability may have compromised confidentiality.

Video data collection

Collecting, storing, and transferring video data of participants posed ethical dilemmas surrounding participant confidentiality, participant rights, and misuse of the video footage (Jewitt, 2012). All participants were given a video consent form alongside the participant information and consent forms. Video data collected in both educational settings was securely stored on-site. In Setting 1 cameras were securely stored in the Music Room. In Setting 2, cameras were assigned to staff participants and stored securely in their classroom. The researcher visited each site at least once each week to securely transfer the video footage to BEAR storage, a secure and integrated research data store, provided by the University of Birmingham. Participant information data was stored separately to the video footage. This was to ensure that no personal or sensitive information could be linked to the individual participants in the recordings.

Concerns of participation

As with all research there was likely to be an impact on individuals who participated (UKRI, n.d). It was the responsibility of the researcher to identify and reduce any detrimental impact that participants may have experienced. Through participating in the Musical Play sessions staff participants may have experienced some psychological effects. Staff may have felt pressure from the additional time required to partake in the study, training, and focus-group interviews and a sense of researcher intrusion into their usual work setting. The researcher aimed to reduce these effects by the considerate timings of the research, training, and interview process. Where possible these were included within the typical working patterns of staff participants.

Further, staff may have felt pressured into giving ‘the right’ answer during the focus-group interviews. The researcher worked to promote an inclusive and supportive environment for staff participants and highlight the confidential nature of the focus-group interviews. To support staff participants during the Musical Play delivery regular email contact with the researcher was encouraged. Additionally, the researcher visited the settings on a weekly basis during the period of the Musical Play sessions to answer any questions or concerns that staff participants may have. Staff were reminded of their rights to withdraw from the research throughout the study and assured that withdrawal would have no implications on the professional role or appraisal.

4.5 Summary

There are numerous methodological and ethical considerations to navigate when designing and researching with people with PMLD (Hutchinson and Bodicoat, 2015). Researchers are concerned with designing ethically sound research for a population who cannot provide informed consent. This chapter aimed to outline the ethical and conceptual considerations when researching with people with PMLD. The decisions described within this research design have been made for both ethical and pragmatic reasons. Wherever possible the research has been designed with the aim to reduce researcher hierarchy. The two-phased design aimed to include people with PMLD in the development of the Musical Play Framework introduced during Phase 2 of the study.

The chapter outlined the methods used in Phase 1 and Phase 2 of this research. The first phase of the study used participatory design with proxies’ method. An online questionnaire and an exploratory listening experience (adapted from Sue and Ritter, 2012) consulted with people with PMLD and their parent/carer and collected information on the musical preferences of people with PMLD in order to develop the musical content used in the Musical Play Framework. The second phase used mixed methods to best answer three research questions. Video footage was collected of participants with PMLD, and a multiple baseline design was used to generate data on the impact of the Musical Play sessions. Focus-group interviews were undertaken with staff participants to better understand the impact of the intervention on staff attitudes and

confidence. Pragmatic decisions were made regarding the coding and analysis of the data. Video footage was coded using an adapted version of the Social Play Record (White, 2006). Qualitative data from the focus-group interviews was thematically analysed using abductive analysis, which considers the aims of the research questions when approaching the data and generating themes, whilst also allowing space for new or novel themes to be identified.

There are several limitations to the research design described within this chapter. Considering Phase 1 of the research, it may be viewed as reductionist to document the behaviours of people with PMLD with little consideration of internal or situational influence. Further the validity and reliability of proxy reporting may be debated. However, if acknowledgement and value is not given to this behavioural communication then there is a real risk that the expressions of people with PMLD will be missing from research all together, further isolating an already marginalised population. This chapter aimed to present ways in which research can be conducted with people with PMLD which values and recognises their individual methods of expression, whilst also highlighting the level of interpretation which is present when working with this population. The following chapter presents the findings for Phase 1 of the study.

5. RESULTS: PHASE 1

CONSULTATION OF THE MUSICAL PREFERENCES OF PEOPLE WITH PMLD

5. Introduction

This chapter presents the findings from Phase 1, the preliminary phase, of the study. The main aims of this phase of the study were to: (i.) consult with people with PMLD and their parent/carers, (ii.) reduce researcher hierarchy and (iii.) develop an awareness of the responses of people with PMLD to differing musical elements contained in prerecorded instrumental music. The findings are first presented and then discussed in the context of previous research and the wider literature. The findings from Phase 1 of the study, a consultation of the musical preferences of children and young people with PMLD (also published in Rushton et al., 2023b), influenced the musical content provided to staff implementing the Musical Play sessions in Phase 2 of the study. The final part of this chapter considers the influence of the findings from Phase 1 on the musical playlist provide for staff.

Phase 1 of the study used a participatory design with proxies' method and an online exploratory listening experience questionnaire (adapted from Sue and Ritter, 2012) to collect data. Fifty respondents accessed the questionnaire and a total of 26 respondents (52%) completed over 70% of the questionnaire. Any questionnaire with over 70% of the questions completed is included in the findings presented below, as these partial completions were felt to include valuable data (Lavrakas, 2008). Only fifteen respondents filled in section 3 of the online survey, the exploratory listening experience, of these, two respondents only completed information on Track 1. A total of thirteen surveys were fully completed.

As previously mentioned in the methodology chapter of this thesis, Phase 1 of the study aimed to answer the following research question.

- How do people with PMLD respond and engage with the varying characteristics of pre-recorded music?

The online questionnaire consisted of three parts: i. demographic data, ii. previous parent/carer knowledge and observations, and iii. the exploratory listening experience (see Appendix 1 for a blank copy of the questionnaire). Quantitative and qualitative data was generated from the survey. Quantitative data was visually inspected using Excel. Qualitative data was coded using thematic analysis (Braun and Clarke, 2022). Demographic information for the 26 people with PMLD whose parent/carer completed at least 70% of the questionnaire, including information on the 13 people with PMLD who took part in the exploratory listening experience, is presented in Table 23 below.

Table 23: Demographic information for participants with PMLD

	Sex		Age (years)			Ethnicity		
	Male	Female	5-10	11-16	17-25	White British	Black Caribbean and white	Any other Asian background
All participants whose parent/carer completed > 70% questionnaire	n=13	n=13	n=7	n=13	n=6	n=23	n=2	n=1
Participants who completed the entire exploratory listening survey (all 4 tracks)	n=6	n=7	n=4	n=6	n=3	n=10	n=2	n=1

5.1. Parental perspectives

Information on the previous musical experiences of the participants with PMLD was collected from parents/carers in section 2 of the survey. Parents/carers were asked what music their child/young person liked to listen to when they were '*in a good mood*' or '*in a calm mood*'. This section of the survey produced qualitative data which was thematically analysed.

Table 24: Preferred type of music to listen to when in a *good* mood: parental perspective

Theme	Keywords
Pop music	<i>'pop' 'pop songs' 'Little Mix'</i>
Upbeat	<i>'upbeat' 'loud' 'loud beat' 'fast' 'fast tempo'</i>
Nursery Rhymes	<i>'Nursery rhymes' 'children's rhymes'</i>

Table 25: Preferred type of music to listen to when in a *calm* mood: parental perspective.

Theme	Keywords
Classical Music	<i>'classical' 'classical instruments'</i>
Gentle music	<i>'quiet' 'slow' 'gentle' 'mellow'</i>
Soundscapes	<i>'sea music' 'massage music' 'nature sounds'</i>

Parents/carers were also asked if their child/young person had a favourite song/piece of music to listen to.

Table 26: All-time favourite song/piece of music of person with PMLD: parental perspective.

Theme	Keywords
No specific favourite	<i>'changes' 'varies' 'none' 'no distinct'</i>
TV or film music	<i>'Frozen' 'Strictly come dancing' 'In the Night Garden'</i>
Nursery Rhymes	<i>'Row row' 'Horsey horsey'</i>

Data from parents/carers suggested that children and young people with PMLD liked to listen to pop music when they were in a good mood. Parents/carers identified specific characteristics within the music that their child/young person liked to listen to when they were in a good mood, such as a '*fast tempo*' and '*loud*' volume (see Table 24). This contrasted with the type and style of music parents/carers reported their child/young person liked to listen to when they were feeling calm. Parents/carers suggested that '*classical music*', or music which was '*quiet*', '*slow*' or '*gentle*' was preferred by their child/young person when they were in a calm mood. Additionally, parents/carers suggested that their child/young person liked to listen to soundscapes when they were feeling calm (see Table 25).

Nursery rhymes were also noted to be the preferred music to listen to when the person with PMLD was in a good mood. Specific nursery rhymes were named as all-time favourite songs or pieces for some of the children/young people (n=5), such as '*Row Row Row your boat*', and '*Incy Wincy Boom Box*'. When asked to suggest a particular favourite song/piece, some parents (n=4) commented that this '*varied*' or '*changed*', while others were able to suggest a specific song, these included music from TV or films (n=7), such as '*Let it Go- Frozen*' or '*theme tune from Mr Tumble*' and pop and rock songs (n=4) such as '*Slip knot (heavy metal band)*' or '*UK Hun? United Kingdolls*'. Finally, some parents said there was '*no distinct favourite*' song or '*none*' that they could identify (n=3) (see Table 26).

5.2. Exploratory listening experience

To gather the perspectives directly from people with PMLD an exploratory listening experience, consisting of four instrumental tracks was provided at the end of the questionnaire. As mentioned above, the exploratory listening experience was completed by thirteen people with PMLD, whose responses were recorded via proxies. Parents/carers were asked to describe how their child/young person responded to each of the four tracks. Both quantitative and qualitative data were produced. Parent/carers were first asked;

'Please listen to the four musical tracks together with the person with PMLD. Each track lasts around one minute. You can listen to each one as many times as you like. If the person

you are listening with is not enjoying the music, please stop, make a note of this, and move on to the next piece of music. Please answer the following questions as best you can on their behalf.'

Please describe how the person with PMLD contributing to this research responded to the music.'

Parent/carers had the option to select one of the following categories (see Table 27).

Table 27: Categories of response to the online listening experience.

<i>Positively (please describe)</i>
<i>Negatively (please describe)</i>
<i>Other (please describe)</i>
<i>I am unsure how they responded; it was not clear enough for me to describe.</i>
<i>They did not seem to respond to the music.</i>
<i>We skipped this track as the person listening was not enjoying the music.</i>

After selecting one of the above categories, there was the opportunity for parents/carers to describe this in more detail, providing qualitative data, in an open-ended text box. The results from the thirteen participants with PMLD who completed this section of the survey are presented in Figure 10 below.

Figure 10: Responses to instrumental tracks as recorded by proxy reporting.

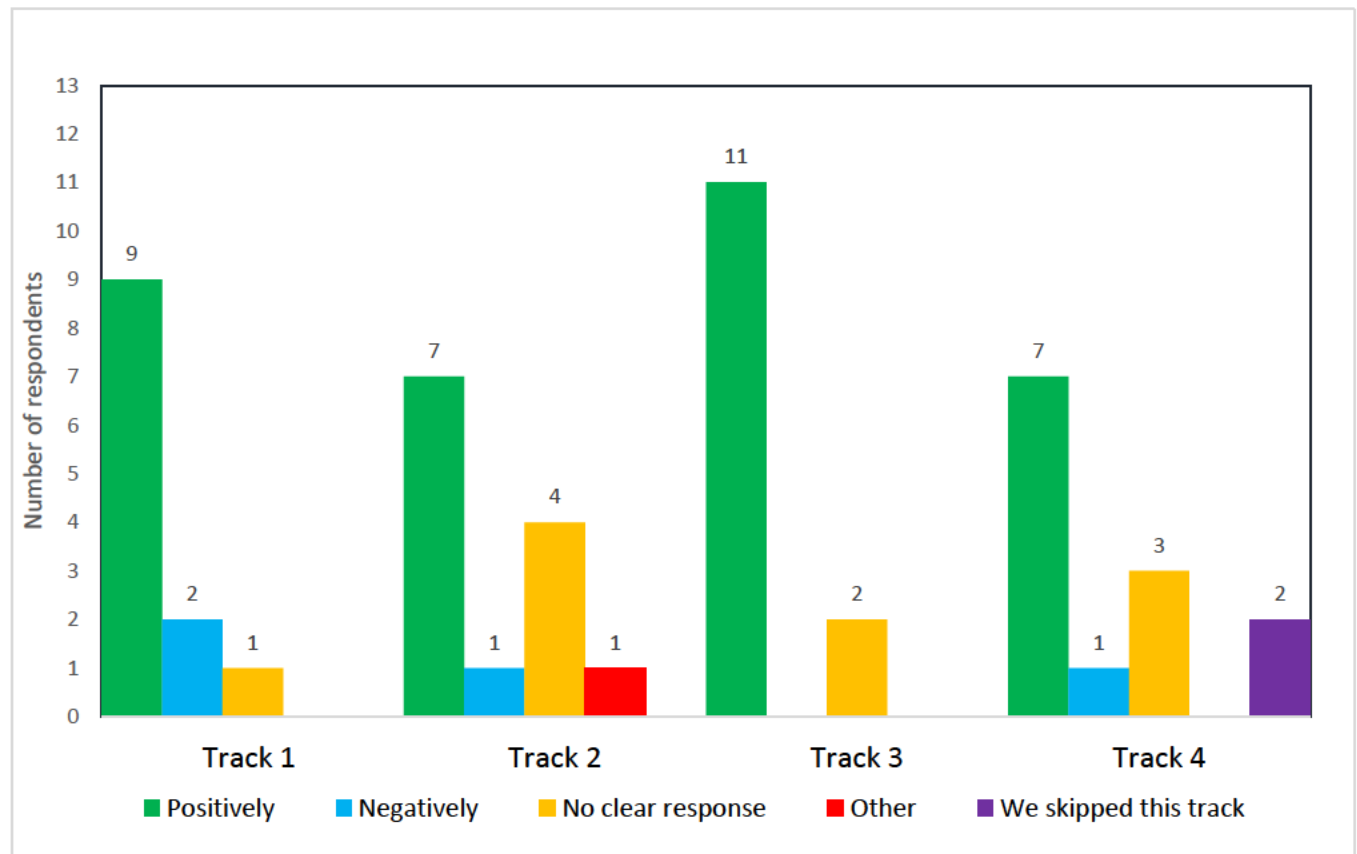


Table 28: Key themes generated for each exploratory listening track: using thematic analysis.

Track No.	Basic description of musical elements	Key themes
1	Major tonality, simple melodic line and popular I, IV, V chord progression. Marimba and brass instrumentation with shuffle rhythm.	<i>'Smiling'</i> <i>'Alert'</i>
2	Unpitched, percussion instruments, strong pulse	<i>'Smiling'</i>
3	Modal, South Asian, Bollywood style. Bells, percussion, and sitar instrumentation.	<i>'Increased movement'</i>
4	Minor tonality. Chimes, clarinet, and mark-tree instrumentation.	<i>'Calm, stilling'</i>

*Tracks can be heard using the following link: youtube.com/@musicalplayresearch

There were a range of responses to the four exploratory listening tracks. Proxies reported mixed results (see Figure 10). There were positive responses for all tracks, however, there was a greater variety of responses reported for track 2 and track 4.

Track 1 was mainly reported to have evoked positive responses (n=9) from participants with PMLD. However, one participant '*startled when music started playing*', and for another participant, it was reported that it was '*not what he wanted to listen to*'. As track 1 was the initial musical stimulus in the listening experience, it may have been that the change in auditory environment, once the parent/carer began to play the track startled the participant. If the order of the tracks had been different, this startled response may not have occurred for track 1. Randomising the order of the tracks that participants listened to in future consultations may increase understanding of the impact of this.

Track 2 was unpitched, percussive, and included a strong beat. This track did not include a melody line. Seven participants were reported to have responded positively to the track, however, four proxies reported that participants gave '*no clear response*' to the track. One proxy noted a negative response to the track. The strong beat was remarked upon in the proxy reports, with comments such as, '*liked the 'boom' beat*', and '*seemed to like the beat*'.

'She loved this! I was surprised by such an instant reaction. For the first few seconds she listened intently, then she rested her mouth, chin and then cheek on the speaker to feel the vibrations. She then started smiling and giggling out loud for the whole of the track. We played it 2 more times and had the same response.'

(Parents' description of response to track 2)

This comment from a parent proxy suggested that there was consistency in response to the musical elements of track 2. The positive communication, described as '*smiling and giggling*', of the participant with PMLD, remained the same throughout the duration of the track, and after they had listened to the track multiple times.

Track 3 gained the highest number of positive responses (n=11). This track received no negative responses and proxies commented on specific elements of the track that the participants with

PMLD responded positively to, evidenced in comments such as, *'noticed the bell sounds,'* and *'she appeared to like parts of the track especially the bells'.* Two participants requested to listen to the track multiple times, as recorded in the descriptions provided by the parent/carer proxies.

'...managed to listen to the whole piece. Also smiled at listening for the second time. Staying silent (was shouting when no music was playing). When asked if he wanted it again, he said yes (single vocalisation and smiled).'

(Parents' description of participants response to track 3)

Track 4 gained the widest range of responses. There was 'no clear response' from three of the participants. Two proxies reported that they skipped the track as the person listening was not enjoying the music, and one participant communicated a negative response to the track by *'remov[ing] hearing-aids'*. Track 4 was created in a minor modality and at a slower tempo. These musical differences were clearly identified by the participants, and when received positively elicited *'calm'*, *'contemplative'*, and *'stilling'* responses.

The following section discusses the findings from the online questionnaire and exploratory listening experience. The musical preferences of people with PMLD are first discussed in relation to the wider literature. After which the participatory methods used within this phase are considered. Finally, the ways in which the findings from this consultation phase influenced the implementation of the Musical Play sessions within the main study, phase 2, are presented.

5.3 Phase 1: Discussion

5.3.1 Musical Preferences

There is some correlation between the parental perspectives of the preferred music of individuals with PMLD, and their own responses communicated via proxy reporting. Positive responses to track 1, which was created using a 'pop' chord progression, and tracks 1 and 3, which were at a faster tempo, are the same musical characteristics described by parents/carers, in section 2 of the survey. These musical characteristics, such as *'upbeat'* and

'pop' were included in the description of the music parents/carers suggested that their child/young person liked to listen to when they were in a '*good mood*'. The similarity between the characteristics described by parents/carers (section 2) and the responses of participants during the exploratory listening experience (section 3) increases the likelihood that these findings are representative of the wider responses, and previous musical experiences of the participants with PMLD. These results support findings from previous research into the musical experiences of people with PMLD (Rushton and Kossovaki, 2022). Furthermore, the study (Rushton and Kossovaki, 2022) found that 'pop' music and 'nursery rhymes', were most frequently listened to in the home, and findings from this phase of research suggested that these types of music were most preferred when participants were in a '*good mood*'.

Within this study, individuals with PMLD responded to different musical elements such as instrumentation and rhythm. The exploratory listening experience found mixed results for each track, which suggests that musical preferences are unique and individualised. However, tracks composed using modal or major tonality were generally preferred over those in a minor key. Tracks with a faster tempo (tracks 1 and 3), elicited more positive responses, as did track 2, which had strong rhythmical elements. Responses to the musical elements incorporated in the exploratory listening tracks were similar to other studies including individuals without disabilities. These studies, conducted with non-disabled young adults, indicated that music with a major tonality, a faster tempo, and louder volume, such as tracks 1 and 3, were associated with feelings of happiness (Juslin and Sloboda, 2013). Whereas, music that was quieter, slower, and composed in a minor tonality, such as track 4, was perceived as sad (Lundqvist et al., 2009).

Participant responses to specific musical elements, such as the rhythm and tempo, evidenced previous understanding that people with PMLD are often reactive to the basic elements of music (Ockelford, 2008). Furthermore, findings from the listening experience suggested that people with PMLD have musical preferences, which they can communicate to people who know them well. Data from the exploratory listening experience, which directly included people with PMLD, supported previous findings, in which parental perspectives reported the musical preferences of people with PMLD (Rushton and Kossovaki, 2022).

5.3.2 Participation and co-creation

The methods used within this phase of the study facilitated the co-creation of knowledge with people with PMLD. Using tracks specifically composed for this study enabled the researcher to maximise and separate distinct musical elements, such as modality, tempo, and instrumentation. In doing so, it became possible to directly consult with people with PMLD using a format, the audio tracks, which was relevant and accessible to them. Using a participatory design with proxies' method (Frid et al., 2022) enabled participants with PMLD to be actively involved within this research. Parents/carers acted in the role of interpreter, disseminating the communications of their child/young person to the researcher. The use of multiple proxies may have generated a more co-constructed and objective viewpoint, better reflecting the responses of the individual with PMLD, however this was not possible due to restrictions that were in place because of the Covid-19 pandemic.

The response rate and drop out point of parents/carers before section 3 of the questionnaire, the exploratory listening experience, was high. This suggested that some parent/carers may have completed the questionnaire without the person with PMLD being present. Likely parents were not used to their child/young person being invited to actively participate in research. Often advocating on behalf of their child/young person (Boshoff et al., 2016), parents/carers may not have been familiar with the inclusive design of the online questionnaire. Furthermore, historic research cultures, which have excluded people with PMLD from actively participating in research (Cluley, 2016; de Haas et al., 2022) may have influenced attitudes of respondents and resulted in the high dropout rate/low number of people with PMLD, who were active contributors to the consultation.

Despite the low number of people with PMLD that contributed to the consultation, it is important to acknowledge the hierarchical shift that was intended by the implementation of Phase 1 of this study. People with PMLD have frequently been considered as passive individuals, subjects of research where things are 'done to' rather than 'with' them. Phase 1 of this research repositioned people with PMLD as active contributors within the research process. People with PMLD were viewed as expert consultants with lived experience which

could be used to shape and develop the content of the Musical Play framework, which was intended for use with their peers and contemporaries. The way in which the co-created knowledge generated in Phase 1 of this study was used within Phase 2 is considered in the following section.

5.3.3 Implementation of consultation

Taking into consideration the findings from Phase 1, the following playlist (see Table 29) was created for the implementation of the Musical Play sessions in Phase 2 of this research. The primary reasons for including each of the pieces are presented within the table. Reasons for the inclusion of specific musical tracks was based on data collected in section 2 and section 3 of the online questionnaire and exploratory listening experience.

Table 29: Playlist of playful music provided for the implementation of the Musical Play sessions.

Track (Title and Artist)	Primary reason for inclusion	Duration Min: Sec
Budapest (Instrumental Version) [Originally performed by George Ezra]	Elements suggested in survey results. Upbeat, major key.	3:25
Helpless (Instrumental Version) [Cast of Hamilton]	Suggested in survey results. Upbeat tempo, strong syncopated beat.	4:15
Shivers (Instrumental Version) [Originally performed by Ed Sheeran]	Elements suggested in survey results. Upbeat tempo and strong beat.	3:25
Change Your Life (Instrumental) [Originally performed by Little Mix]	Elements suggested in survey results. Upbeat, major key, pop chord progressions.	3:20
Festival at Village- Folk Tune [Ronu Majumdar]	Similar musical qualities to Track 3 on the exploratory listening experience (South Asian influence).	4:03
Hawaiian Rollercoaster Ride	Upbeat, major key, like Track 1	3:12

(Instrumental) [in the style of Lilo and Stitch]	on the exploratory listening experience.	
Dance Beat [Instrumental Hype Beats]	Like Track 2 on the exploratory listening experience.	1:28
Summer Fun [Jolly Munchkins]	Strong beat, major key, upbeat. Combines musical elements of track 1 and 2.	3:03
In the Night Garden (Instrumental) [KidsZone, Dave Wall]	Suggested in survey results. Major key, descending melodic patterns. Metallic sounds.	1:22
Total duration of tracks		27:33

The playlist (see Table 29) was initially introduced to both settings and all participants, using Spotify, a music streaming platform. Spotify was chosen as it was thought to be familiar to the staff, and allowed the staff the ability to search for, add to, and amend the content of the playlists with relative ease and independence. Staff participants were informed that they could amend the playlist if they wanted or needed to in order to support the playful environment of the participants with PMLD. This was suggested with the understanding that the musical preferences of people with PMLD are individualised and may have differed from the tracks included in the initial playlist (see Table 29). Staff were advised to select the order of the tracks, which tracks to play or not to play, and were given the freedom to play as many tracks as they felt appropriate based on their knowledge of the learners they were supporting.

5.4 Summary

This chapter presented the results of Phase 1 of the research involving participants with PMLD and their parents/carers who acted in the role of proxy. Phase 1 highlighted the musical preferences of people with PMLD and presented the findings of an exploratory online listening experience, which used participatory design with proxies to gather information on the elements of music that may elicit feelings of playfulness for people with PMLD. Results suggested that people with PMLD identified similar musical elements, such as an upbeat tempo

and major tonality, as supporting positive responses. This corresponds with the elements highlighted in previous studies conducted with non-disabled populations. The value of participatory and inclusive research methods were discussed. The successes and limitations of the creative and novel participatory methods used with people with PMLD, and their parents/carers, were highlighted. Finally, the influence of the results from this phase on the Musical Play framework implemented in Phase 2 of the study were outlined. Findings were used to inform the playlist of instrumental music suggested to support the Musical Play sessions. The following chapter presents the findings for the next and main phase of the research, Phase 2, the implementation of the Musical Play sessions, and presents the results for student participants with PMLD.

6. RESULTS: PHASE 2

THE MUSICAL PLAY FRAMEWORK: IMPACT FOR PARTICIPANTS WITH PMLD

6. Introduction

This chapter presents the findings of the main study, the implementation of the Musical Play Framework in two specialist settings in England. The results are presented and discussed by research question; this is common practice when conducting research pragmatically (Lund, 2012). Within each research question, the results for each setting are presented separately. Setting 1 was a special school for students aged 2-11 years identified as having severe and complex special educational needs and disabilities. Setting 2 was a specialist college for young people aged 19-25 with disabilities and different learning needs. More details on these settings can be found in the methodology chapter (4.4.2).

The first two research questions, for this phase of the study, involved participants with PMLD who took part in Musical Play sessions delivered by staff in their educational setting.

The first research question to be answered in this phase of the study was:

- How does the introduction of Musical Play sessions affect the potential expressions of playfulness of students with PMLD?

A multiple baseline design was used to collect data to answer this research question. These findings are combined with quotes from staff focus-group interviews which relate to the participant and type of play being investigated. A full thematic analysis of the focus-group interviews is provided in Chapter 7. Quotes used in this chapter were selected to enhance and expand on the quantitative data, adding to the understanding and interpretation of the graphs.

They are only included when they directly expand on the quantitative data, or when there is opportunity to reflect the individuality of the participant with PMLD being discussed.

Musical Play and potential expressions of playfulness

The term *potential* expressions of playfulness acknowledges the role of proxy interpretation in observing, understanding, and recording the communications of people with PMLD. Potential expressions of playfulness were coded using Watson's (2014) definitions of playfulness for people with PMLD (see Table 14).

Baseline footage was generated from observations of participants engaging in playful activities in their typical classroom settings. Participants were recorded for up to 30-minutes during the baseline period. Once participants began the Musical Play sessions, these were delivered twice-weekly, each Musical Play session lasted for up to 30-minutes in duration. There was no minimum duration specified for the sessions, however a minimum of 10 minutes of continuous video footage was required to be included for analysis. The length of the session was determined by the member of staff delivering the session, the alertness of the participant, and additional external factors, such as the need for a medical intervention, personal care, or availability of other class staff. Ten minutes of video footage, from the middle section of the video recording, was coded for each of the baseline and Musical Play sessions using 30-second interval coding. If the potential playful behaviour was observed within the 30-seconds a score of 1 was given, while if the potential playful behaviour was not observed a score of 0 was given. Therefore, the maximum score for each category is 20, in which the potential playful behaviour was observed during every 30-second interval. For more information on the coding schedule see Chapter 3 (4.4.5) (for a blank copy of the observation schedule see Tables 16, 17 and 18).

6.1 Setting 1

Baseline data was collected for six children, however, due to illness only five children took part in the Musical Play sessions and data for four children were fully analysed. As one child, Robert, did not take part in any Musical Play sessions, data on this participant is not included in the results (see Table 30 below, and Fig. 4 in the methodology chapter). Furthermore, another

child, Jack, took part in only two Musical Play sessions, as a result, the impact of the Musical Play sessions on potential expressions of playfulness is limited. Data collection and access to the Musical Play sessions were disrupted for Jack due to illness, as well as staff shortages in the setting. As it was not possible to draw any meaningful conclusions from this data, it has been removed from the results section. For transparency, data collected from Jack is included in Appendix 9.

Information on the participants can be found in Table 9, in the Methodology chapter (4.4.2). Details of the number of baseline and Musical Play sessions participants took part in are displayed in Table 30 below. The maximum number of Musical Play sessions a participant took part in at Setting 1 was thirteen (Kaden and Jordan), the minimum number was six (Chaviv).

Table 30: Baseline and Musical Play implementation: Setting 1 participants

Participant	Baseline period	No. of Baseline sessions	Musical Play implementation	No. of Musical Play sessions
Kaden	19 th Jan- 2 nd Feb 2022	5	8 th Feb- 30 th March 2022	13
Jordan	19 th Jan- 2 nd Feb 2022	4	8 th Feb- 30 th March 2022	13
Hamza	10 th Feb- 3 rd March 2022	5	9 th - 31 st March 2022	8
Chaviv	19 th Jan- 17 th Feb 2022	7	9 th -31 st March 2022	6

There were several disruptions to both the baselining period and the implementation of the Musical Play sessions due to the ongoing Covid-19 pandemic, and other student and staff absences. Also, data for some of the Musical Play sessions was missing, this was due to the video camera not successfully capturing the session. There are two reasons that data was not collected/or is missing for Setting 1; 1. the battery ran out on the camera, 2. the audio is missing from the video footage. Missing data, where a Musical Play session took place but was not video recorded, is represented on the graphs included in the results section using an 'x'.

Video footage was coded to generate data on both the reactive and reciprocal play of participants using the adapted SPRA (White, 2006). Data on the reactive play of each participant is presented first, this is followed by data on the reciprocal play of each participant, following the format of the SPRA (White, 2006). The following section presents the findings on the effect of the Musical Play sessions on the Reactive play of participants in Setting 1.

6.1.1 Reactive Play

Reactive play is defined as an individual's reaction, in ***what is perceived to be a playful or positive manner****, to an adult play-partner during an activity. Reactive play was coded using the following three categories (see Table 31).

Table 31: Reactive Play descriptors

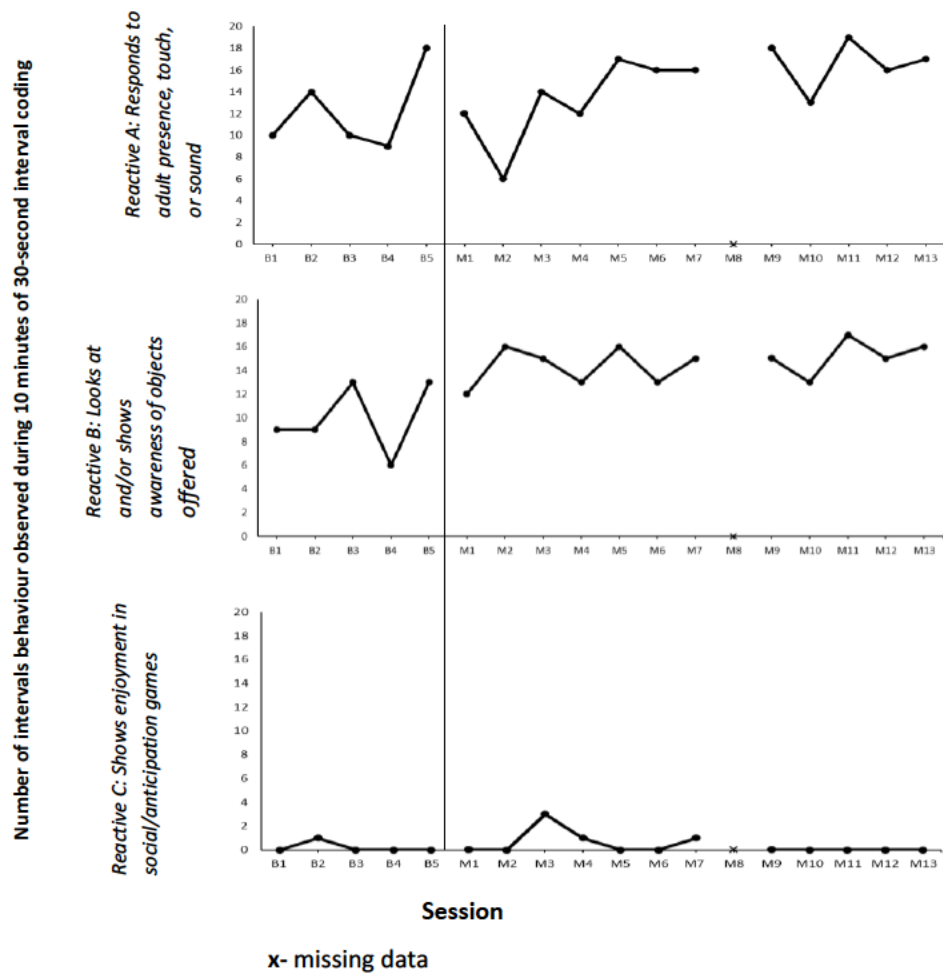
A. Responds to adult presence, touch, or sound.
B. Looks at and/or shows awareness of objects offered.
C. Shows enjoyment in social/anticipation games, e.g., tickles/peek-a-boo.

Words formatted in **bold aim to acknowledge the responsibility of the coder to interpret the behaviours of participants and highlight the limitations of this to the reader.*

These categories were adapted from the SPRA (White, 2006) to make them relevant and representative of the abilities of people with PMLD. Reactive play is the earliest form of interactive play and is led by the adult play-partner.

In Setting 1, the Musical Play sessions were implemented by two members of staff working in the same classroom as the participants, the staff play-partners (four members of staff in total, see Table 10). As a result, the staff play-partner observed during the baseline period and the Musical Play sessions varied. Whether the session was facilitated by staff play-partner 1 or 2 was random, and often depended on the availability of the adult, other classroom demands, and the decision of the class teacher co-ordinating the staff team. The following section presents the results of reactive play, for each of the participants from Setting 1. Data for each participant is presented separately. This is due to the heterogeneous nature of people with PMLD, their abilities and disabilities, and in this way each participant is viewed as their own control.

Figure 11: Potential expressions of playfulness: Reactive Play Kaden



Mean average	
A: Baseline = 12.2	Musical Play = 14.7
B: Baseline = 10	Musical Play = 14.7
C: Baseline = 0.2	Musical Play = 0.4

Kaden's responses to A: *adult presence* -top line of the graph- varied between each session, however, overall, they increased throughout the period of the Musical Play sessions. The mean average of intervals in which reactive play A was observed was 12.2 during the baseline sessions. This increased to 14.7 during the Musical Play sessions. Potential expressions of playfulness occurred more often in response to B: *object offered* - middle line of the graph- during the Musical Play sessions than in the baseline period (mean average: baseline = 10,

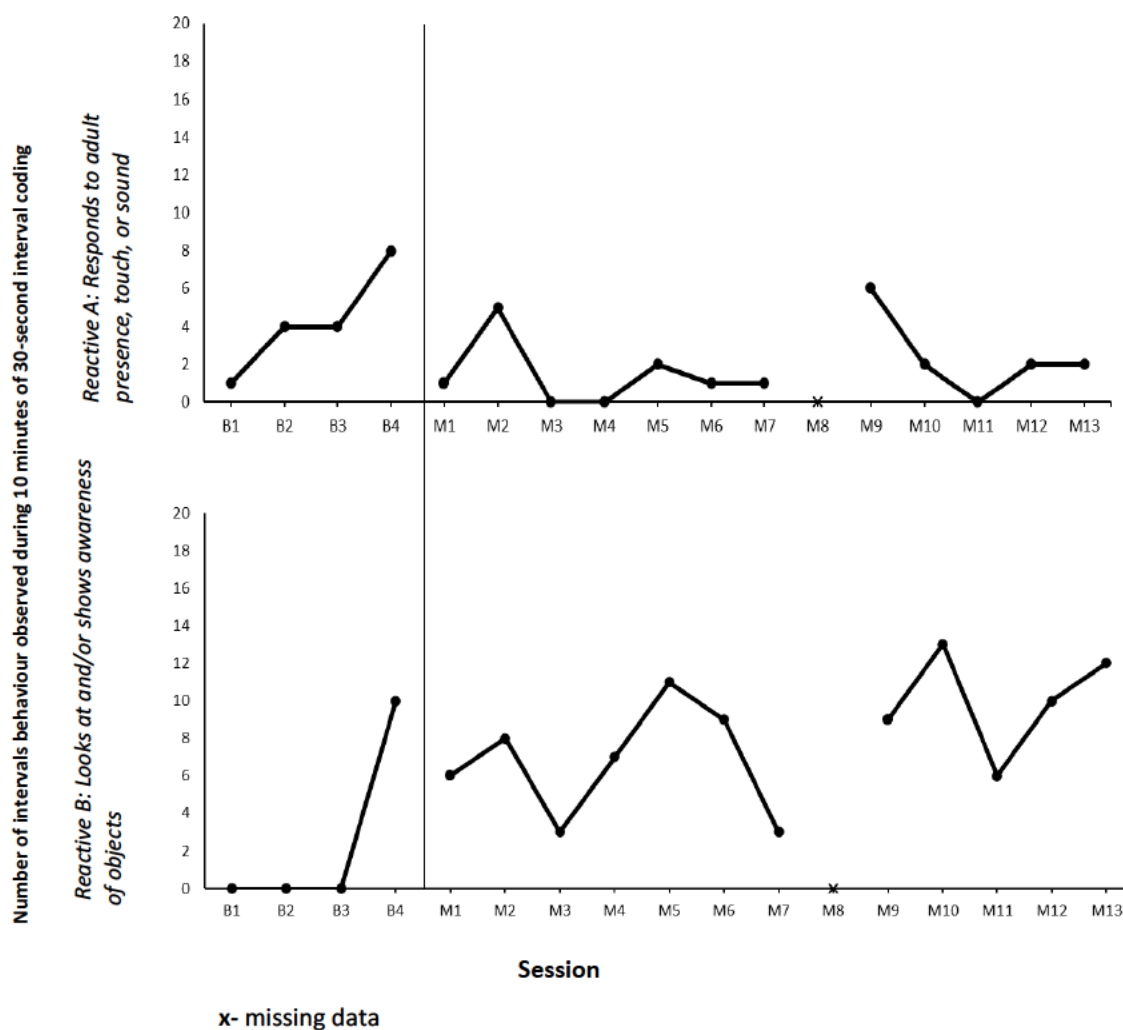
Musical Play =14.7). There were more playful responses to C: *social anticipation games* - bottom line of the graph- observed during the Musical Play sessions for Kaden than during the baseline period, however, these responses were only present in a small number of Musical Play sessions (n=3).

Staff introduced additional instruments, the claves, and the guiro, into Kaden's Musical Play sessions; Isabelle (Setting 1; Focus-group 2) mentioned:

'I dunno if you've seen, but I've got some additional instruments that I know that [Kaden] likes playing in class as well. So that was nice.'

This may have also increased the amount that Kaden was observed responding to B: *objects offered* during the Musical Play sessions.

Figure 12: Potential expressions of playfulness: Reactive Play Jordan



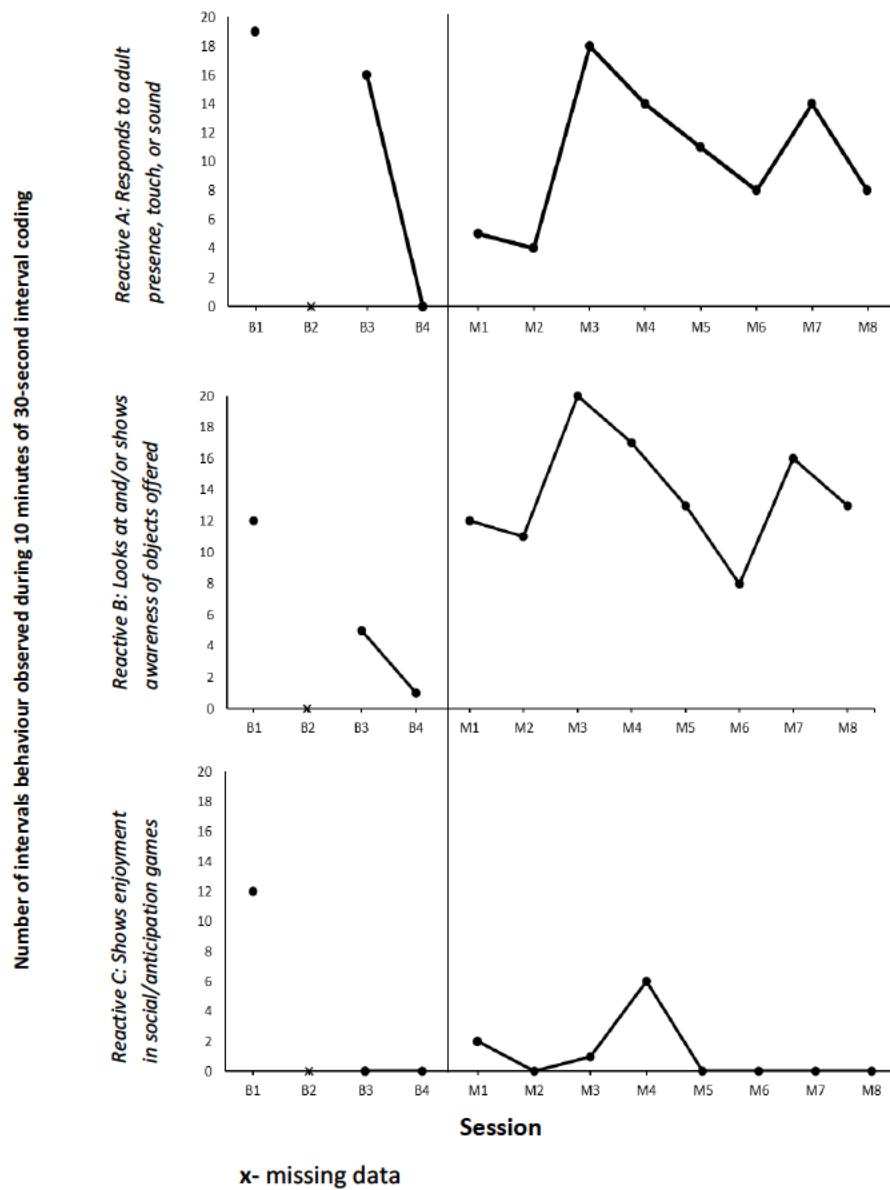
Mean average

A: Baseline = 4.3	Musical Play = 1.8
B: Baseline = 2.5	Musical Play = 8

Potential expressions of playfulness A: *in response to adult presence*, varied throughout both the baseline and Musical Play sessions. In some Musical Play sessions (n=3) no playful responses to A: *adult presence*, - top line of the graph- were observed. The average number of intervals in which reactive play, A: *in response to adult presence* was observed was less during the Musical Play sessions (1.8) than the baseline period (4.3). There were more playful reactions to B: *objects offered*, -bottom line of the graph- observed during the Musical Play sessions than the baseline period. The mean average number of intervals in which reactive play

(B) was observed during the Musical Play sessions was 8, in comparison to 2.5 during the baseline period. These playful responses (B) varied between Musical Play sessions, however, overall, they increased throughout the intervention period. There were no reactive play C: *shows enjoyment in social/anticipation games, e.g., tickles/peek-a-boo*, responses observed during the baseline or Musical Play sessions for Jordan. Therefore, with a score of 0 throughout, Reactive C has been omitted from the graph (see Figure 12).

Figure 13: Potential expressions of playfulness: Reactive Play Hamza



Mean average

A: Baseline = 11.7	Musical Play = 10.3
B: Baseline = 6	Musical Play= 13.8
C: Baseline = 4	Musical Play = 1.1

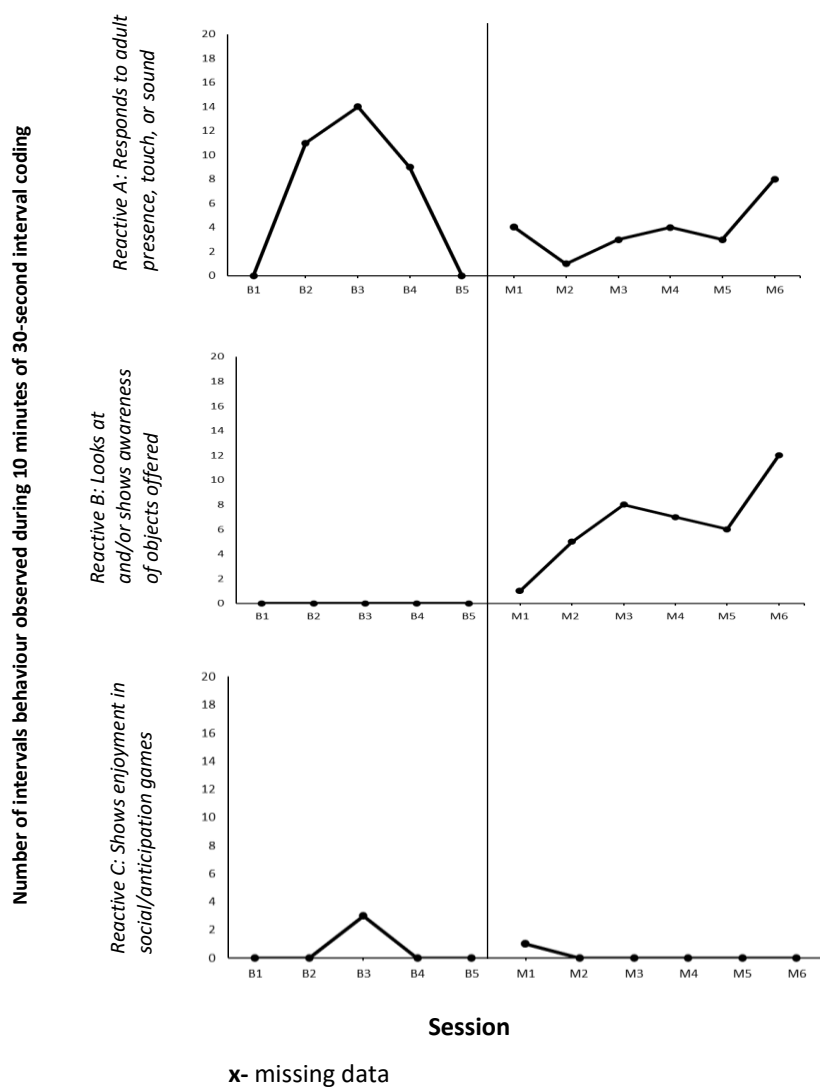
Due to a delay in gaining consent, and ongoing ill health, it was difficult to collect baseline data for Hamza within the allocated timeframe. Further, during B4 Hamza's hearing aids were not

working, which explains the lack of playful behaviours observed, and therefore is not a representative baseline measure.

Hamza's reactive playful behaviours were observed more often in response to B: *object offered*, than A: *adult presence, touch or sound*, during Musical Play sessions. This contrasted with baseline observations in which more playful responses were observed in response to the adult rather than the object, suggesting that the musical instruments elicited more potential expressions of playfulness than the resources used during the baselining period. The mean average of intervals in which a response to A: *adult presence, touch or sound* was observed for Hamza was 11.7 for the baseline period, compared to 10.3 during the Musical Play intervention. The mean average in response to B: *object offered*, was 6 for the baseline period, and 13.8 for the Musical Play sessions. This is particularly interesting as Hamza is blind. The auditory quality of the musical instruments used in the intervention sessions may have been more engaging than the objects offered during the baseline observations. C: *Enjoyment of social anticipation games* was only observed in one of the baseline sessions. It was observed in three of the Musical Play sessions, however this type of reactive play was not frequent.

For sessions M3 and M4 Hamza's peer Chaviv was absent, which meant Hamza took part in the Musical Play sessions with one-to-one support from his staff play-partner. Hamza's reactive play skills are higher for all categories during these two sessions (M3 and M4), suggesting that more playful responses were elicited from Hamza when the attention of the adult was not divided.

Figure 14: Potential expressions of playfulness: Reactive Play **Chaviv**



Mean average

A: Baseline = 6.8	Musical Play = 3.8
B: Baseline = 0	Musical Play = 6.5
C: Baseline = 0.6	Musical Play = 0.1

The data suggests that reactive playful behaviours A: *in response to an adult*, were more frequent during the baseline sessions (B2-B4) than in the Musical Play sessions, however, this was not consistent across all baseline observations. There was a gradual increase in these playful behaviours over the duration of the intervention period (M1-M6).

During the baselining period, there were no occasions in which Chaviv B: *looked at and/or showed awareness of objects offered*. However, similar to Chaviv's A: *responses to adult presence*, these responses also increased throughout the period of intervention (see Figure 14). There was little evidence of playfulness as a reaction to C: *social or anticipation games*, during the baseline or the intervention sessions.

The mean average number of potential expressions of playfulness A: *in response to adult presence* observed for the baseline period for Chaviv was 6.8, for the Musical Play sessions this was 3.8. The average number of intervals in which B: *awareness of objects offered*, was observed was 0 during the baseline period, increasing to 6.5 during the Musical Play sessions. There was little difference in the average number of intervals in which reactive play, C: *social anticipation games* was observed (baseline, 0.6, Musical Play, 0.1).

6.1.2 Overall findings on reactive play for Setting 1

There are mixed findings on the impact of Musical Play on the reactive playfulness of the four participants in Setting 1. However, all the children displayed playful responses in relation to A: *adult presence*, and B: *objects offered*, during the Musical Play sessions. The amount these responses were observed varied between sessions. For two participants, Kaden and Chaviv, these responses gradually increased throughout the intervention period (see Figure 11 and Figure 14). However, for others, Jordan and Hamza, the frequency these responses were observed during the Musical Play sessions varied. For Hamza, reactive playful responses were highest when participating 1-to-1 in the Musical Play sessions.

The fewest playful behaviours were observed for reactive C: *shares enjoyment in social anticipation games*. This category is dependent on a particular type of adult-led play, which may have been employed less frequently, and so reducing the amount that this playful response was observed. The following section focuses on the reciprocal playful responses of the children in Setting 1.

6.1.3 Reciprocal Play

During reciprocal play, the individual with PMLD in this study takes a more active part in the play activity with the adult play-partner. Joint activity, imitation, and turn-taking, ***in what is perceived to be a playful or positive manner****, begin to emerge. Reciprocal play was coded using the following four categories (see Table 32). These categories were adapted from the SPRA (White, 2006) to make them more relevant and reflective of the play of people with PMLD.

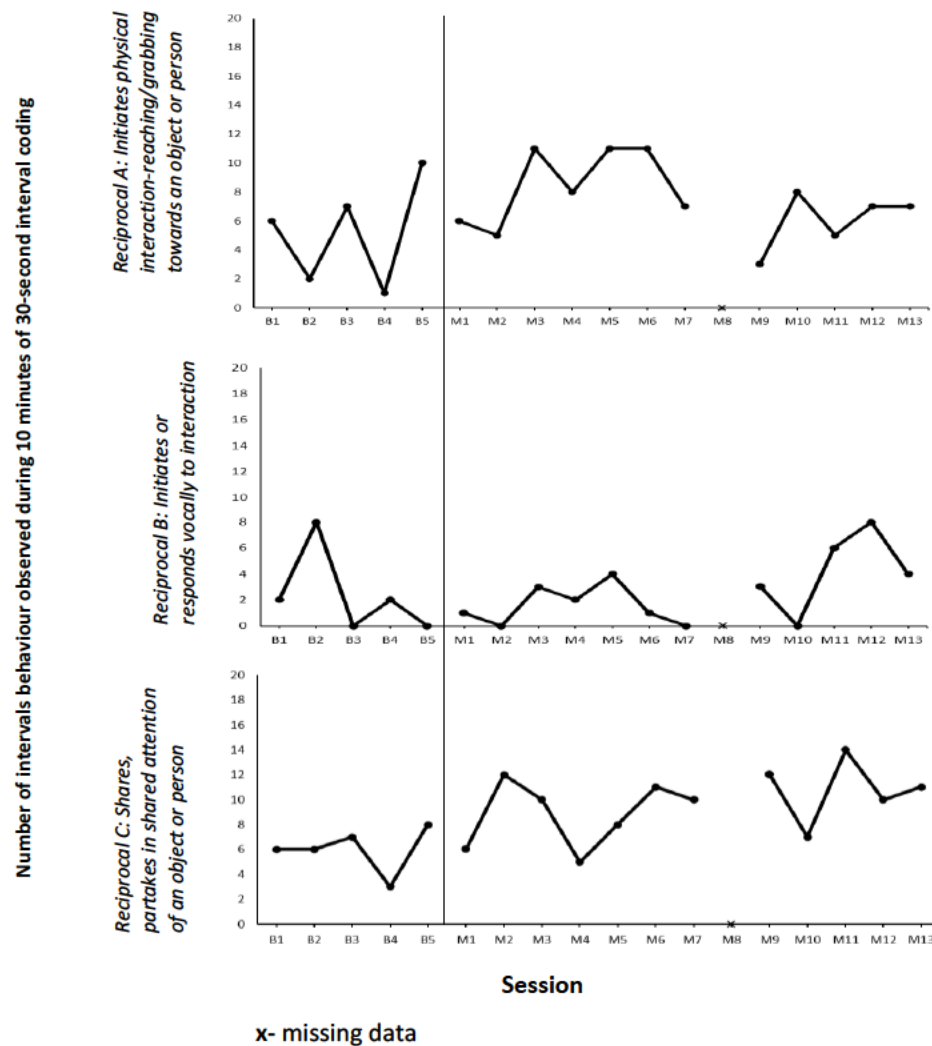
Table 32: Reciprocal Play descriptors

A. Initiates physical interaction- reaching/grabbing towards an object or person.
B. Initiates or responds vocally to interaction.
C. Shares, partakes in shared attention of an object or person.
D. Turn-takes in partner games- e.g., hitting the drum/vocalising in an exchange with the play-partner, involving at least two rounds of turn-taking.

Words formatted in **bold aim to acknowledge the responsibility of the coder to interpret the behaviours of participants and highlight the limitations of this to the reader.*

The results for the reciprocal play of participants in Setting 1 are presented below.

Figure 15: Potential expressions of playfulness: Reciprocal Play Kaden



Mean average

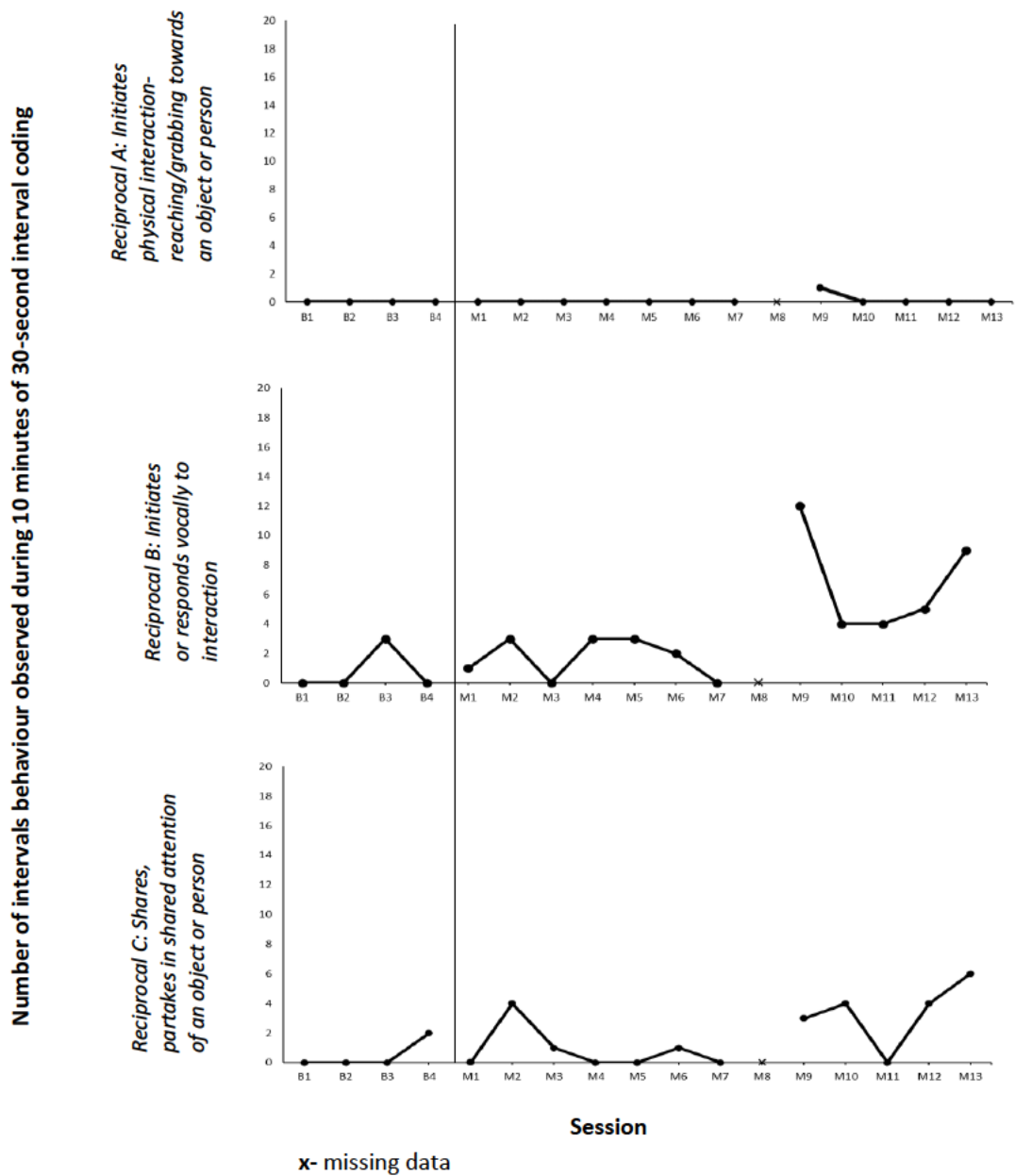
A: Baseline = 6	Musical Play = 9.7
B: Baseline = 2.4	Musical Play = 2.6
C: Baseline = 5.2	Musical Play = 7.4

Potential expressions of reciprocal playfulness (A) were observed more often during Musical Play sessions than during the baselining period. The mean average of intervals where reciprocal playfulness (A) was observed during the baseline period was 6, and the mean average during the Musical Play sessions was 9.7.

The mean average number of intervals in which B: *vocal* responses were observed was similar for both the baseline (2.4) and Musical Play sessions (2.6). C: *Shared attention of an object or person* was observed more frequently during the Musical Play sessions than the baselining period. The mean average in which these behaviours were observed increased from 5.2 during the baseline period to 7.4 during the Musical Play sessions. However, the frequency of this fluctuated between all sessions.

A score of 0 was recorded for Kaden for D: *turn-takes in partner games*, in the baseline and Musical Play sessions. Therefore, this has been omitted from the graphs to reduce visual clutter (see Figure 15).

Figure 16: Potential expressions of playfulness: Reciprocal Play Jordan



Mean average	
A: Baseline = 0	Musical Play = 0.1
B: Baseline = 0.8	Musical Play = 3.2
C: Baseline = 0.5	Musical Play = 1.3

Reciprocal play behaviours were not frequently observed for Jordan across either the baseline or intervention periods. There was little evidence of Jordan A: *initiating physical interaction*

across the observations. Jordan has limited control over his intentional movement (see Table 9), this is likely to affect his ability to initiate physical interaction during play activity.

There is more evidence of Jordan vocalising during the Musical Play sessions than the baseline period (see Reciprocal B). The number of intervals in which B: *vocalisations* were observed was higher during the Musical Play sessions (M9-M13) than the baseline period. The mean average increased from 0.8 during the baseline sessions to 3.2 during the Musical Play sessions. C: *Shared attention* occurred infrequently across both the baseline and Musical Play sessions. There is little difference in the mean average between the baseline (i.e., 0.5) and the Musical Play sessions (i.e., 1.3). The highest number of reciprocal play behaviours were observed for Jordan during M9 session. A score of 0 was recorded for D: *turn-takes in partner games*, in the baseline and Musical Play sessions for Jordan. Data for this has been omitted from the graph (see Figure 16) to reduce visual clutter.

Jordan's reciprocal play was commented on during the focus-group interviews;

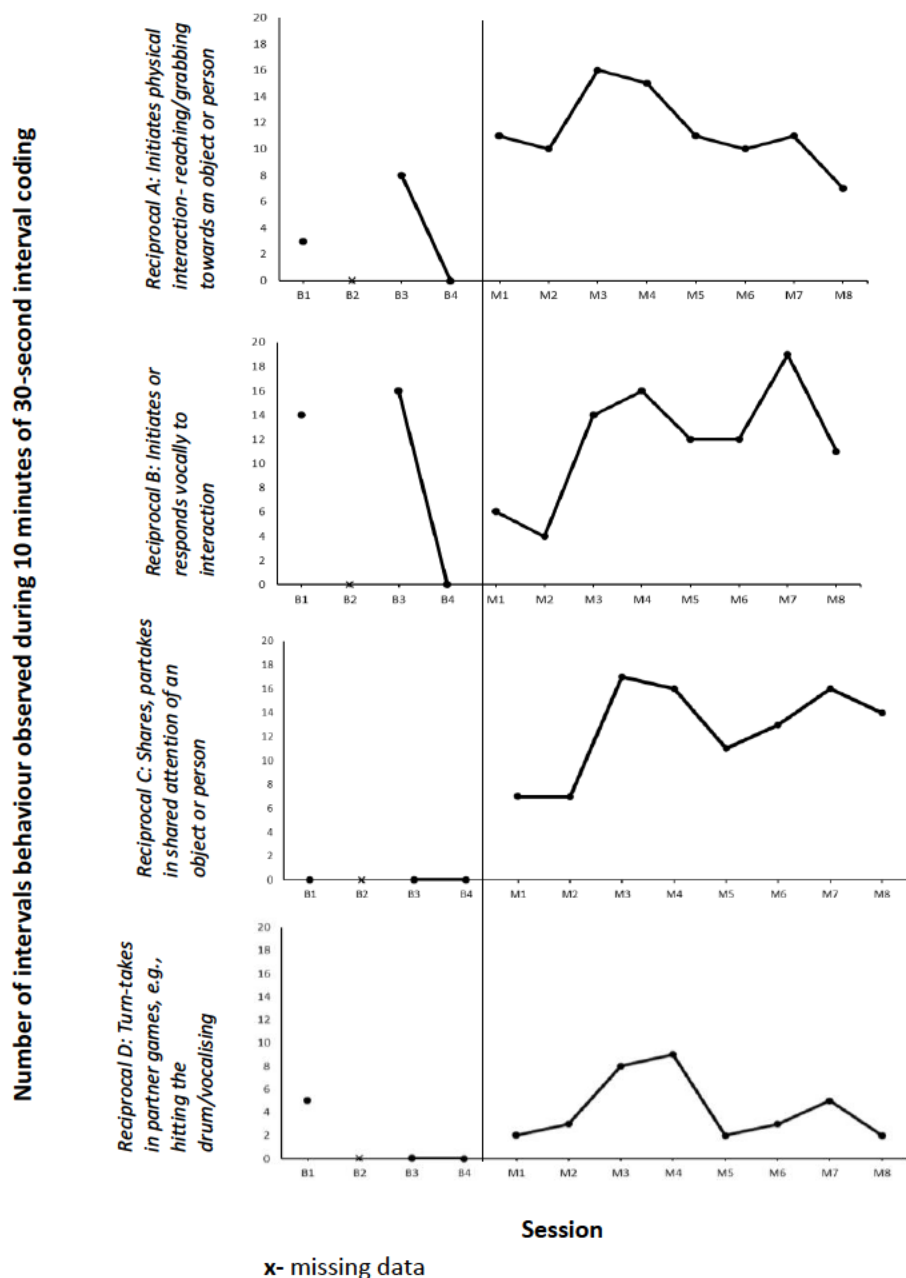
'One thing I noticed about Jordan on the last two sessions... at the beginning it was very much you guided his hand and made him play the instruments...on the last two on the recordings as you can see, 'cuz he does tend to mouth a lot. But he actually stopped mouthing and... he didn't only just stop mouthing, he moved his hand from side-to-side with the chimes...I would never have put him down to be able to do that. And if you look on the footage you can see he's clearly doing that.'

Ruth (Focus Group 2)

This quote suggested that reciprocal play is not a play activity that staff had considered a possibility for Jordan before the Musical Play intervention. However, the narrative implies that Jordan used intentional movements to play with the chime-tree during the last two sessions. This increase in reciprocal play, towards the end of the intervention period, corresponds with the video coded data (see Figure 16), reciprocal play (B and C) were observed more during M11

and M12, the last two sessions. It would have been interesting to continue the intervention to see if this trend sustained, and if Jordan was beginning to develop his reciprocal play abilities.

Figure 17: Potential expressions of playfulness: Reciprocal Play Hamza



Mean average

A: Baseline = 3.7	Musical Play = 11.3
B: Baseline = 10	Musical Play = 11.8
C: Baseline = 0	Musical Play = 12.6
D: Baseline = 1.7	Musical Play = 4.3

There is more evidence of reciprocal play behaviours for Hamza during Musical Play sessions than during the baseline observations. This is particularly notable for C: *shares, partakes in shared attention of an object or person*. This playful behaviour was not observed during the baseline sessions, but gradually increased during the Musical Play sessions (M1-M7). The mean average number of intervals in which C: *shared attention* was observed during the Musical Play sessions was 12.6. Additionally, D: *turn-taking*, also increased throughout the period of intervention (M1-M5). The average number of intervals in which D: *turn-taking* occurred was 1.7 during the baseline session. This increased to 4.3 during the Musical Play intervention. The number of intervals in which potential expressions of playfulness are recorded decreases for M8. The reason for this is unknown.

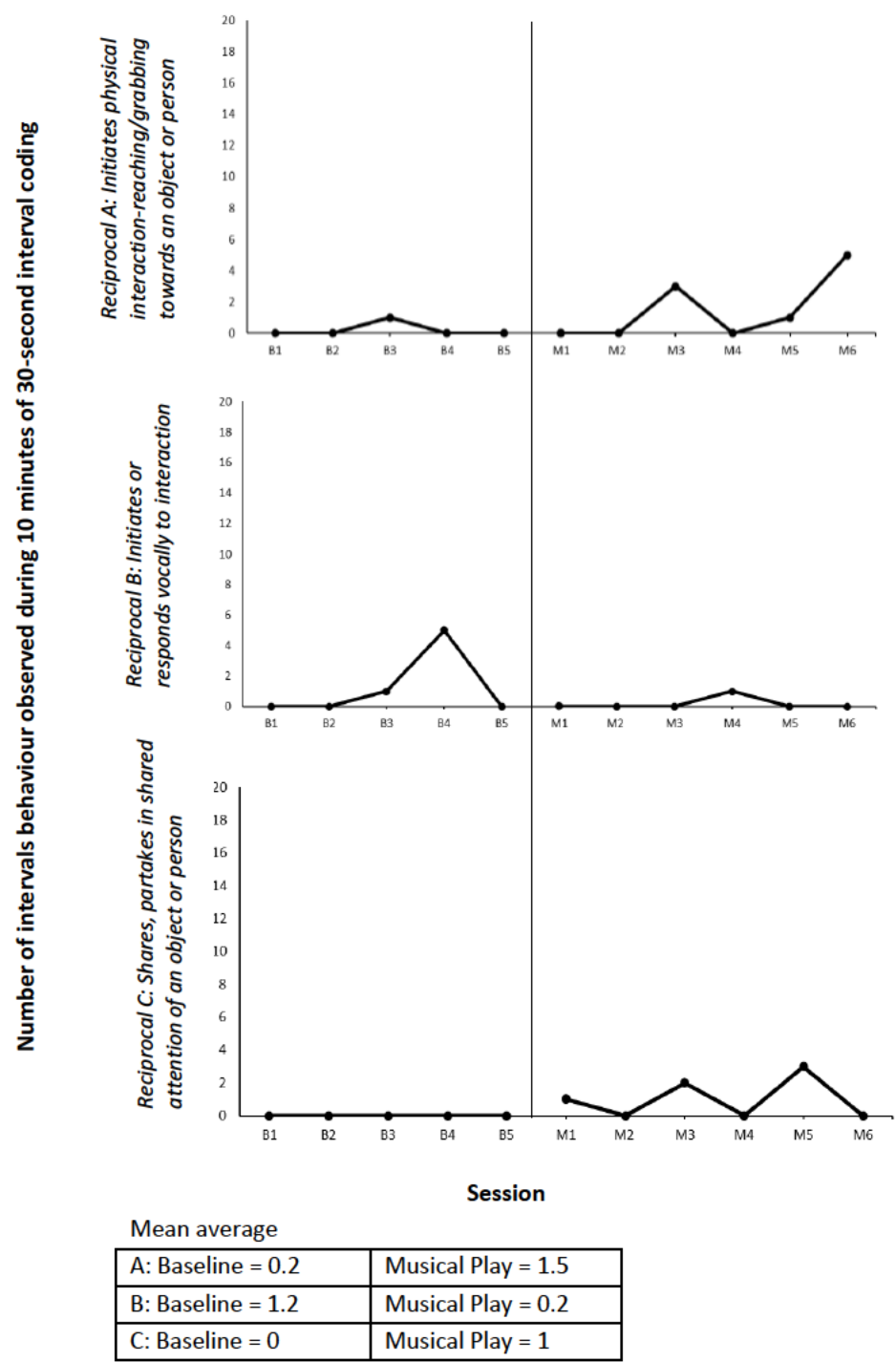
Staff described Hamza's reciprocal play during the Musical Play sessions.

'We did a lot of copying, cuz he'd play, and then I'd play, and then he'd do a different sound, then find where I was, kind of copying each other making different sounds on the one instrument, different things.'

Louise (Setting 1; Focus-group 2)

The most potential expressions of playfulness for Hamza, reciprocal play, were observed during M3 and M4. As discussed earlier in this chapter, see Figure 13, these sessions were delivered one-to-one, as Hamza's peer was absent from school. This finding suggests that one-to-one Musical Play sessions facilitated more opportunities for reciprocal play for Hamza.

Figure 18: Potential expressions of playfulness: Reciprocal Play Chaviv



Reciprocal play behaviours were not frequently observed for Chaviv across the baseline or the intervention periods. There is little change in the average number of intervals in which

reciprocal play was observed for Chaviv, suggesting that this type of interactive play was not something Chaviv engaged in.

A score of 0 was recorded for D: *turn-takes in partner games*- in the baseline and Musical Play sessions for Chaviv. This data has been omitted from the graph (see Figure 18).

6.1.4 Overall findings on reciprocal play for Setting 1

Reciprocal play requires an individual with PMLD to take a more active part in the play activity with the staff play-partner than reactive play. For Chaviv this active participatory play was rarely observed in either the baseline or Musical Play sessions. This is similar to Jordan, for whom reciprocal play was scarce. Both Chaviv and Jordan have lower cognitive abilities and less control over their physical movements (see Table 9 for a description of the participants) and were more likely to take part in reactive than reciprocal play.

For Kaden and Hamza reciprocal play was observed throughout the intervention period. A: *Physical interaction* was observed slightly more during the intervention sessions than the baseline period. B: *Vocalisations* were lower than the baseline period at the start of the intervention, however these increased throughout the period of intervention for both Kaden and Hamza. This may have occurred as the participants became more familiar with the background instrumental music used in the Musical Play sessions.

C: *Shared attention* was observed more during the Musical Play sessions than the baseline period for all participants (n=4). For Kaden, Jordan, and Hamza this increased throughout the period of intervention. This increase in shared attention, of an object or person (C) may have occurred as adult-play partners became more familiar with, and confident in, using the resources and adopting the Musical Play approach to interaction. It may have also occurred as the children became more familiar with the adult, instruments and setting. Findings suggested that participants' attention to the Musical Play sessions sustained, or increased, throughout the intervention period.

D: *Turn-taking* was not observed for most participants (n=3). For Hamza, *turn-taking* was observed in every Musical Play session, however, in most sessions it did not happen often.

Turn-taking is a complex social exchange and requires simultaneous attention of both parties for it to occur. Both the abilities of the participants with PMLD and the responsiveness of the adult-play partner may have affected opportunities for turn-taking during play.

6.2 Setting 2

Six participants with PMLD, from three classes (2 per class), took part in the study. Information on the participants can be found in Table 11, in the Methodology chapter (4.4.2). Details of the number of baseline and Musical Play sessions participants took part in are displayed in Table 33 below. The maximum number of Musical Play sessions a participant took part in at Setting 2 was eleven, the minimum number was eight.

Table 33: Baselining and Musical Play implementation: Setting 2 participants

Participant	Baseline period	No. of Baseline sessions	Musical Play implementation	No. of Musical Play sessions
Robynn	10 th Jan- 10 th Feb 2022	7	14 th Feb- 4 th April 2022	9
Joel	10 th Jan- 10 th Feb 2022	8	14 th Feb- 4 th April 2022	9
Pawel	12 th Jan- 16 th Feb 2022	8	7 th March-6 th April 2022	8
Reepal	10 th Jan- 16 th Feb 2022	11	7 th March-6 th April 2022	9
James	10 th – 26 th Jan 2022	6	31 st Jan- 6 th April 2022	11
Taksheel	12 th - 26 th Jan 2022	5	2 nd Feb- 6 th April 2022	11

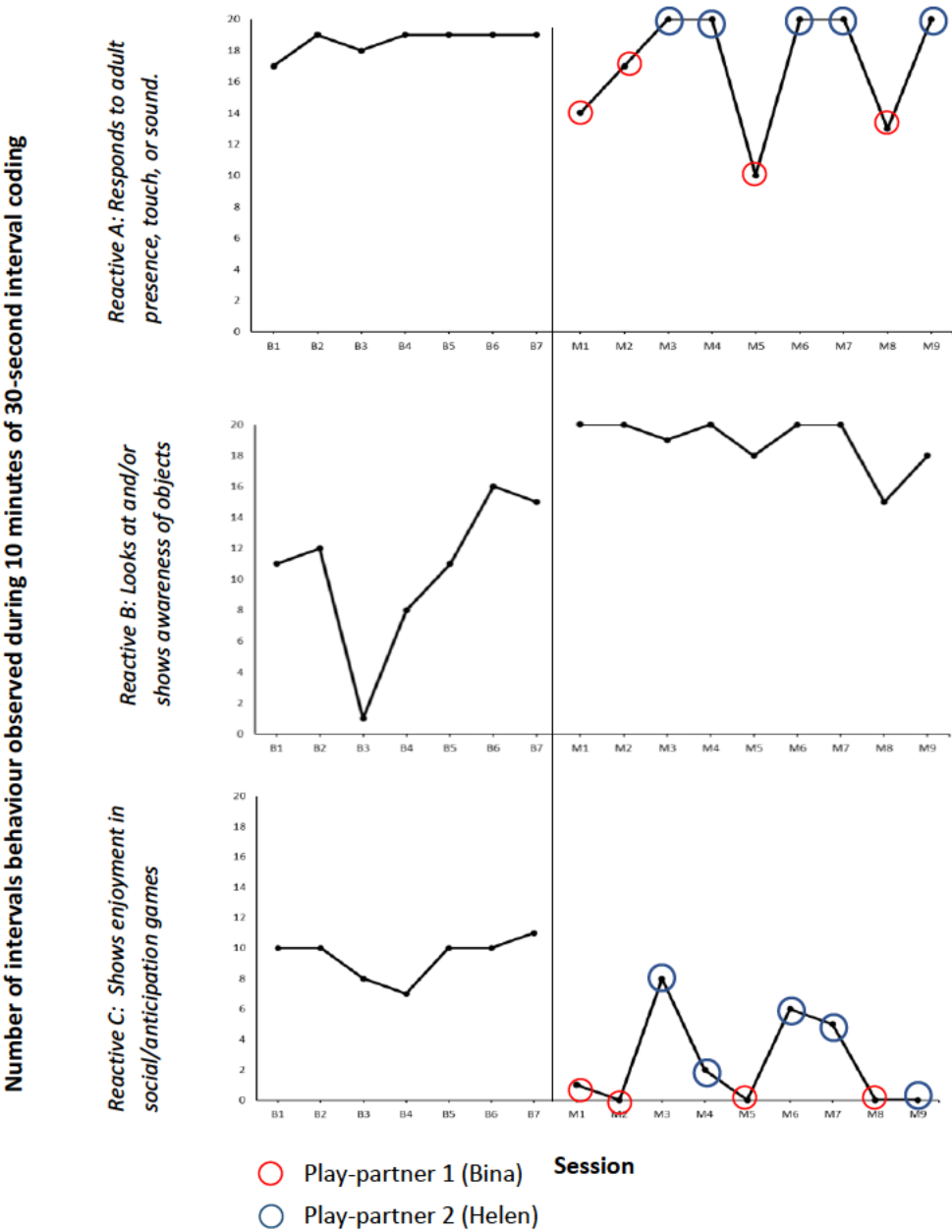
As in Setting 1, there were a number of disruptions to both the baselining period and the implementation of the Musical Play sessions due to the on-going Covid-19 pandemic and student participants absence due to illness and/or medical appointments. Data for some of the Musical Play sessions was missing, this was due to the video camera not successfully capturing the session. There are three reasons that data was not collected/or is missing for Setting 2; 1. the battery ran out on the camera, 2. the facilitator forgot to press record, 3. the audio is missing from the video footage. Missing data, where a Musical Play session took place but was not video recorded is represented on the graphs using an 'x'.

Musical Play sessions for Robynn and Joel, and James and Taksheel, were facilitated by two staff play-partners, Bina and Helen. Musical Play sessions for Pawel and Reepal were facilitated by the same staff play-partner throughout. Whether the session was facilitated by play-partner 1 or 2 was random, and depended on the availability of the adult, other classroom demands, and the decision of the member of staff co-ordinating the class team. The following section presents the findings on the effect of the Musical Play sessions on the Reactive play of participants in Setting 2.

6.2.1 Reactive Play

As in Setting 1, reactive play is described as; when an individual with PMLD reacts in ***what is perceived to be a playful or positive manner*** to an adult play-partner during an activity. Reactive play was coded using the descriptors outlined earlier in this chapter (see Table 29).

Figure 19: Potential expressions of playfulness: Reactive Play Robynn



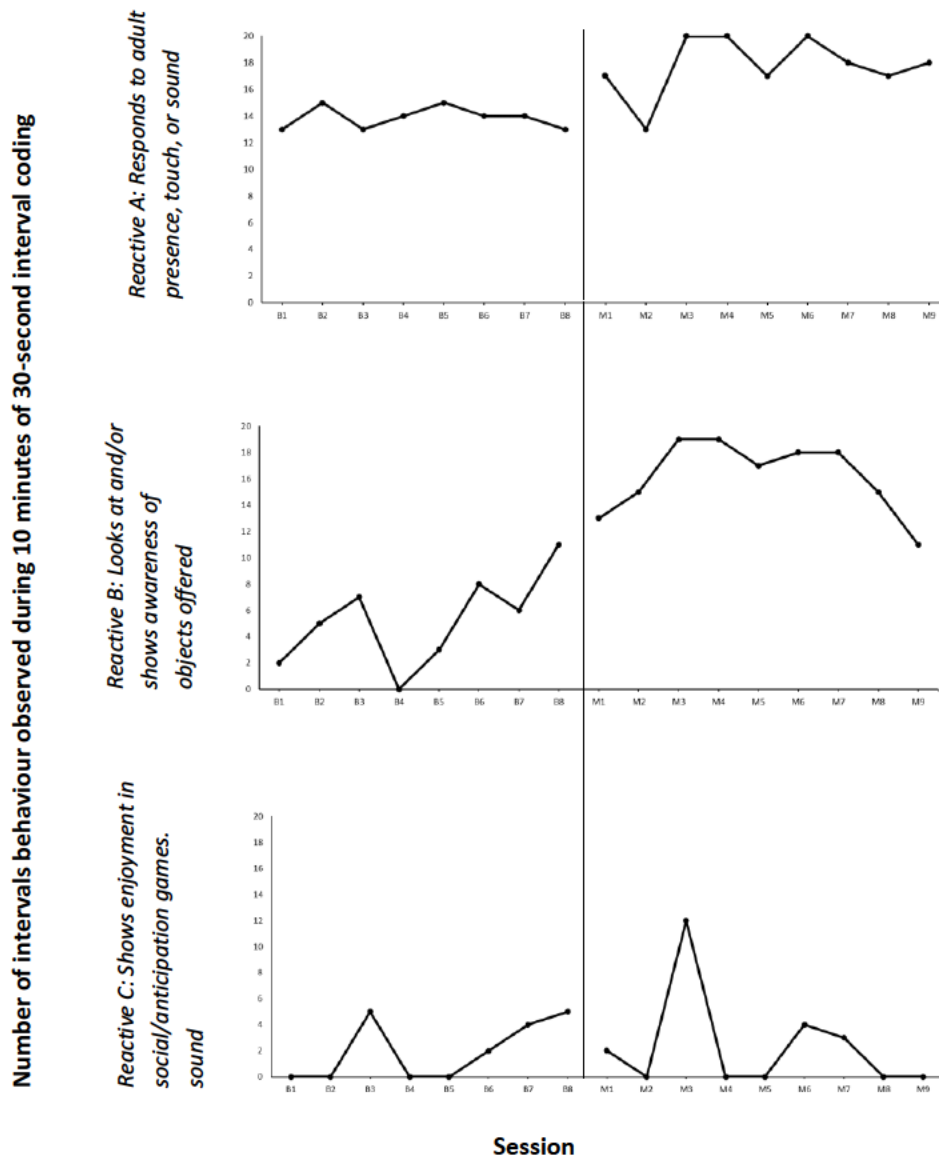
Mean average

A: Baseline = 18.6	Musical Play = 17.1
B: Baseline = 10.6	Musical Play = 18.9
C: Baseline = 9.4	Musical Play = 2.4

There was more consistency in Robynn's playful responses to adult presence or touch recorded during the baseline period than in the Musical Play sessions (see Figure 19). During the Musical Play sessions, the number of coded intervals in which Robynn B: *looked at, or showed awareness of, objects offered in a playful or positive manner*, was higher than the baseline period. The average number of intervals in which Robynn was observed showing B: *awareness of objects offered* was higher during the Musical Play sessions (18.9) than the baseline period (10.6). There were less playful reactive behaviours recorded in response to *social/anticipation games* during the Musical Play sessions (average 2.4), than the baseline period (average 9.4).

The mean average number of intervals in which Robynn responded to A: *adult presence* was slightly less during the Musical Play sessions (17.1) than during the baseline period (18.6). The number of intervals playfulness was observed differed depending on which adult was supporting the session. More playful behaviours were recorded when Robynn was supported by play-partner 2, Helen, than play-partner 1, Bina (see Figure 19). This difference is most apparent in Robynn's A: *responses to adult presence*. Notably a change in staff play-partner did not affect Robynn's reactive play in response to the B: *objects (musical instruments) offered*.

Figure 20: Potential expressions of playfulness: Reactive Play Joel



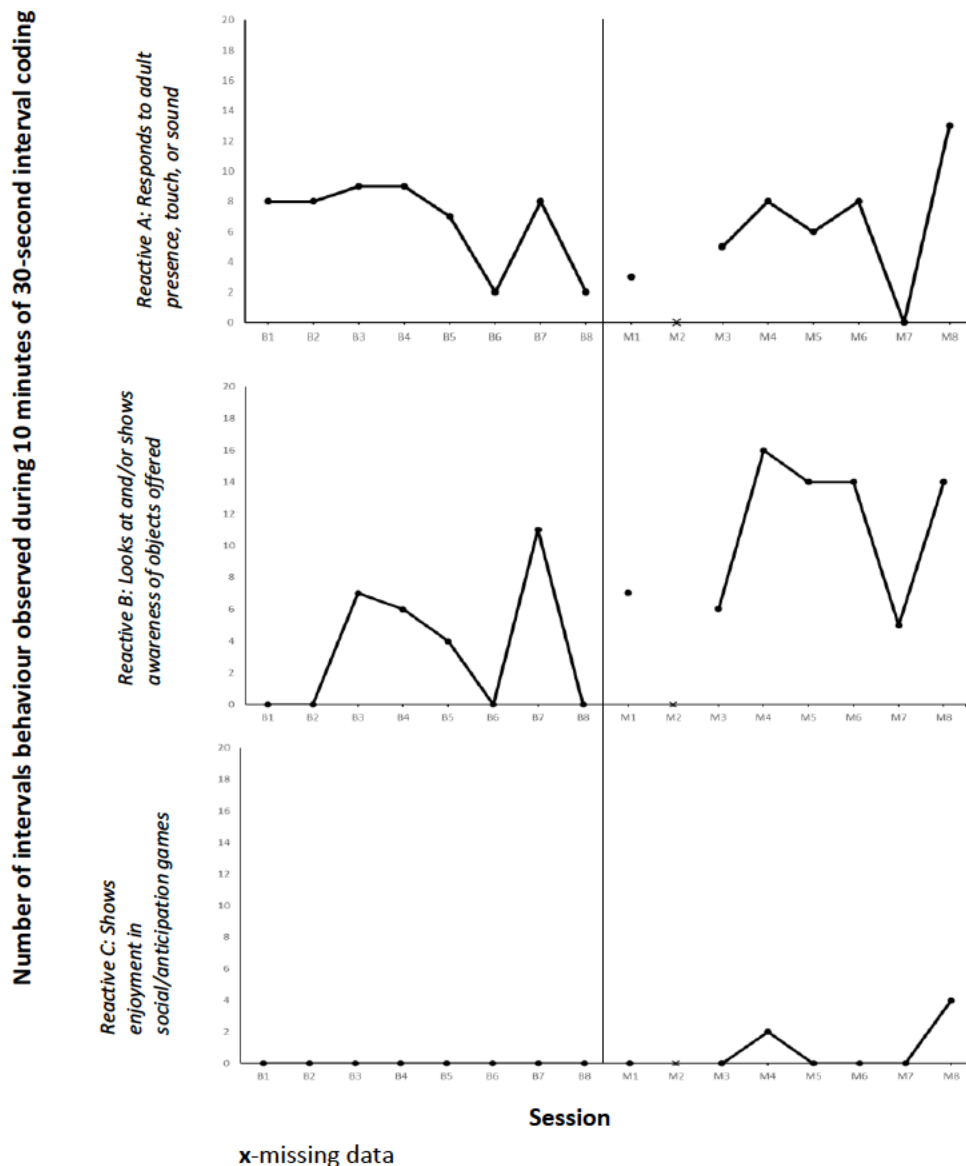
Mean average

A: Baseline = 13.9	Musical Play = 17.8
B: Baseline = 5.6	Musical Play = 16.1
C: Baseline = 2	Musical Play = 2.3

Playful responses to A: *adult presence, touch, or sound* were recorded more frequently during the Musical Play sessions than the baseline period (see Figure 20). The mean average number of intervals in which reactive play (A) was observed increased from an average of 13.9 during

the baseline session to 17.8 during the Musical Play sessions. Reactive responses to an object increased in frequency between M1 and M7, however after this point they began to decrease. This may be due to familiarity with the materials (musical instruments) used and the novelty factor of the instruments reducing. The average number of intervals in which a response to B: *objects offered* was recorded was higher during the Musical Play sessions (average 16.1) than the baseline period (5.6). Joel's responses to C: *social/anticipation games* were generally infrequent in both the baseline and intervention periods.

Figure 21: Potential expressions of playfulness: Reactive Play Pawel

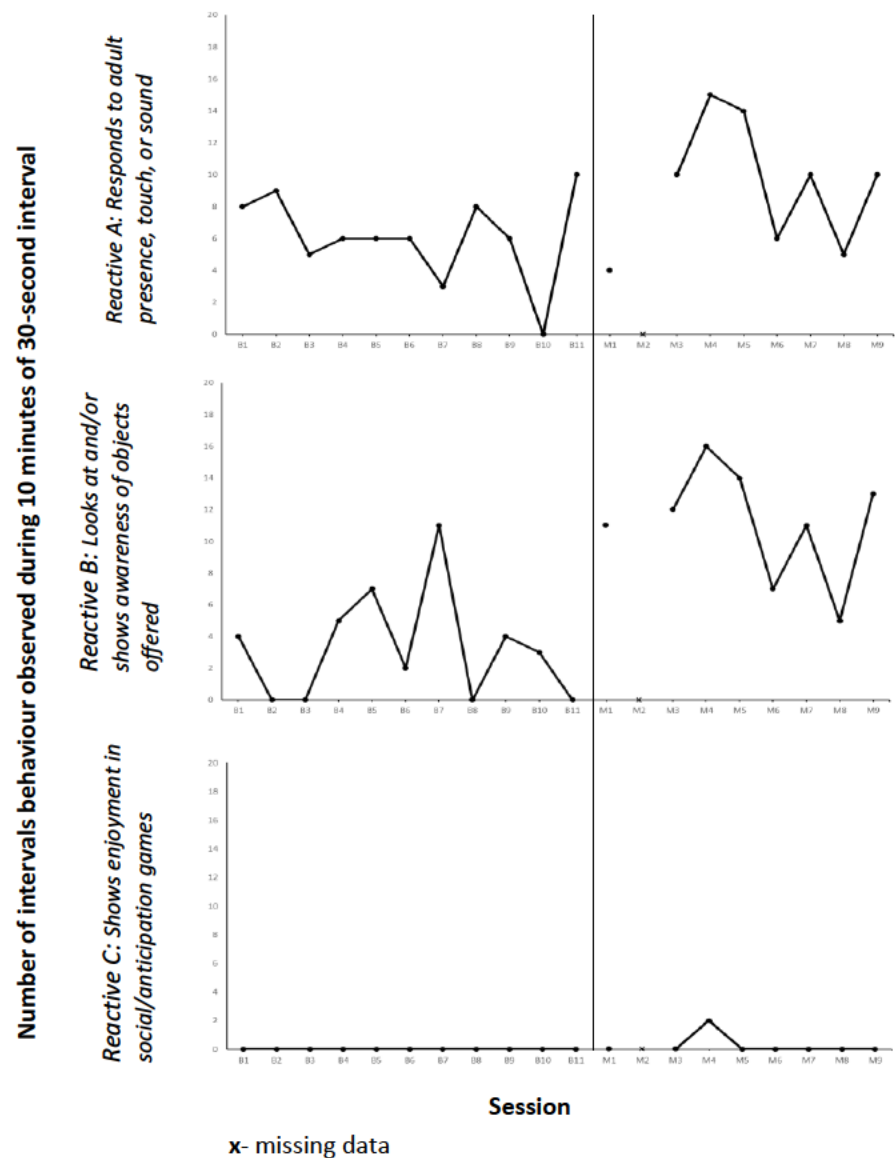


Mean average

A: Baseline = 6.6	Musical Play = 6.1
B: Baseline = 3.5	Musical Play = 10.9
C: Baseline = 0	Musical Play = 0.9

Potential playful responses to A: *adult presence, touch, or sound* were infrequent in both the baseline (average 6.6) and Musical Play sessions (6.1) (see Figure 21). Reactive play, in which Pawel B: *looked at or showed awareness of objects offered* increased during Musical Play sessions M3 to M6. The mean average number of intervals in which Pawel reacted to B: *objects offered* was higher during the Musical Play sessions (10.9) than the baseline period (3.5). Playful responses were observed more in relation to the musical instruments than the adult during the Musical Play sessions. There was some evidence of reactive play, in response to C: *social anticipation games* during the Musical Play sessions, there was no evidence of this during the baselining period.

Figure 22: Potential expressions of playfulness: Reactive Play Reepal



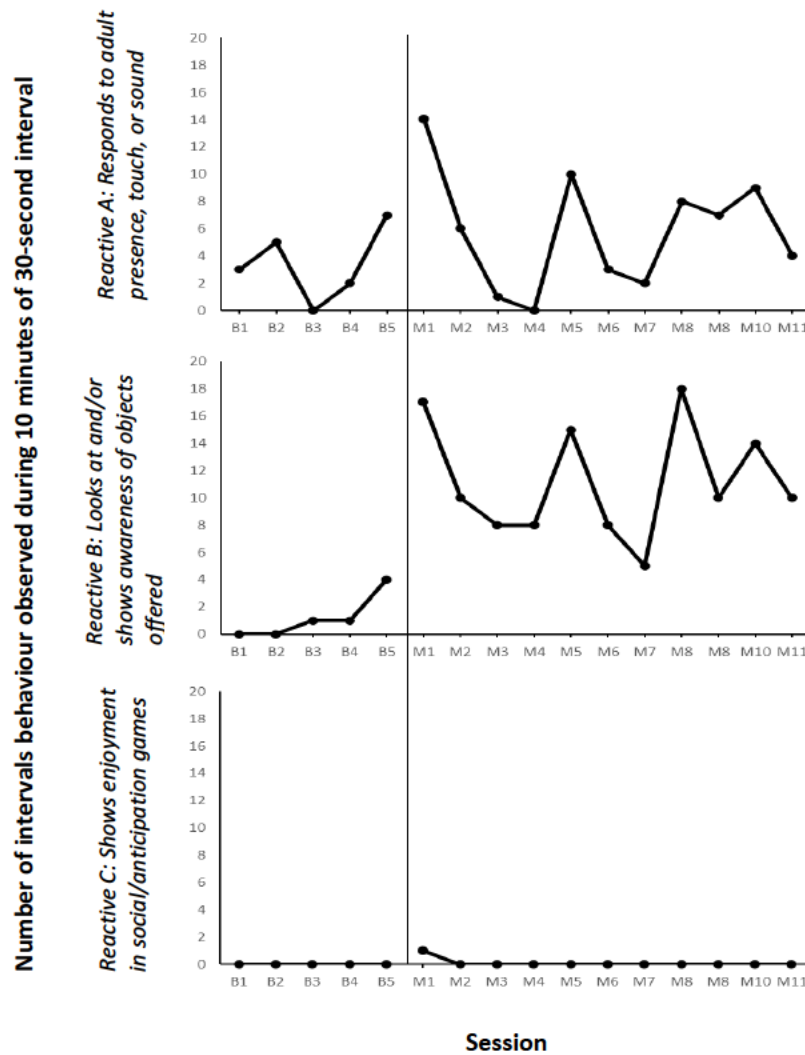
Mean average

A: Baseline = 6	Musical Play = 9.3
B: Baseline = 3.3	Musical Play = 11.1
C: Baseline = 0	Musical Play = 0.1

Reepal’s reactive play varied across both the baseline and the Musical Play sessions (see Figure 22). The average number of reactive play behaviours A: *in response to an adult*, were higher during the Musical Play sessions (9.3) than the baseline sessions (6). The average number of

responses observed for reactive play B: *objects offered*, was also higher during the Musical Play sessions (11.1) than the baseline (3.3). There were no instances of C: *enjoyment in social/anticipation games* recorded during the baseline period. There was one instance of this recorded during the Musical Play intervention (see Figure 22).

Figure 23: Potential expressions of playfulness: Reactive Play James



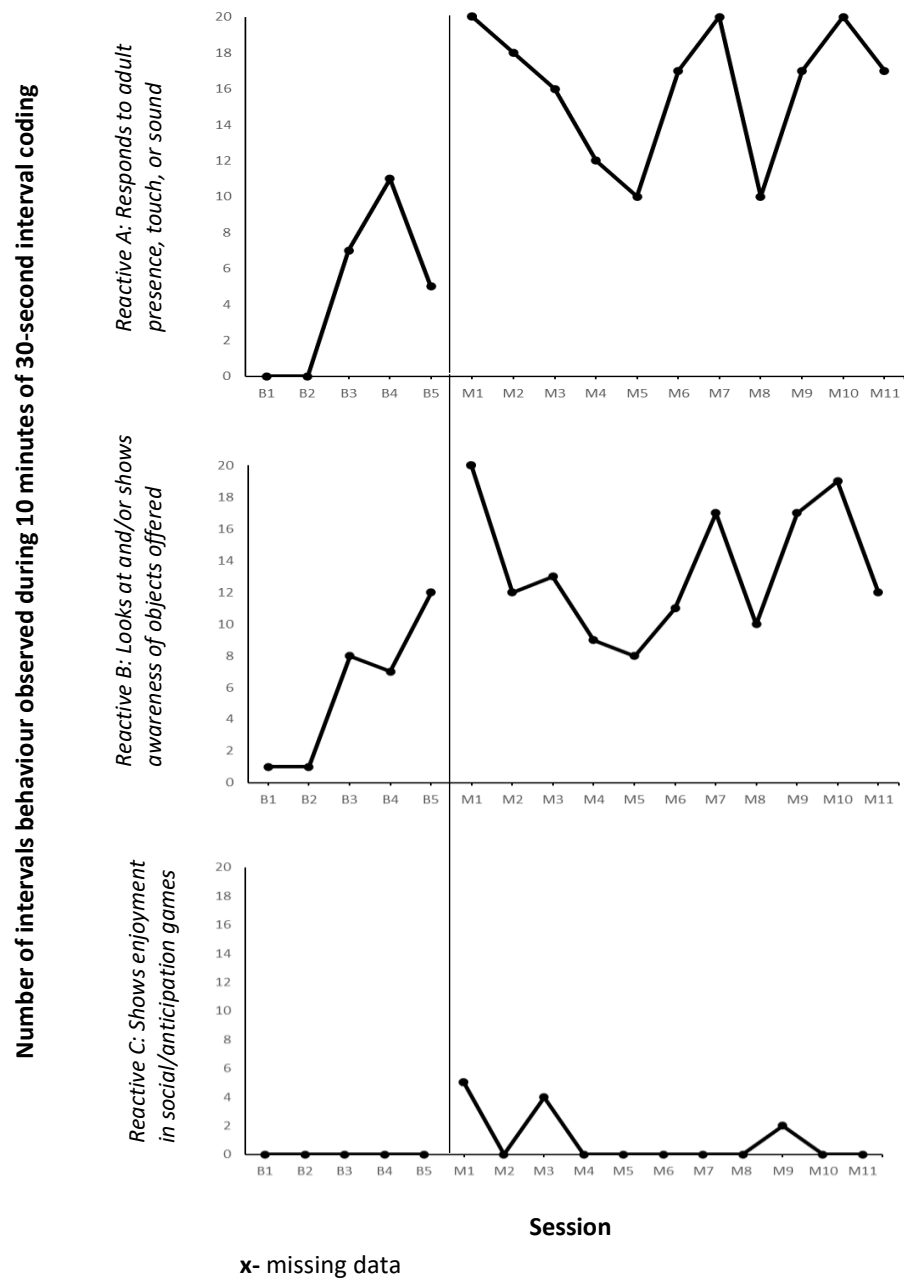
x- missing data

Mean average

A: Baseline = 3.4	Musical Play = 5.8
B: Baseline = 1.2	Musical Play = 11.2
C: Baseline = 0	Musical Play = 0.1

James' responses to A: *adult presence* and B: *objects offered* varied across the baseline and intervention period. Responses to A: *adult presence* were generally higher for James during the Musical Play sessions than the baseline period, except for M3 and M4 where responses were less frequently observed. The mean average number of intervals in which James was observed responding to A: *adult presence* was 3.4 during the baseline period and 5.8 during the Musical Play sessions. Responses to B: *objects offered* were higher during the Musical Play sessions than the baseline period. The average number of intervals in which responses to *objects offered* were observed was higher during the Musical Play sessions (11.2) compared with the baseline period (1.2), suggesting that James was more interested in the musical instruments used in the Musical Play sessions than the objects offered during the baseline period. Enjoyment in C: *social games* was observed once during the Musical Play sessions.

Figure 24: Potential expressions of playfulness: Reactive Play Taksheel



Mean average

A: Baseline = 5.8	Musical Play = 13.5
B: Baseline = 4.6	Musical Play = 16
C: Baseline = 0	Musical Play = 1

The number of reactive play responses observed during the Musical Play sessions were higher than the baselining period. Responses varied across the Musical Play sessions. The most responses were recorded during the first Musical Play session (M1). Responses to A: *adult presence* and B: *objects offered* followed a similar pattern in frequency of observation. The mean average number of intervals in which Taksheel was observed responding to A: *adult presence* was 5.8 during the baseline period. This was higher during the Musical Play sessions (13.5). The average number of intervals in which responses to B: *objects offered* was observed was also higher during the Musical Play sessions (16) compared with the baseline period (4.6). This suggests that the adult interaction style, and instruments used during the Musical Play sessions facilitated more opportunity for Taksheel to participate in reactive play than the baseline activities. Staff described both the musical instruments and the recorded instrumental track that seemed to best support Taksheel's playfulness. Referring to the instruments Jenny (Focus group 2) commented:

'But that's what he enjoyed the most. So, I did use to drum the most cause that's what I've got the most.'

Sara (Focus-group 2) also acknowledged the impact of the prerecorded instrumental music on Taksheel's reactive responses. Referring to *Festival at Village- Folk Tune [Ronu Majumdar]* she commented:

'the one with the chime and something like that Taksheel really enjoyed it, he was happy as soon as he had that music.'

These comments reflect staff perceptions of the impact of the musical elements of the Musical Play sessions on Taksheel's potential expressions of playfulness.

Enjoyment in C: *social games* was observed less frequently than the other reactive play categories, however this is likely due to the approaches used and interactions offered by the staff play-partner.

6.2.2 Overall findings on reactive play for Setting 2

There were mixed findings across participants. Reactive A: *Response to adult presence* were higher during the Musical Play sessions for Reepal, Taksheel and Joel. Responses remained

similar across the baseline and Musical Play sessions for Pawel and James. Reactive play behaviours were affected by the staff play-partner. For Robynn there were less responses to A: *adult presence*, observed during the Musical Play sessions supported by Bina in comparison to her baseline. However, for sessions supported by play-partner 2 (Helen), responses were similar to the baseline period and were observed frequently throughout the Musical Play sessions.

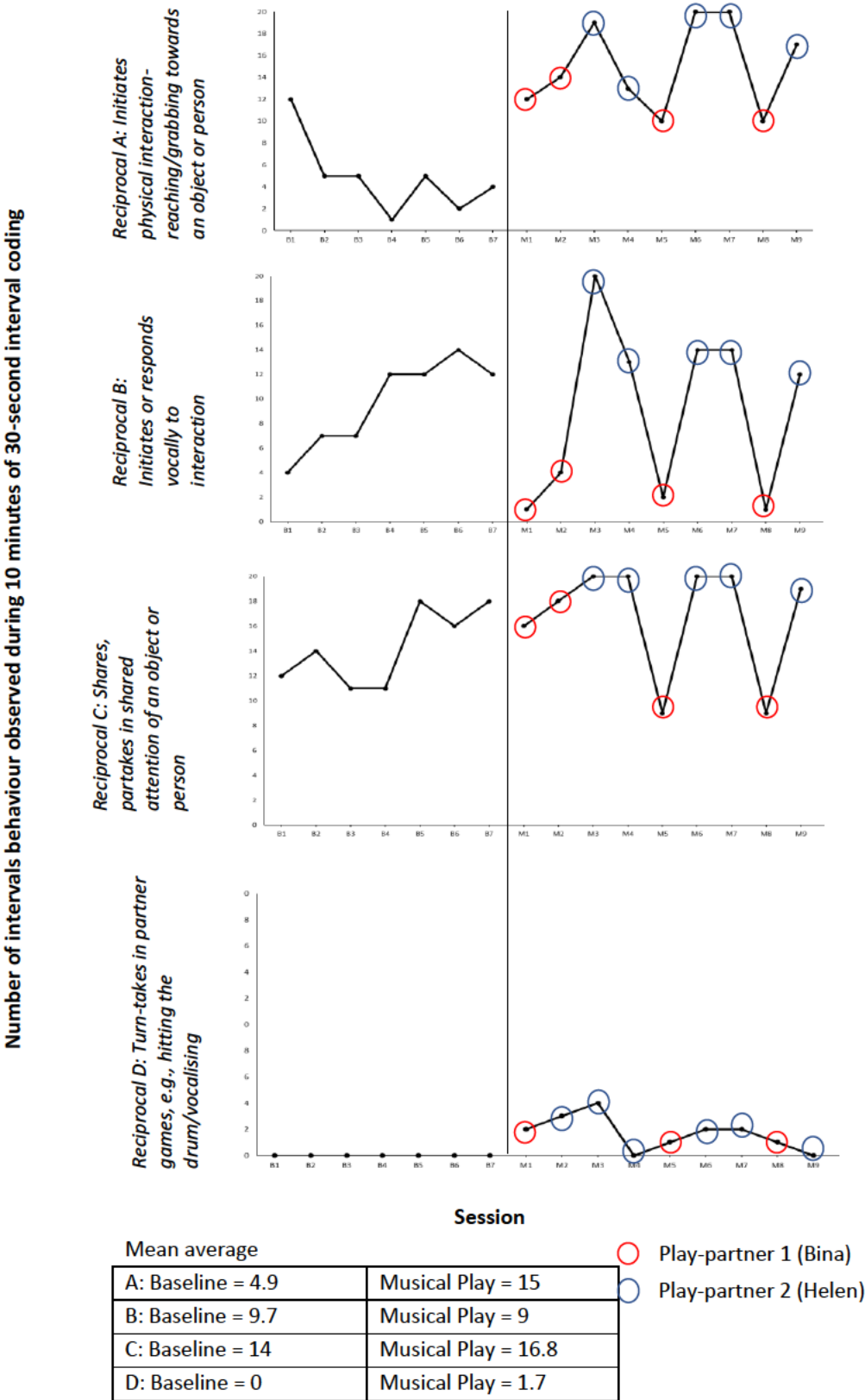
More reactive playful behaviours in B: *response to an object offered*, were observed for all participants during the Musical Play sessions than the baseline period, suggesting that participants found the resources used during the Musical Play sessions more interesting than those used during the baseline period.

There were mixed results when considering the impact of the Musical Play sessions on participants C: *enjoyment in social/anticipation games*. Playful responses, (C), were observed less frequently for Robynn during the intervention period. However, for most participants (n=4), C: *enjoyment in social/anticipation games* was not observed during the baselining session but was recorded during the Musical Play intervention. This type of reactive play is dependent on the interactive style and approaches of the adult-play partner. Lower numbers of intervals in which reactive play (C) was recorded may be because adults did not use C: *social/anticipation games* during the sessions. The following section presents the findings on reciprocal playfulness for the participants in Setting 2.

6.2.3 Reciprocal Play

As in Setting 1, during reciprocal play, the individual with PMLD takes a more active part in the play activity with the adult play-partner. Joint activity, imitation, and turn-taking, ***in what is perceived to be a playful or positive manner***, begin to emerge. Reciprocal play was coded using the descriptors outlined earlier in this chapter (see Table 30).

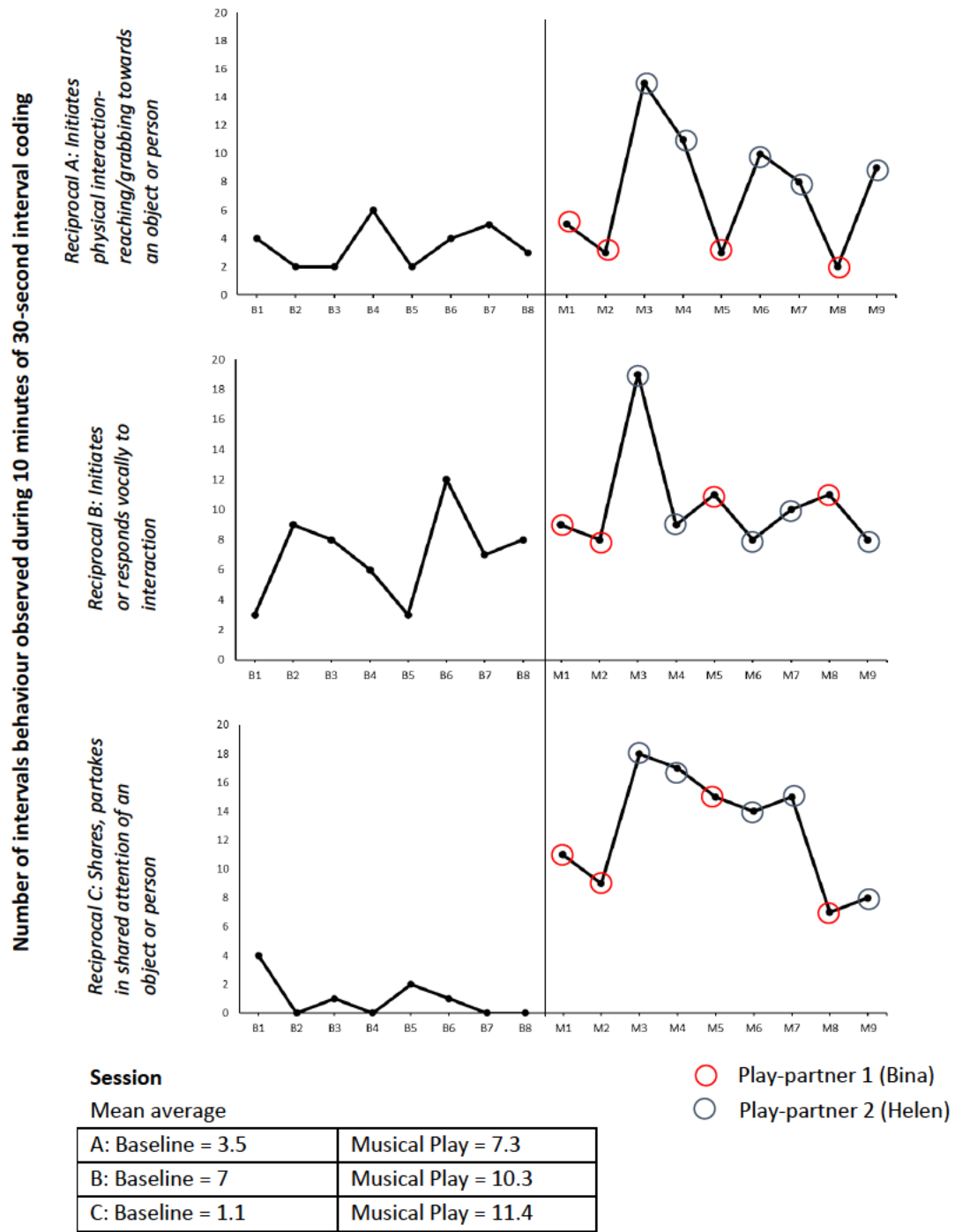
Figure 25: Potential expressions of playfulness: Reciprocal Play Robynn



There was inconsistency in the reciprocal playful behaviours; A, B, and C recorded for Robynn. This is more prominent during the Musical Play sessions than during the baseline period (see Figure 25). After further consideration of the results the changes in frequency of reciprocal play behaviours were consistent with a change in supporting staff play-partner (see Figure 25). When staff play-partner 1 (Bina) was supporting Robynn, expressions of playfulness were less frequently observed than when staff play-partner 2 (Helen) was supporting the session.

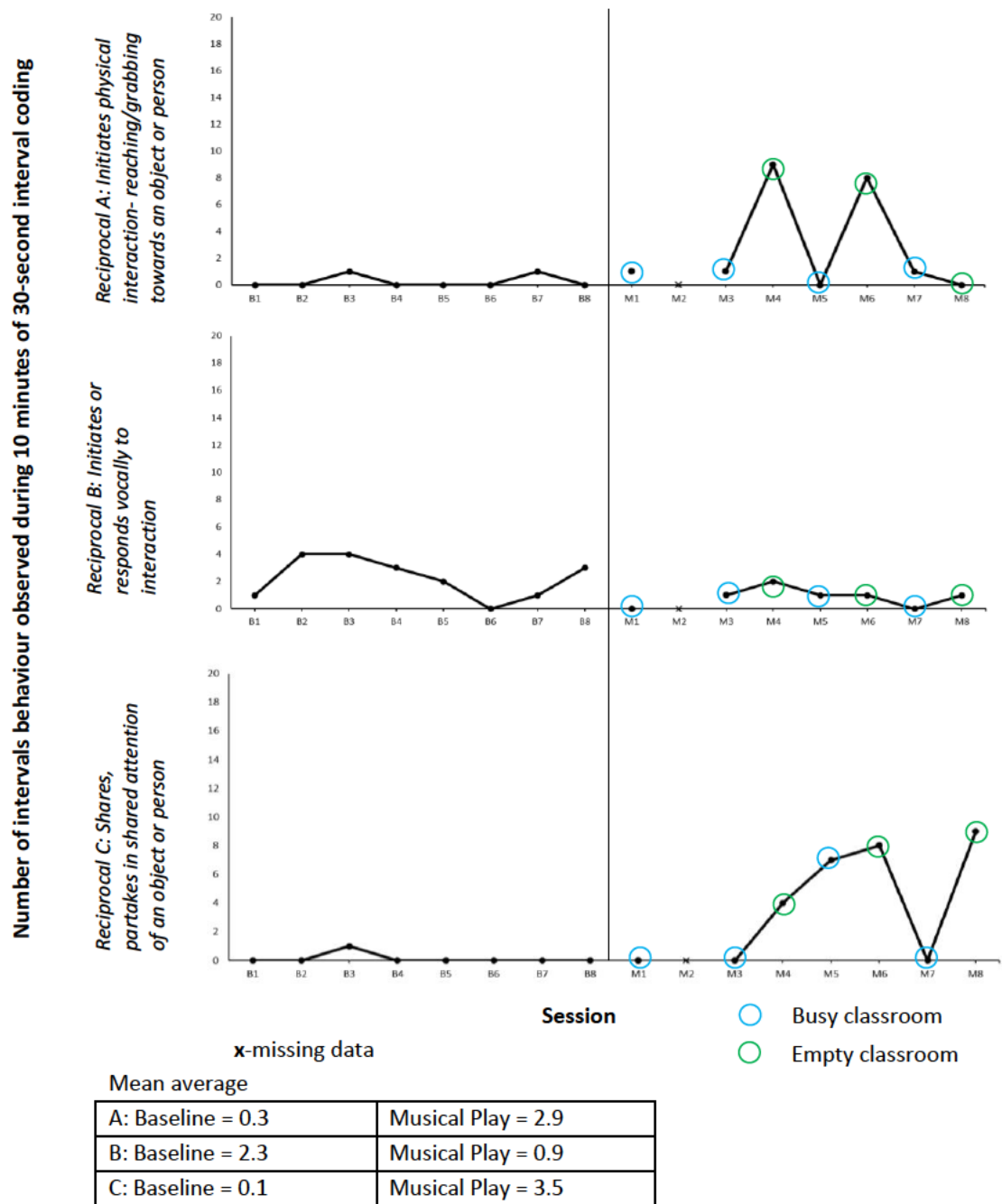
In some Musical Play sessions (n=4) C: *Shared attention of an object or person* was observed during every 30s interval. D: *Turn-taking* was observed during the Musical Play sessions. This reciprocal playfulness was not observed during the baseline period. Musical Play sessions may have provided more opportunities for Robynn to turn-take during play than the baseline activities.

Figure 26: Potential expressions of playfulness: Reciprocal Play Joel



Although not as prominent as Robynn's (see Figure 25), there is inconsistency in Joel's playful behaviours during the Musical Play sessions. A lower number of playful expressions were observed when Joel was supported by staff play-partner 1 (Bina) (see Figure 26) than play-partner 2 (Helen). This was most prominent for A: *initiates physical interaction-reaching/grabbing towards an object or person*. There were a higher number of playful behaviours observed for C: *shares, partakes in shared attention of an object or person*, during the Musical Play sessions compared with the baseline period. However, the frequency of responses decreased over the period of the intervention. One reason this may have occurred is because the novelty factor of the instruments, or the sessions, diminished for Joel over the period of the intervention. This decrease in expressions of playfulness is similar to Joel's reactive play presented earlier in this chapter (see Figure 20).

Figure 27: Potential expressions of playfulness: Reciprocal Play Pawel



The frequency of Pawel’s reciprocal playful behaviours varied across sessions. This was particularly noticeable for A: *initiating physical interaction*. To better understand this finding the video footage was revisited, and any obvious variables recorded. Due to limited availability

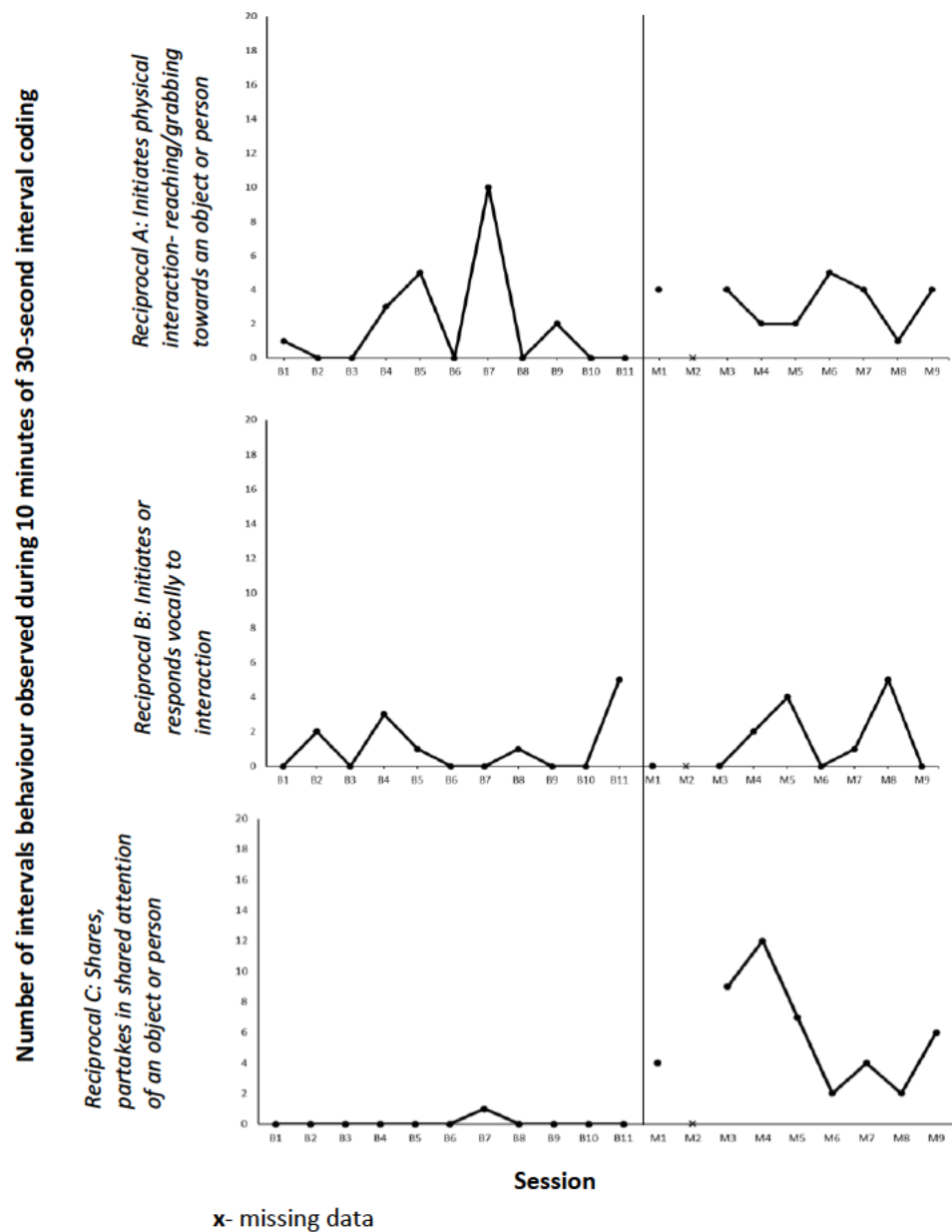
of space in Setting 2, some of Pawel's Musical Play sessions took place in his usual classroom, which was busy and noisy. These sessions are circled in blue (see Figure 27), all other sessions, circled in green, took place in an empty classroom. The findings suggest that Pawel's reciprocal playful behaviours (A) may have been affected by the environment in which the Musical Play sessions took place. When the sessions took place in a busy classroom, in comparison to an empty classroom with minimal distractions (see Figure 27), the number of playful behaviours (A) observed were lower.

Pawel's B: *vocal* responses were generally lower during the Musical Play sessions than the baseline period. His C: *shared attention* increased during the Musical Play sessions, however, with the exception of M5, it seems this may also have been affected by the environment in which the intervention took place. The impact of the environment on the playfulness of the participants during the Musical Play sessions was also commented on during the focus-group interviews. More specifically, Julie (Focus Group 3) reported that:

'definitely my group with the two I was with, when you take them out the classroom and you, the more one-to-one, you do get more from them. 'Cause not the distractions of the class.'

A score of 0 was recorded for D: *turn-takes in partner games*- in the baseline and Musical Play sessions for Pawel. This data has been omitted from the graph (see Figure 27) to reduce visual clutter.

Figure 28: Potential expressions of playfulness: Reciprocal Play Reepal



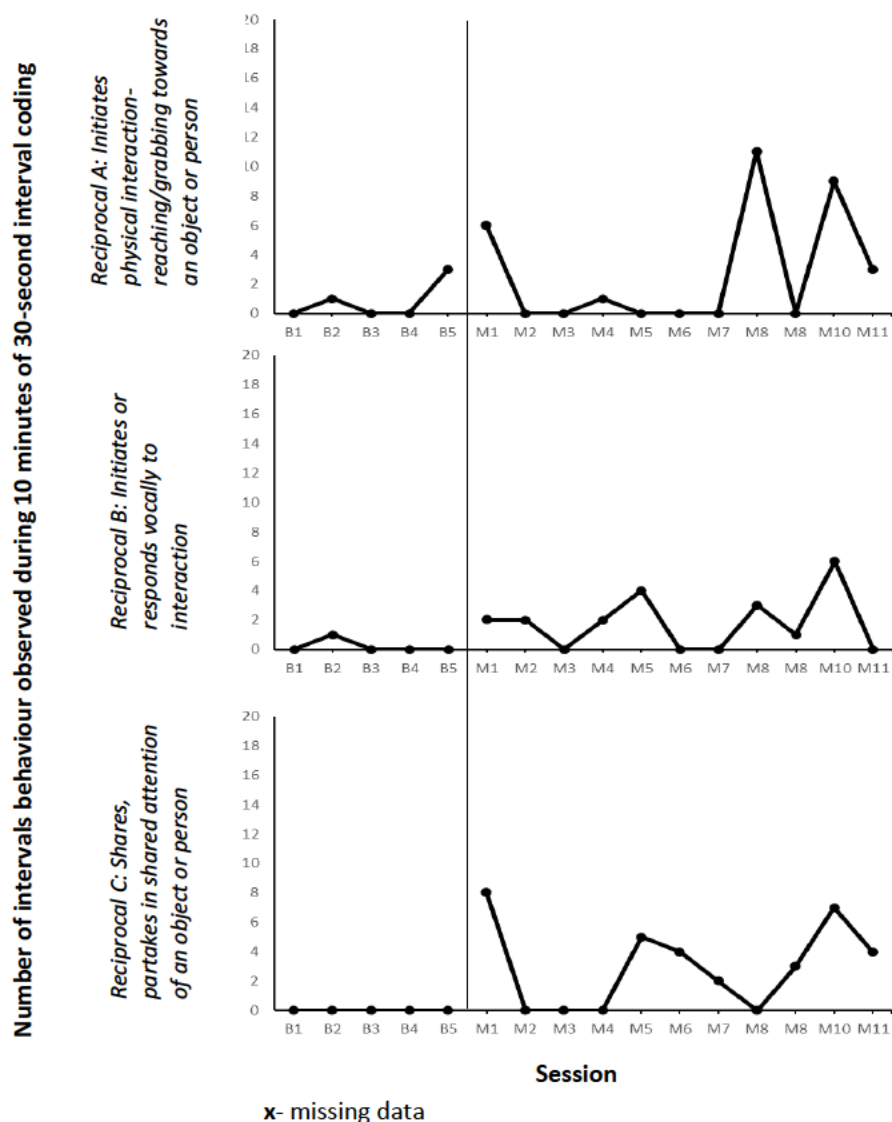
Mean average

A: Baseline = 2	Musical Play = 3.3
B: Baseline = 1.1	Musical Play = 1.5
C: Baseline = 0.1	Musical Play = 5.8

There was little difference between Reepals’s reciprocal *physical* or *vocal* interactions (A and B) between the baselining period and the Musical Play sessions. Most change can be seen in

Reepal's C: *shared attention of an object or person*. There was one instance of C: *shared attention*, recorded for Reepal during the baseline period (see Figure 28), however this behaviour was observed in every Musical Play session. There were no instances of D: *Turn-takes in partner games- e.g., hitting the drum/vocalising in an exchange with the play-partner, involving at least two rounds of turn-taking*, observed for Reepal in either the baseline or Musical Play sessions. This data has been omitted from the graph (see Figure 28) to reduce visual clutter.

Figure 29: Potential expressions of playfulness: Reciprocal Play James



Mean average

182

A: Baseline = 0.8	Musical Play = 2.7
B: Baseline = 0.2	Musical Play = 1.8
C: Baseline = 0	Musical Play = 3

James' reciprocal playfulness varied throughout the Musical Play sessions (see Figure 29). However, there were a higher number of instances of A: playful *physical interaction* and B: *vocal interaction* observed during some Musical Play sessions than the baseline. Furthermore, there was evidence of C: *shared attention of an object or person* recorded during most (n=7) Musical Play sessions. There were no occasions of C: *shared attention* observed during the baseline period.

James' reciprocal play was described during the focus-group interviews:

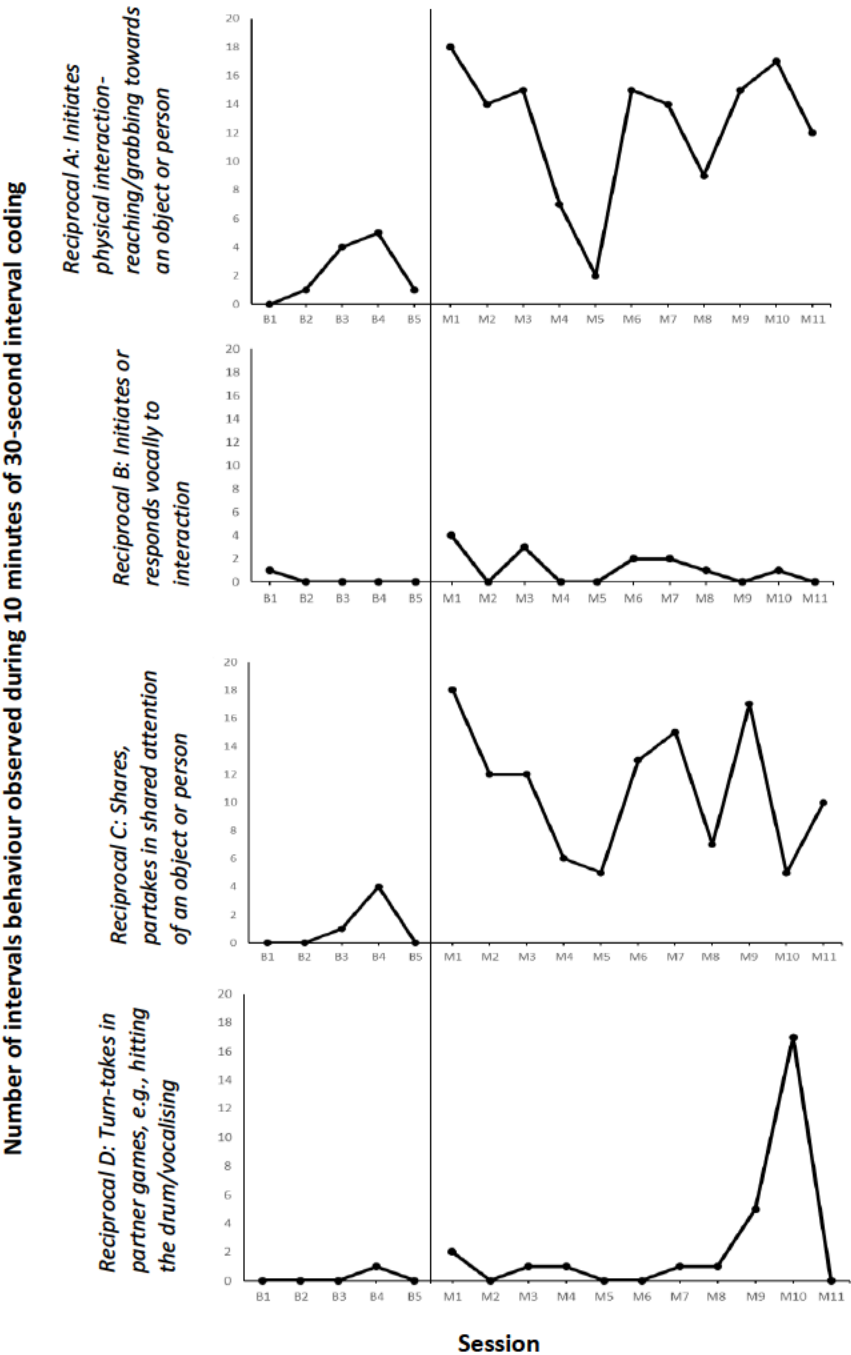
'You could see it in the filming, James two times he impressed me actually. He was really good, he really enjoyed it. He was laughing and he just actually, he was doing the things and he was really happy. Just he was fully involved with that.'

Sara (Setting 2; Focus Group

2)

Although this comment acknowledged that reciprocal play was rare for James, it also suggested that James was able to take part in and enjoy reciprocal play during the Musical Play sessions. There were no instances of D: *turn-takes in partner games* observed during the baseline or Musical Play sessions for James. This data has been omitted from the graph (see Figure 29).

Figure 30: Potential expressions of playfulness: Reciprocal Play Taksheel



Mean average

A: Baseline = 2.2	Musical Play = 12.5
B: Baseline = 0.2	Musical Play = 1.2
C: Baseline = 1	Musical Play = 10.9
D: Baseline = 0.2	Musical Play = 2.5

Taksheel's reciprocal play varied across the Musical Play sessions. However, for all categories Taksheel demonstrated playful behaviours on more occasions during the Musical Play sessions than the baseline period. This is most evident in Taksheel's A: playful *physical interaction* and his C: *shared attention* (see Figure 30). Taksheel's B: *vocalisations* and D: *turn-taking* were observed less frequently during the baselining period and the Musical Play sessions than other reciprocal behaviours.

6.2.4 Overall findings on reciprocal play for Setting 2

Reciprocal behaviours varied across all participants. For two participants, James and Pawel, reciprocal playfulness was observed infrequently across both the baseline and Musical Play sessions. These participants have the most restricted physical abilities across the group and appeared to have lower cognitive skills too. For other participants, Taksheel, Joel and Robynn, reciprocal playful exchanges occurred often within the baseline and Musical Play sessions. The findings suggested that most participants (n=4) A: *initiated physical interaction*, more during the Musical Play sessions than the baseline period. There were mixed results across the sessions on the effect of the Musical Play on the participants playful B: *vocalisations*.

C: *Shared attention* was observed more during the Musical Play sessions than the baselining period. This increase was observed across all participants, suggesting that the interactive style of the staff, and the instruments used, created opportunities for more shared attention than those employed during the baseline activities. Instances of D: *turn-taking* were limited, two participants, Robynn and Taksheel, were observed turn-taking during the Musical Play sessions. However, for all other participants (n=4) turn-taking was not observed in any of the sessions.

There were several additional variables which appeared to affect the reciprocal playfulness observed during the Musical Play sessions. These variables included the staff play-partner, which staff member was supporting the session, and the environment, where the session took place. For two participants, Robynn and Joel, the number of playful behaviours observed during reciprocal play was affected by the staff play-partner facilitating the session. Similarly, for Pawel, there was some correlation between the environment and the playful behaviours

observed. When Pawel accessed the Musical Play sessions in a busy classroom, fewer playful behaviours were recorded.

6.3 Discussion: Reactive and Reciprocal Play

Findings presented in this chapter aimed to explore how the introduction of Musical Play sessions effected the potential expressions of playfulness of people with PMLD. The findings were collected across two settings, with primary aged children (6-11 years) and young adults with PMLD (19-22 years). The number of Musical Play sessions students with PMLD took part in varied; the least number of intervention sessions was six and the most was thirteen (see Table 28 and Table 31). Sessions were delivered by staff play-partners who had pre-established relationships with the participants. For most student participants (n=9) the sessions were delivered by two different staff play-partners from their pre-existing class teams. For two student participants, Reepal and Pawel, the sessions were delivered by the same staff play-partner throughout the intervention. There were mixed findings across all the coded categories and all the participants, and several variables that impacted the effects of the Musical Play sessions on the playfulness of participants with PMLD in this study.

6.3.1 Reactive play

Overall, there were a higher number of reactive play behaviours observed during the Musical Play intervention than the baselining period in both settings. For a couple of participants (n=2), Kaden and Chaviv, there was a gradual increase in the number of reactive expressions of playfulness (A: *in response to adult presence* and B: *objects offered*) observed throughout the period of intervention (see Figure 11 and Figure 14). For most participants (n=8), reactive play behaviours fluctuated throughout the period of intervention. In a previous small study, by Rushton and Kossovaki (2020), five participants (aged 8-10 years) took part in weekly Musical Play sessions. The study, which was conducted over a period of five-weeks, found that reactive responses increased between participants' first and last Musical Play sessions. The findings from this study do not always support the findings of Rushton and Kossovaki (2020), as

potential expressions of playfulness did not always increase from the beginning to the end of the intervention for each participant.

It is not surprising that the playful responses of most participants (n=8) varied across both the baseline and the intervention period, nor was it expected that there would be a trend of increased expressions of playfulness as the intervention period progressed. People with PMLD often have complex medical needs resulting in unpredictable states of wellbeing (Davis et al., 2018). This was the case for most participants (n=10) involved in this study. Complex medical needs may have impacted on the level of arousal of participants, and their availability and readiness to play (Welsh Assembly Government (WAG), 2006). As the Musical Play intervention was delivered at set times/days, to improve reliability, it may have been implemented when participants wellness, arousal level or readiness to play was not always optimal. Furthermore, the capabilities of individuals with PMLD are often variable across time and situation (Weston and Ware, 2018), and therefore rarely consistent. Individuals may be unable to recall and build on past play experiences (Imray and Orr, 2015), and as a result each Musical Play session may have been experienced as if for the first time for some participants. Whether this is the case, or not, does not nullify the potential expressions of playfulness, and play experiences of the individuals involved. Results presented in this chapter, evidenced that reactive play, of all participants, was observed more often during the Musical Play sessions, this was seen most clearly in participants responses to the musical instruments.

Reactive play, and more specifically, B: *objects offered* was observed in more intervals during the Musical Play sessions in comparison to the baseline sessions across both settings. The increase was evident across all participants. This suggests that the musical instruments used during the Musical Play sessions were stimulating and of interest to the participants, perhaps more so than the objects and materials used during the baseline period. As people with PMLD may not be spontaneously motivated to play (Imray, 2017), the instruments used during the Musical Play sessions provided a stimulus or 'offer' to be playful.

Instruments as toys

The Musical Play Framework used a selection of instruments; see Figure 6, during the intervention sessions. These instruments, as advised by Imray and Orr (2015), were selected for their tactile variance, responsiveness, and timbre, as external stimuli to encourage feelings of playfulness. Findings from across both settings showed an increase in playful responses to *objects offered* during the Musical Play sessions in comparison to the baseline period. This contrasts with findings from previous studies investigating the toy play of children with PMLD (Thompson and McFerran, 2015). This previous study found that there was little difference in the number of communicative behaviours recorded when comparing the offering of a preferred toy or music therapy session, using musical instruments, to engage with participants with PMLD. The reason for this difference in findings may have been because Thompson and McFerran (2015) used an individual's 'preferred' toy during the toy play sessions, which may have elicited higher communicative responses. Whereas, in this research, the baseline sessions did not necessarily use an individual's particular preferred toy or object, thus facilitating fewer playful responses. Brodin (2007) highlighted the importance of using interesting and motivating materials in supporting play opportunities for people with PMLD, and findings from this research suggest that musical instruments potentially fulfil this role.

Whilst the data suggests that the musical instruments used in the intervention sessions were of interest to the participants, the increase in the amount of reactive play behaviours, in comparison to the baseline, should be interpreted with caution. It should be noted that some baseline sessions included activities that did not use many objects/resources, and so this may be one of the reasons that the playful responses to B: *objects offered* were higher during the Musical Play sessions. However, it is likely that if these objects (musical instruments) had not been of interest to participants, they would not have facilitated the frequency of playful responses recorded in this study.

6.3.2 Reciprocal Play

Presentations and frequency of reciprocal play varied across participants. During reciprocal play joint activity, imitation, and turn-taking, begin to emerge (White, 2006). Within this study there were two distinct groups of individuals, those for whom reciprocal play was often demonstrated (n=4), and those who were not often observed taking part in reciprocal play (n=6). Reciprocal play was more evident in Setting 2 than in Setting 1. Generally, there were fewer intervals in which reciprocal play was observed in comparison to reactive play across both settings. This is in line with the findings of previous research (Rushton and Kossyvaki, 2020). A lower number of reciprocal play behaviours, in comparison to reactive play behaviours, were observed in both the baseline and intervention period for all participants. This may reflect the complexity of reciprocal play exchanges and the cognitive and physical demands of participating in play in this way.

Physical Interaction

Within this study reciprocal play (A), *initiates physical interaction; reaching/grabbing towards an object or person*, was coded for during the baseline and Musical Play sessions. Small and subtle movements of participants towards the adult or object, with the potential intent of playfulness, were coded for this category. However, for some participants (n=4) controlled movements of their upper body were not thought to be established. Less observations of *physical interaction* were recorded for these participants during play.

People with physical disabilities, including those with PMLD, may be unable to reach for, or move toward, an object or adult during play activity. This is likely to impact on their play experiences (Smidt and Cress, 2004) and their ability to initiate playful exchanges with others who are outside their immediate proximity (Sonday and Gretschel, 2016). These factors likely effected the reciprocal play of participants within this study. In Setting 1 there were fewer intervals of *physical interactions* observed during the Musical Play sessions than the baseline period. In Setting 2 there were generally more intervals in which *physical interactions* were observed during the Musical Play sessions than the baseline period. Likely the positioning of

the staff play-partner and the environment in which the sessions took place also impacted on these responses.

The environment

The Musical Play Framework was designed to be implemented in environments which were free from external noise pollution and distractions. However, due to the limited space available in Setting 2, some sessions were implemented in the participants busy classroom.

Unsurprisingly this impacted on the amount of reciprocal play observed during the intervention period. When sessions were delivered in the busy classroom environment the number of intervals in which reciprocal play was observed was less than when the sessions were implemented in a separate space (empty classroom) (see Figure 9). This finding supports previous research that emphasises the importance of purposeful environments for creativity and responsiveness when supporting people with PMLD (Goodwin, 2019; Ware, 2012).

Research acknowledges that opportunities for play and playfulness are increased when there is a purposeful environment, conducive to play activity (Acer et al., 2016; Brewer, 2004; Lester and Russell, 2010). However, a busy environment, typical of early child's play, may distract or overwhelm individuals with PMLD (Watson, 2018) resulting in the playful offer, provided by the adult and/or object, being missed or overshadowed by another stimulus. Differences in sensory impairments and processing for people with PMLD may affect the way in which stimuli is received and processed (Grace, 2017). The idea of a purposeful environment, with reduced distractions (Ware, 2012), to facilitate opportunities to play for people with PMLD may seem counterintuitive to the fun, lively, and busy experiences of typically developing children's play (Serman et al., 2020). Nevertheless, this type of environment facilitated more expressions of reciprocal play between the participant with PMLD and their staff play-partner in the present study.

Staff play-partners

Attitudes and personal attributes of adults supporting the play experiences of people with PMLD affected the play experiences of participants within this study. The impact of the staff

play-partner can be seen clearly in the reciprocal playfulness of Robynn and Joel (see Figure 25 and Figure 26). Reciprocal play varied for Robynn and Joel depending on the adult facilitating the Musical Play sessions. Reciprocal play involves play activity with the adult-play partner and is the beginning of a to-and-fro playful exchange. The availability and responsiveness of play-partner 2 likely led to increased opportunities and motivation for reciprocal play. This is in line with observations made by Watson and Corke (2015). Additionally, opportunities for reciprocal play may have been missed by play-partner 1 due to the subtle ways individuals with PMLD, such as Robynn and Joel, communicated their playfulness (Watson, 2020).

There was a notable difference between the natural demeanour and attributes of play-partner 1 and 2, Bina and Helen, their attitudes towards the research project, and perhaps their value of play for people with PMLD. Play-partner 2 (Helen), used theatrical energy, exaggerated, and animated interactions during the Musical Play sessions. These methods are highlighted as effective ways of playfully engaging people with PMLD within the literature (Watson and Corke, 2015) and the impact of these approaches are evidenced in the data generated within this study. As with all communication, this two-way reciprocal play process was dependent on the skills, approaches, and availability of both parties. Adult play-partners who join in with and encourage playful responses are more likely to facilitate opportunities for reciprocal play (McConkey, 2006). However, playfulness varies between adults, and thus the play experiences of people with PMLD are likely to be dependent on the playful nature of their supporting adult (Corke, 2012).

Feeling playful?

There were difficulties establishing a baseline of playfulness for participants across both settings. This was due to participant absences, general well-being, and their arousal levels. Establishing a baseline of communication and behaviour for people with PMLD may take a longer period than the suggested five data collection points (What Works Clearing House, 2022) adopted within this research. Due to their complex medical needs, the baseline state of an individual with PMLD may fluctuate more than the typical non-disabled population. This

means that to establish or understand the norm, or baseline of an individual, a sustained period of observation is needed before any intervention is implemented.

Furthermore, when implementing an intervention with people with PMLD their fluctuating health and wellbeing is likely to impact on the data collected. People with PMLD often have complex medical conditions which result in more frequent, and longer periods of absence from education, than non-disabled people (Department for Education, 2016). Two participants with PMLD recruited for this study were unable to contribute to the data included in this results chapter because of extended illness and hospitalisation. Additionally, all participants were absent on at least one occasion during the baseline or Musical Play sessions, and for many participants absences were more frequent. Therefore, to effectively collect and generate data with people with PMLD, longer periods of data collection are necessary to accommodate for the increased likelihood of participant absence.

The following section presents the results for the second research question which considered the impact of the Musical Play sessions on peer-awareness and peer play.

6.4 Research Question 2. Musical Play and peer-play

This section presents the results for the second research question for this phase of the study. This research question looked more specifically at peer play. Peer-play involves playful activity between two or more peers, those of a similar age group (Beauchamp and Anderson, 2010). Peer-awareness relates to the awareness of the presence of a peer, and is categorised within the coding descriptors of this study as 'observer play' (see Table 34). In this study peer-play included two participants with PMLD and a staff participant who had been trained in using the Musical Play Framework.

The second research question was:

- How does Musical Play impact peer-awareness and peer-play opportunities for students with PMLD?

Peer-play was coded for using the categories and descriptors presented in Table 34.

Table 34: Peer-play descriptors (adapted from White (2006))

Peer-play	Description
<i>Observer Play</i>	Shows awareness through turning, moving, or attending towards peer, and/or gives attention to a shared play object/s between peer and self.
<i>Parallel Play</i>	Displays playful responses to a shared play activity alongside, and with awareness of peer , but without making contact or connection vocally or physically.
<i>Associative Play</i>	Responds positively to peer presence, making contact through vocal and/or physical interchanges, and/or shows awareness of connection to peer through use of the shared play object/s.

The findings in this section have more missing data points than the previous graphs. This is because in sessions where only one of the two participants was present no data on peer

interactions could be collected, a red 'x' is used to represent this missing data. Additionally, it was difficult to collect baseline data for peer interactions, as for some individuals no activity which facilitated peer interactions was observed across the baseline period. It was interesting to note that in typical classroom-based activities in Setting 1 peer interaction was not always facilitated or available. As a result of missing data, mean averages are not included for the graphs from Setting 1 in this section of results. Furthermore, due to missing quantitative data, additional qualitative data, from the staff focus-group interviews, is used to support the findings for this research question.

In line with the rest of this chapter the results are presented separately for each setting. After the results for both settings are summarised and discussed. The results for Setting 1, the primary-aged special school are presented first.

6.4.1. Setting 1

Peer pairings for Setting 1 are described in Table 35 below.

Table 35: Peer pairings Setting 1

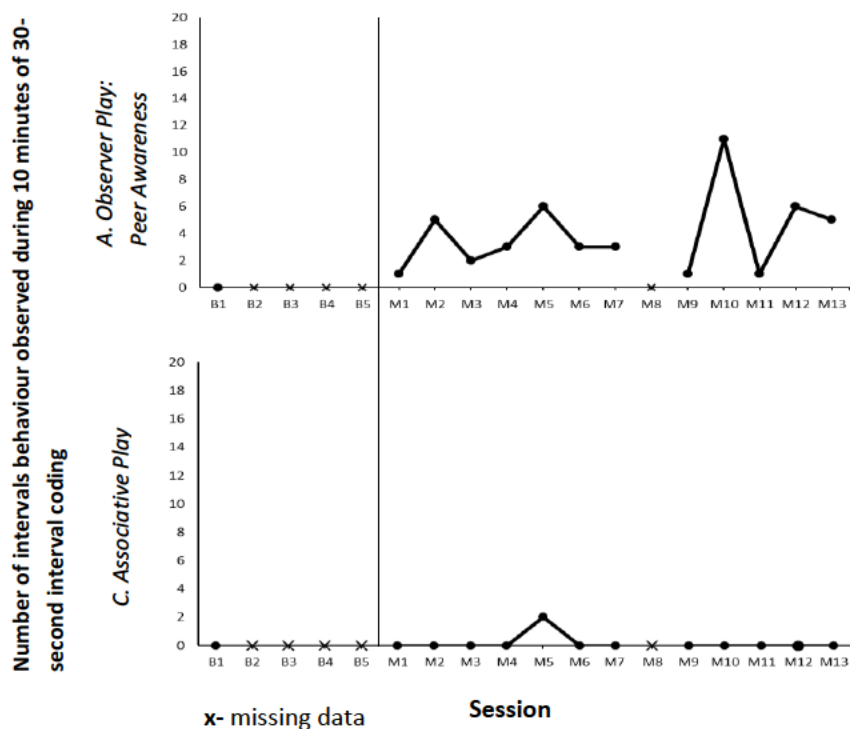
Child 1	Child 2	Staff-play partners
Kaden	Jordan	Isabelle or Ruth
Hamza	Chaviv	Beth or Louise

Kaden and Jordan: peer-play

Kaden and Jordan both use wheelchairs and Acheeva beds throughout the school day. In both the baseline and the Musical Play sessions the equipment that Kaden and Jordan were using varied. In some sessions Kaden and Jordan were both using wheelchairs, in others one of the participants was using a wheelchair and the other an Acheeva bed. In some sessions both participants were using an Acheeva bed. The equipment participants were using was

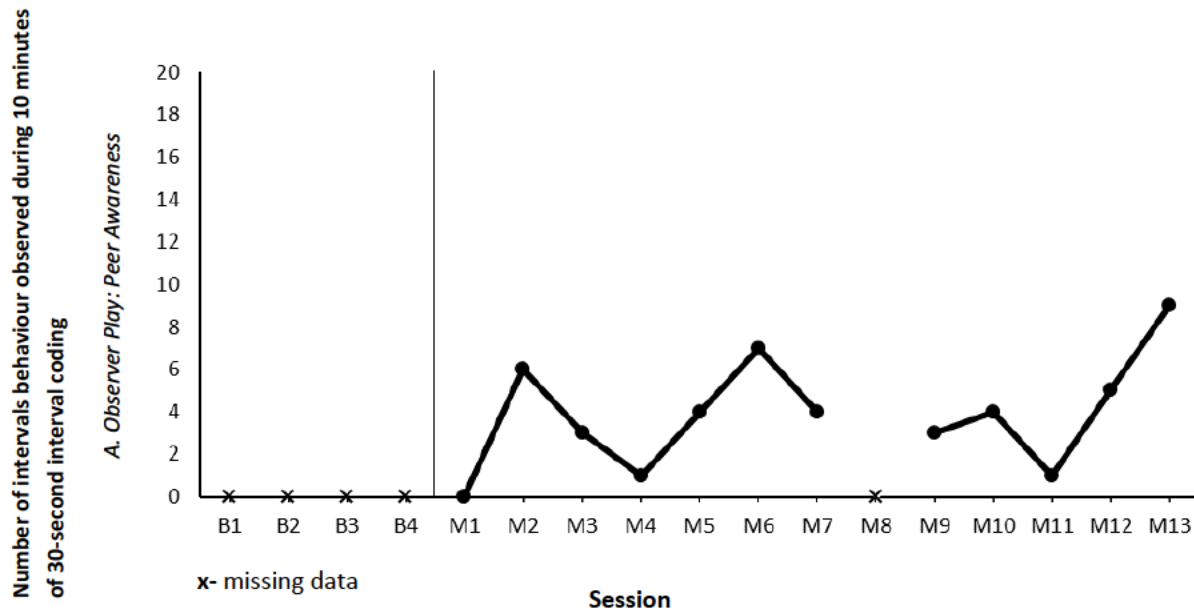
dependent on the availability of the resource (the Acheeva bed), and the health and medical needs of the participant at that time. This information is provided as the equipment used impacted on the way in which Kaden and Jordan were positioned during the baseline and Musical Play sessions and is likely to have impacted on their peer-play.

Figure 31: Peer-play Kaden



There were few occasions of peer-play observed for Kaden. There was only one occasion during the baseline period in which Kaden was involved in any peer-play activity. In all other baseline sessions Kaden was not observed in activity involving another peer, therefore it is not possible to compare the baseline and intervention periods. There was evidence of Kaden taking part in A: *observer play*, during the Musical Play sessions however, this was generally infrequent. There were no occasions of B: *parallel play* observed for Kaden during the baseline or intervention sessions, therefore this data has been omitted from the graph (see Figure 31). There was one occasion of C: *associative play* observed during Musical Play session (M5).

Figure 32: Peer-play Jordan



No baseline data was recorded for Jordan as he was not involved in any peer-play activities during the baseline period. There were no occasions of B: *parallel* or C: *associative play* observed. Findings suggest that Jordans' A: *observer play; peer-awareness* increased throughout the Musical Play sessions.

Staff commented that they did not think than Jordan was able to take part in peer-play and was unaware of Kaden during the Musical Play sessions. Isabelle (Setting 1; Focus-group 2) reported that:

'I don't think Jordan, developmentally, no, and I don't think his awareness that Kaden was there. No, but it was the other way round...Kaden was aware.'

However, video observation suggested that, although infrequent, Jordan's *observer play*; *peer-awareness* increased throughout the Musical Play sessions. This is reflected in another staff participants comment;

Ruth (Setting 1; Focus-group 3) saw some development of this specific ability:

'For Jordan and Kaden I think it was a progression for them, in the beginning I don't think we thought anything was going to happen, but actually Jordan just beamed, absolutely beamed and he actually saw it as a social activity... he knew that he'd got Kaden in there and...'

Staff also commented on the impact of the positioning of Kaden and Jordan on their peer-play and overall playfulness within the intervention sessions.

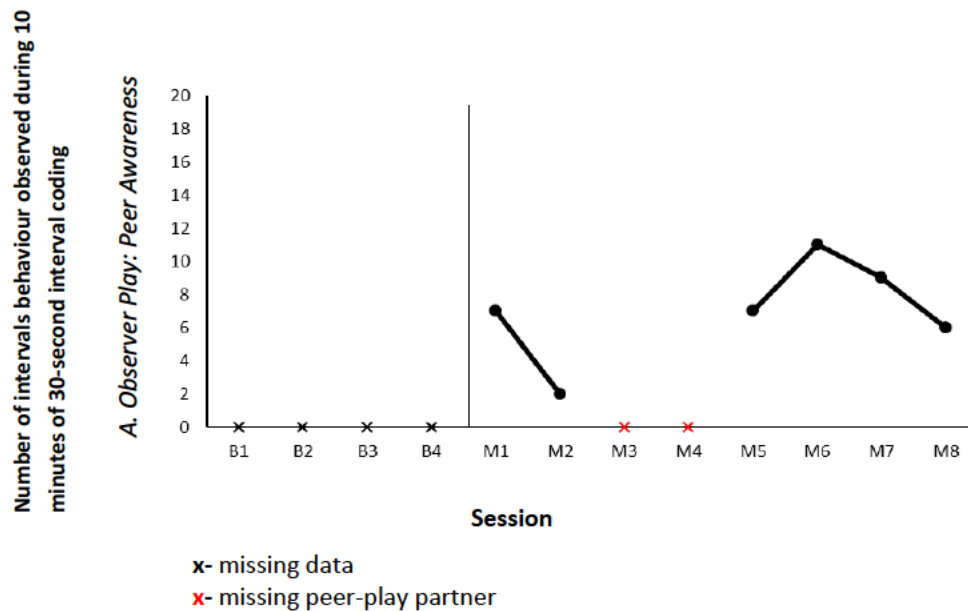
'We noticed that they're more responsive in their chair but the reasons that, or other things that happen in the class sometimes, cuz they have to share equipment. Sometimes Jordan had to be in the bed, and because of the day feed and then vice versa. I did feel that when they were in the chairs, that they interacted more because they were like, it was just the way they were and... we noticed that positioning when you're having music as well, and what you're doing, had an effect on our children.'

Ruth (Setting 1; Focus Group 2)

Hamza and Chaviv: peer-play

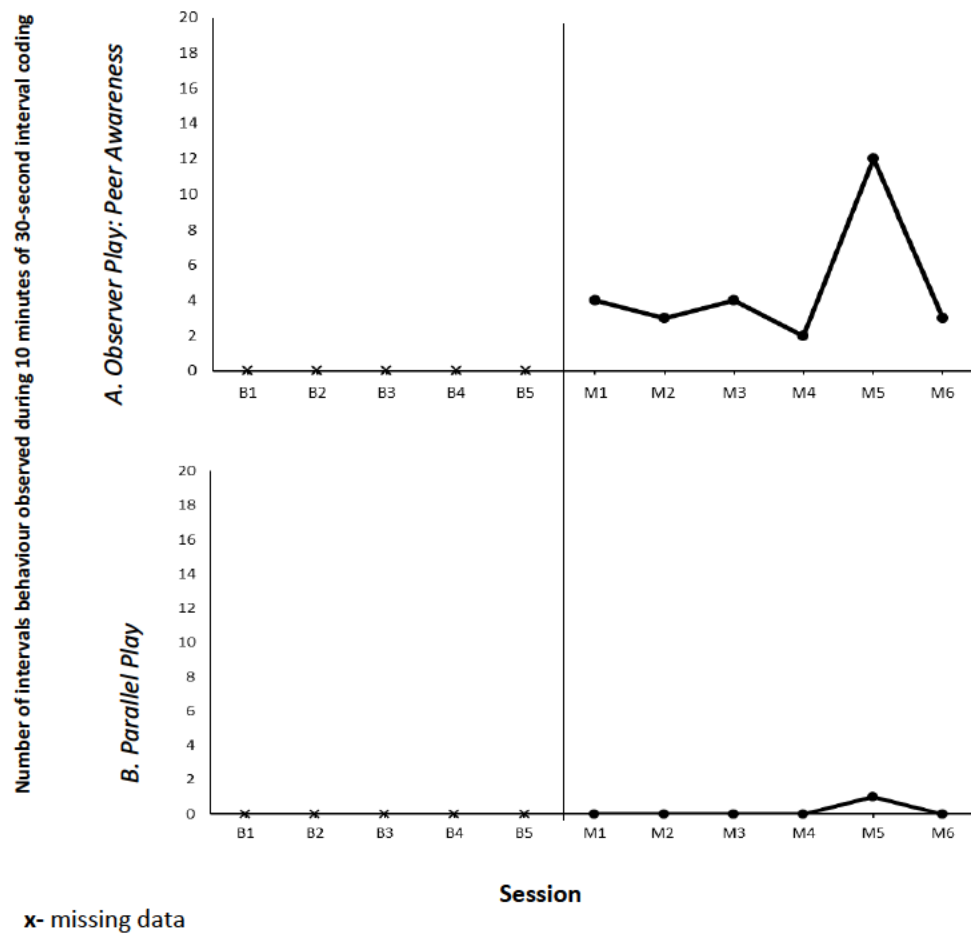
Hamza and Chaviv both use wheelchairs. Hamza uses his arms often. He has control of his head, he is deaf-blind. Chaviv has limited control of his movements and high spasticity in his arms. He turns his head in a supported headrest and is beginning to hold and move his head with more control. Hamza and Chaviv were positioned side-by-side and face-to-face during the Musical Play sessions by the supporting staff play-partner. Both staff play-partners supporting the sessions commented on their concerns that Hamza would scratch Chaviv and so they were often positioned in a way in which physical contact was not possible.

Figure 33: Peer-play Hamza



No baseline data was recorded for Hamza as he was not involved in any peer-play activities during the baseline period. There were no occasions of B: *parallel* or C: *associative play* observed. There was some evidence of A: *observer play; peer-awareness* observed for Hamza during the Musical Play sessions, however, this was limited. Hamza is blind, he was also positioned a distance away from Chaviv, to prevent him from scratching him during tactile exploration. As a result of this, Hamza was reliant on hearing Chaviv's presence, either vocally, or through sounds made using the musical instruments. According to both the video and focus-group interview data it became evident that Hamza was aware of Chaviv during the Musical Play intervention, attending to the sounds he made on several occasions.

Figure 34: Peer-play Chaviv



No baseline data on peer-play was collected for Chaviv. There were no opportunities for peer interaction recorded during the baseline observations as Chaviv was not involved in peer-play activity. A: *Observer play* was recorded across all Musical Play sessions; however, it was infrequent. B: *Parallel play* was only observed during one Musical Play session (M5). There were no occasions of C: *associative play* observed during the Musical Play or baseline sessions.

Staff commented on the impact they felt that the Musical Play sessions had on Chaviv's peer-awareness.

'Yes, with... Chaviv, yes. Because he was giving fleeting eye contact where he wouldn't really do it in class.'

Beth (Setting 1; Focus-group 2)

Staff also discussed challenges in positioning Hamza and Chaviv during peer-play activities. Chaviv and Hamza were not positioned close to each other for safety reasons as Hamza often reached out and grabbed to explore his surroundings, the narrative below discusses this. It also provides an example of Chaviv's awareness of Hamza, and describes Chaviv's vocalisations, which Hamza responded to, during their peer-play (see Figure 34). Louise (Setting 1; Focus-group 2) commented:

'I just didn't want him to ever scratch. That's why I always kept that distance. But then I noticed that Chaviv was listening to Hamza more and I think there's like fleeting eye contact, but obviously he wouldn't vocalize cause Hamza takes the whole lead. But obviously when it's Chaviv's turn he'd be a little bit vocal on there.'

6.4.2 Overall findings Setting 1: peer-play

The baseline data collected from the video recordings for peer-play was very limited. Children in Setting 1 were not involved in peer-play during the typical play activities observed during the baseline period. This meant that minimal comparisons could be made between the baseline and intervention period on the impact of Musical Play sessions on the peer-awareness and peer-play of participants in Setting 1. All participants were recorded taking part in *observer play* during the Musical Play sessions, however, the amount of *observer play* varied across sessions and participants. For one participant, Jordan, this increased across the duration of the intervention, despite staff commenting that they did not think peer-awareness was possible for Jordan.

There was one occasion of B: *parallel play* observed across all participants and sessions. There was one occasion of C: *associative play* observed across all participants and sessions. *Parallel* and *associative play* are more complex forms of social play. Participants in Setting 1 were not often playing in this way.

Staff observations, collected from the focus-group interviews, suggested that the positioning of participants affected their peer-play experiences. The impact of positioning was highlighted for

multiple participants (n=3). This is discussed further in the following chapter. The next section of this chapter presents the finding for the peer-play of participants in Setting 2.

6.4.3 Setting 2

The peer-play of participants in Setting 2 are presented in the following section of this chapter. Table 36 outlines the peer-pairings and staff play-partners involved.

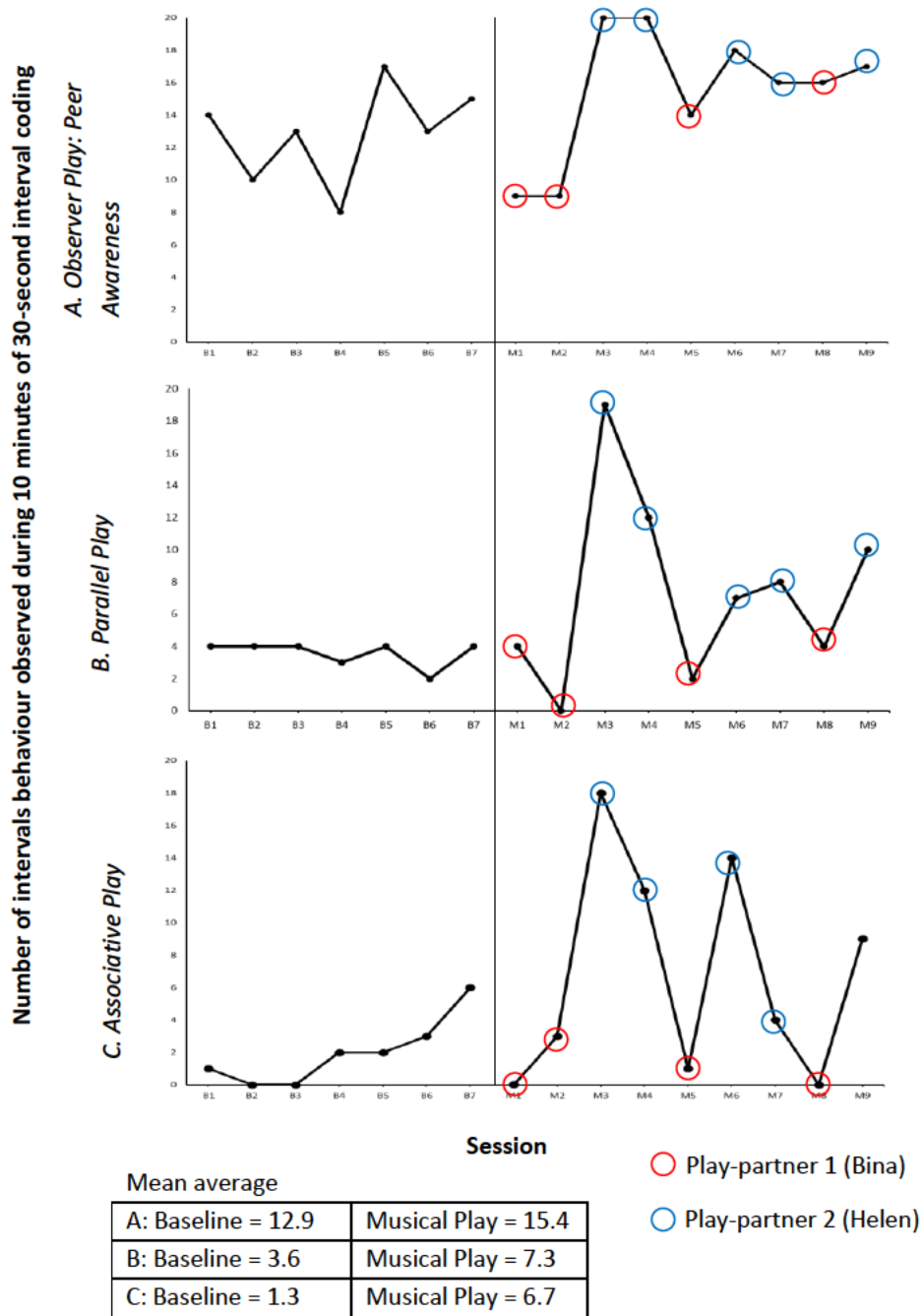
Table 36: Peer pairings Setting 2

Student 1	Student 2	Staff-play partners
Robynn	Joel	Helen or Bina
Pawel	Reepal	Julie
James	Taksheel	Jenny or Sara

Peer-play: Robynn and Joel

Robynn is ambulant, and can stand, move, and walk unaided. Joel is ambulant, and can stand, move, and walk with support. Both participants can sit unaided, and have control of their head, arms, and upper body. During the baseline sessions Robynn and Joel sat on chairs side-by-side, positioned by a member of staff. During the Musical Play sessions Robynn and Joel sat on chairs positioned by the staff play-partner, sometimes these chairs were positioned side-by-side and other times the chairs were positioned opposite each other, face-to-face. It is not known whether decisions on positioning during the Musical Play sessions were made intentionally by staff participants facilitating the sessions or not.

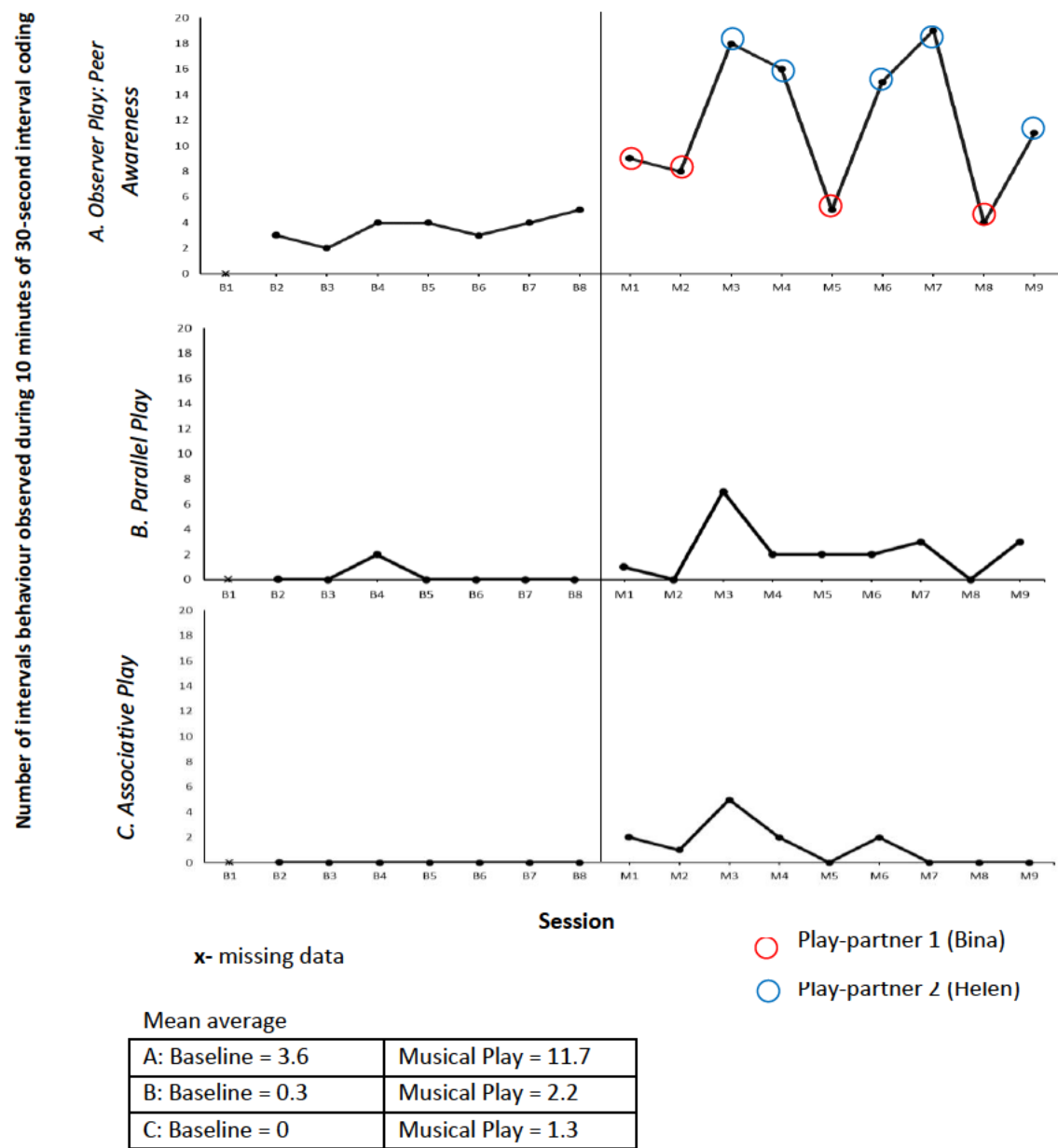
Figure 35: Peer-play Robynn



Findings for Robynn show that peer-play was observed more during the Musical Play sessions than the baseline period. However, peer-play varied between the intervention sessions. Similar to Robynn's reactive and reciprocal play this appeared to be influenced by the staff play-partner facilitating the intervention. When supported by play-partner 1 (Bina), Robynns' peer-

play was observed less than when she was supported by play-partner 2. B: *Parallel play* and C: *associative play* were higher during the Musical Play sessions than the baseline period, particularly when supported by Helen (play-partner 2).

Figure 36: Peer-play Joel



Musical Play sessions increased the amount of peer-play observed for Joel across all categories. Joel was observed taking part in A: *observer play; peer-awareness* during the baseline sessions. This was largely consistent throughout the baselining period. A: *Observer play* increased during the Musical Play sessions. Like Robynn, this fluctuated depending on the staff play-partner supporting the session. There was one occasion of B: *parallel play* observed during the baseline session. In comparison B: *parallel play* was observed in most (n=7) of the Musical Play sessions. There were no occasions of *associative play* observed for Joel during the baseline period. C: *Associative play* was observed during some (n=5) of the Musical Play sessions. *Parallel play* and *associative play* were recorded less frequently than *observer play*.

Staff described moments of C: *associative* and B: *parallel play* between Robynn and Joel during the focus-group interview. In the narrative below it appears that Robynn was taking the lead in the peer interaction with Joel, this is reflected in the higher number of C: *associative* (C) play behaviours observed for Robynn (see Figure 35) compared with Joel (see Figure 36).

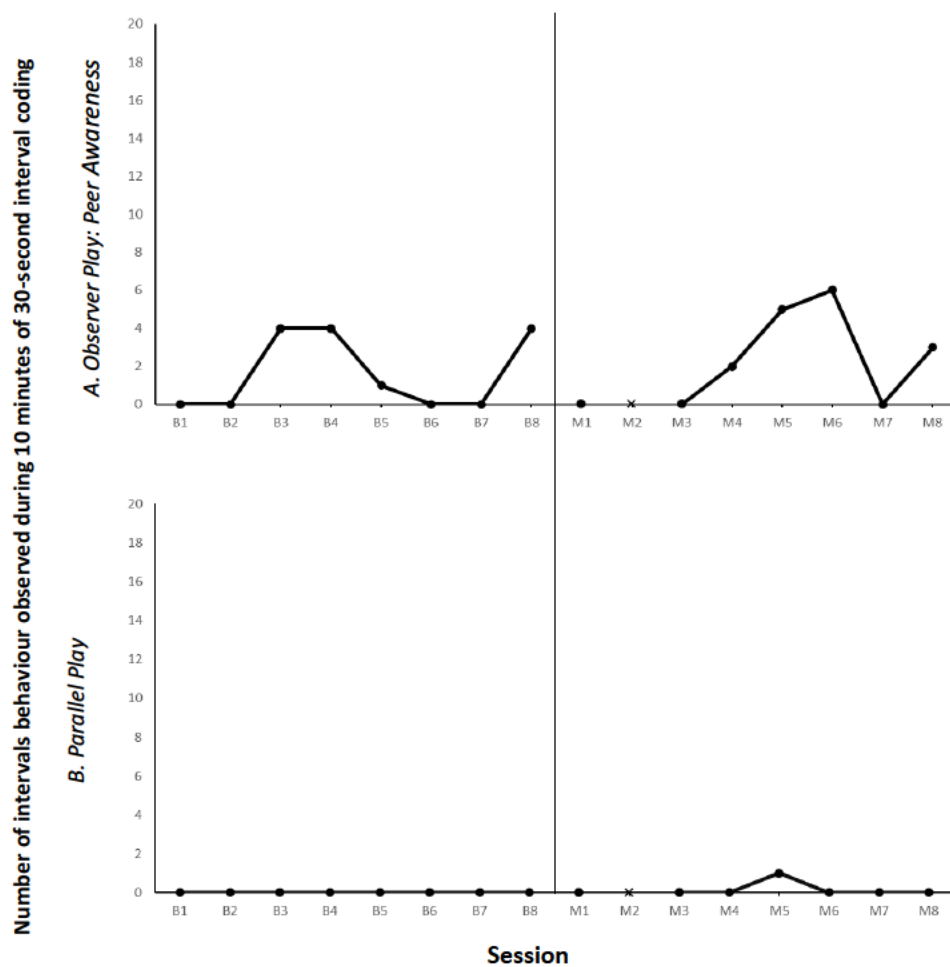
'Robynn was playing around with Joel like 'shush shush' that's a really good interaction. And one time I was doing it and Joel would, and then I let Robynn do it and then I just sit back and then Robynns' playing the drum and Joel was clapping. And that's a good interaction between them too. But it's all depend[ent] on the student...'

Bina (Focus Group 2)

Peer Play: Pawel and Reepal

Pawel uses a wheelchair, he has limited control of the movements of his upper-body, head, or arms. Reepal is ambulant, she can stand and walk with support. Reepal can sit unaided and has control of her movements. She accessed all the sessions seated in a chair. During the baseline period Pawel and Reepal were positioned side-by-side by a member of staff. During the Musical Play sessions they were positioned side-by-side by the staff play-partner.

Figure 37: Peer-play Pawel



Mean average

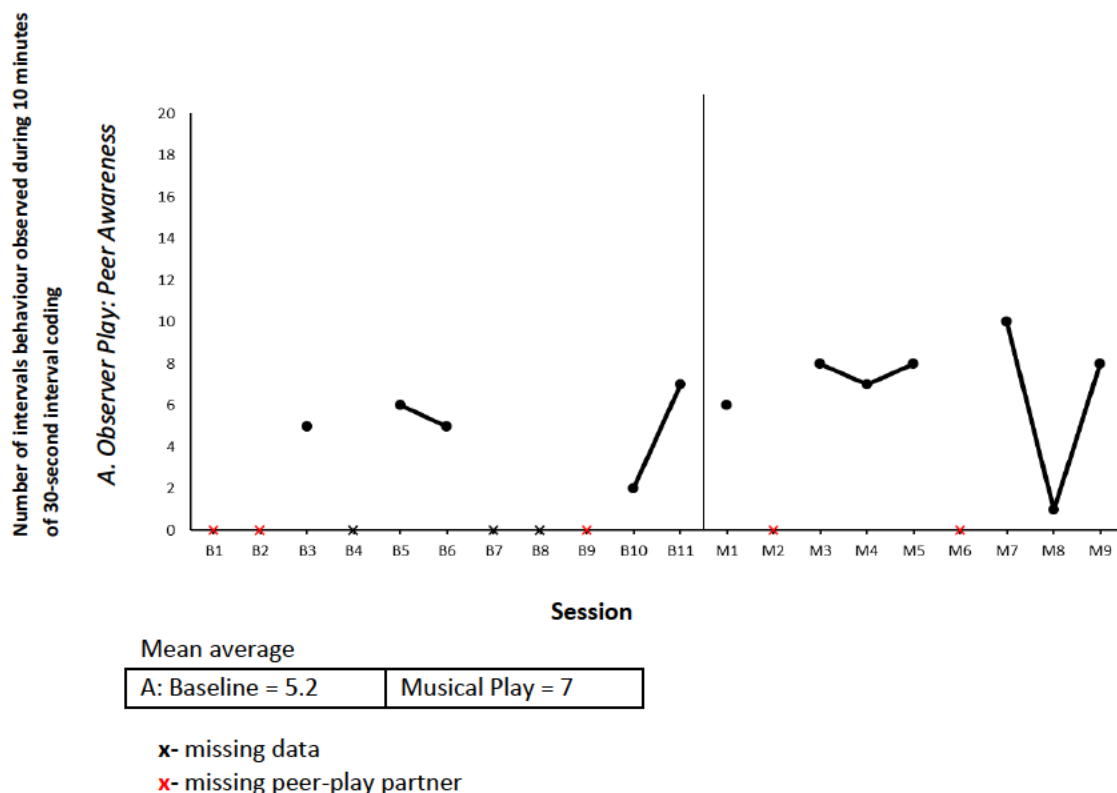
A: Baseline = 2.2	Musical Play = 2.3
B: Baseline = 0	Musical Play = 0.1

x- missing data

Pawel did not often take part in peer-play activity during the baseline or Musical Play sessions. Participation in peer-play activity was infrequent across all sessions. There were some occasions in which A: *peer-awareness* was evident in both the baseline and Musical Play sessions. There was one instance of B: *parallel play* observed during the Musical Play intervention. There were no instances of C: *associative play* observed for Pawel across the

baseline or Musical Play sessions. Therefore, this data has been omitted from the graph to simplify the presentation of the data (see Figure 37).

Figure 38: Peer-play Reepal



Data collection for Reepal was disrupted during both the baseline and Musical Play sessions. This was due to the frequent absence of Pawel, Reepal's peer-play partner. As a result, it was difficult to draw comparisons between the baseline and intervention sessions for Reepal. A: *Observer play; peer-awareness*, was observed slightly more often during the Musical Play sessions than the baseline period. No B: *parallel play* or C: *associative play*, was observed in any of the baseline or Musical Play sessions.

Staff comments in the focus-group interviews also highlighted the irregularity of peer-play between Pawel and Reepal and the difficulty staff felt in facilitating peer-play for these participants.

'I couldn't get the peer-to-peer things, whereas if it was just one-on-one I was getting more... I found that [peer-play] really hard with my group, 'cause it's the lowest ability class we struggle anyway with peer-to-peer... sometimes Pawel might laugh at something. So, I was trying to make this, he liked it when you threw the things in the drum and sometimes, he might laugh if I'm sat with Reepal doing that, so that's good, otherwise it's really hard to get them interacting with each other.'

Julie (Focus Group 2).

Peer Play: James and Taksheel

James and Taksheel use wheelchairs. James does not often use his hands or arms. His upper-body movements are limited and are typically a whole upper-body movement leaning forwards (away from the back of his chair), or slowly turning his head in a supported headrest. Taksheel often uses his arms and hands; he has control of his upper-body movements. During the baseline period James and Taksheel were positioned side-by-side by a member of their class staff. During the Musical Play sessions James and Taksheel were often positioned side-by-side in front of the adult-play partner facilitating the session. Occasionally James and Taksheel were positioned face-to-face during the Musical Play sessions.

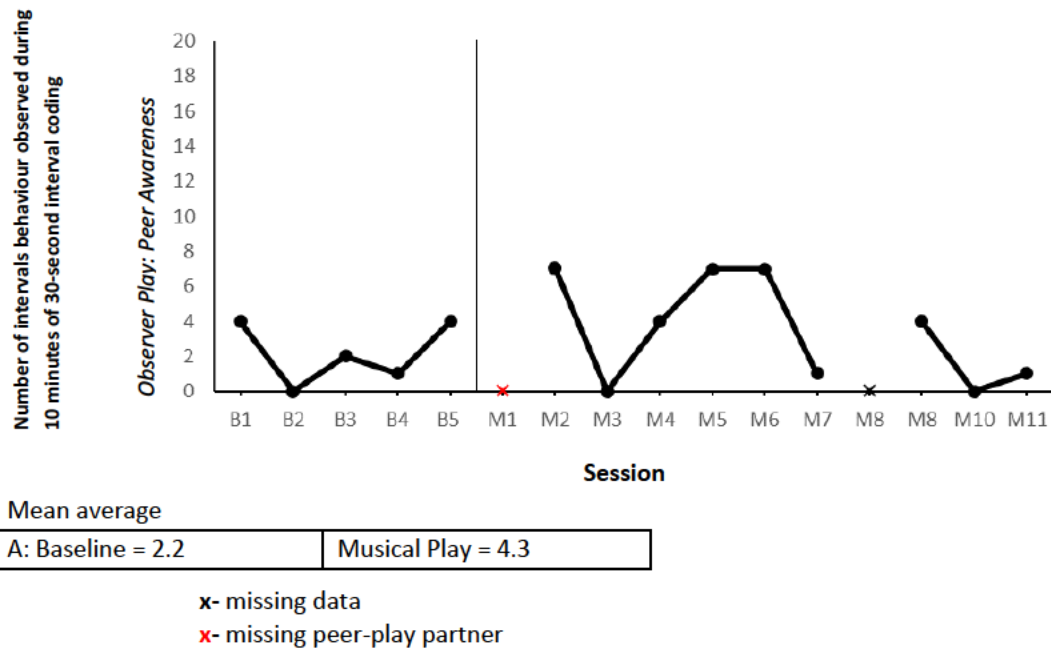
Staff comments on the peer-awareness and peer-play of James and Taksheel in a typical classroom setting suggested that peer interaction was rarely supported, and that the two participants were unaware of each other.

'I wouldn't say they do things, yeah they do [things] individually in that group. They're not doing group activities together. They wouldn't be aware of each other.'

Jenny (Focus Group 2)

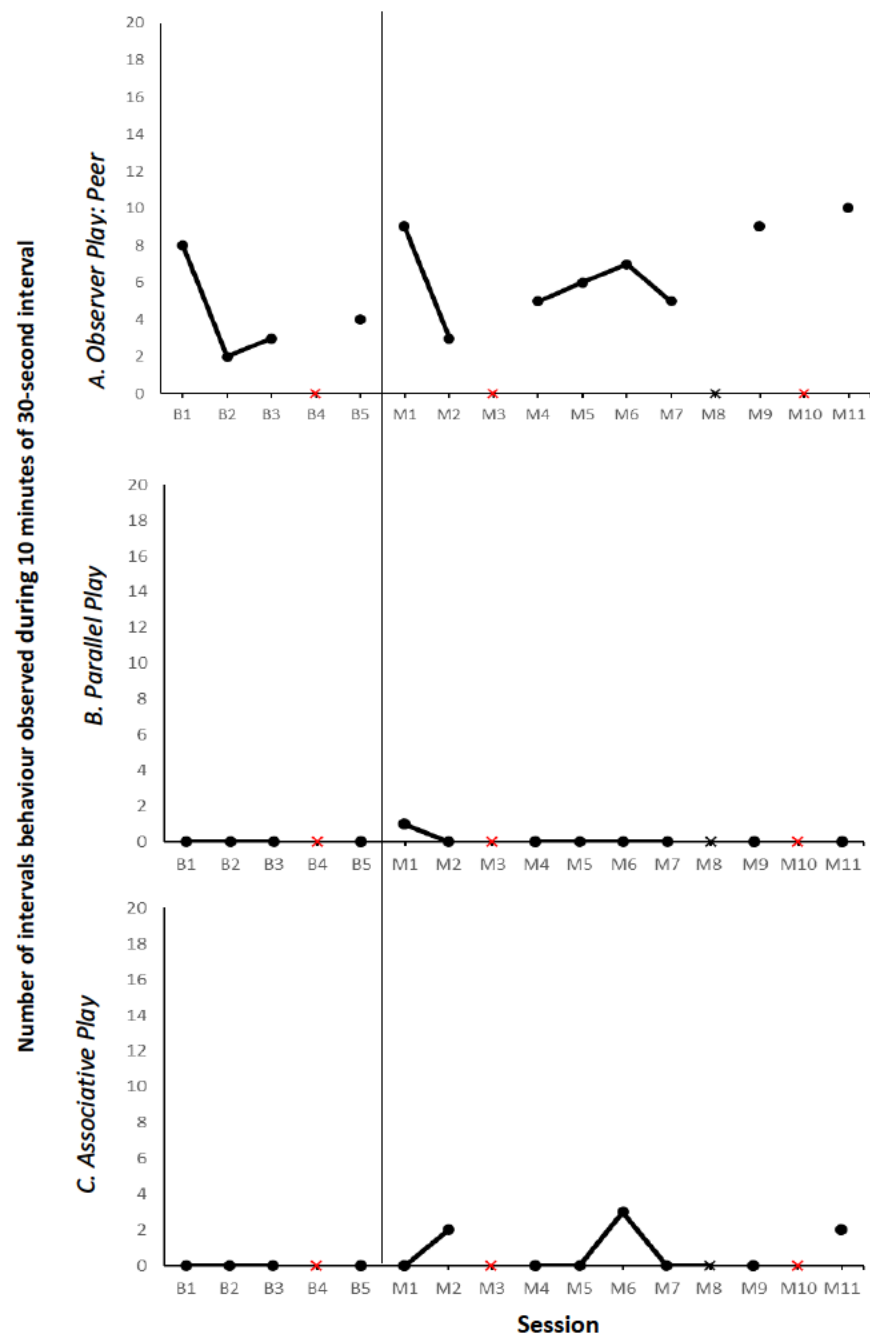
This is reflected in the low number of peer-play interactions observed during the baseline period for both James (see Figure 39) and Taksheel (see Figure 40).

Figure 39: Peer-play James



A: *Observer play; peer-awareness*, was observed slightly more during the Musical Play sessions than the baseline period, however this was still infrequent. There were no occasions of B: *parallel play* or C: *associative play* observed for James in either the baseline or Musical Play sessions. James' limited movements and side-by-side positioning may have affected his peer-play experience. Despite this, James was observed to be aware of Taksheel in most (n=7) of the Musical Play and baseline (n=4) sessions.

Figure 40: Peer-play Taksheel



Mean average

A: Baseline = 4.3	Musical Play = 6.4
B: Baseline = 0	Musical Play = 0.1
C: Baseline = 0	Musical Play = 0.8

x- missing data

x- missing peer-play partner

Data collection for Taksheel was disrupted during the baseline and Musical Play sessions due to the absence of James, his peer. Taksheel participated in *observer play; peer-awareness* in both the baseline and intervention sessions. A: *Observer play; peer-awareness* was recorded more often during the Musical Play sessions than the baseline period. B: *Parallel play* was observed during one Musical Play sessions (M1). C: *Associative play* was not observed during the baseline period; however, it was observed in some (n=3) of the Musical Play sessions. C: *Associative play* was not often observed within each of these sessions.

Commenting on the peer-play facilitated within the Musical Play sessions, staff agreed that James and Taksheel were most likely to take part in A: *observer play; peer awareness*.

'...for James and Taksheel really, it's just making them aware of each other... you're not going to get probably so much interaction. But I would definitely say James and Taksheel are aware of one another which is why you're doing it, which is good.

Jenny (Focus Group 2)

Other examples of James' A: *observer play* and Taksheel's C: *associative play* were described in staff comments such as;

'I tried them to just work together and do something together and I could see later just how I was doing with Taksheel, and James was moving his eyes and when I was with James, Taksheel did the same things, or he grabbed his [James] thing like, or the instrument from me...not for the first time I couldn't, but later slowly, slowly we build up and then how they do it...'

Sara (Focus Group 2)

Staff narratives surrounding the peer-play of James and Taksheel supported the data generated from the video coding. The difference between the peer-play abilities of the two participants was also reflected in both the graphs and staff comments.

6.4.4 Overall findings Setting 2: peer-play

All participants took part in A: *observer play*; *peer-awareness* during the Musical Play sessions. For most participants (n=4), *observer play*, occurred more during the Musical Play sessions than the baseline period. This was the primary form of peer-play observed in Setting 2.

For one dyad, Robynn and Joel, peer interactions were more frequent and interactive than the other participants. Robynn was commonly observed engaging in peer-play, video footage showed her as an ambulant, alert and a highly social individual, all characteristics which likely effected the type, and amount, of peer-play she engaged in. A higher number of peer-play behaviours B: *parallel play* and C: *associative play* were observed for Robynn and Joel during the Musical Play sessions than the baseline period. However, like their other play experiences, described earlier in this chapter, the peer-play of Robynn and Joel was also affected by the staff play-partner leading the session.

For most participants (n=4) *parallel play* and *associative play* were not frequently observed. For two participants, James and Reepal, there were no occasions of *parallel* or *associative play* observed in either the baseline or intervention periods, suggesting that these participants did not have these play skills, and/or the desire to interact with their peer in this way.

Data collection for peer-play was disrupted for some participants (n=2), Taksheel and Reepal, due to the absence of their play-partner across both the baseline and Musical Play sessions. The following section discusses the findings on peer-play further and places them within the context of the wider literature.

6.5 Discussion: Peer-play

The final part of this chapter presented findings on the impact of the Musical Play sessions on the peer-awareness and peer-play of students with PMLD. Literature presented earlier in this thesis highlighted the difficulties that people with PMLD may have in forming and maintaining peer relationships (Nijs et al., 2016). This was also highlighted in staff comments regarding peer-play and the low number of intervals in which peer-play was observed during this study.

Peer-play is difficult for people with PMLD (Watson and Corke, 2015). However, the findings presented above suggested that people with PMLD can, and do, acknowledge their peer during play activities such as the Musical Play sessions. These results are similar to a previous study (Rushton and Kossyvaki, 2020) which found that people with PMLD were more likely to be involved in A: *observer play* than other forms of interactive play such as *parallel* or *associative* play.

6.5.1 Missing data

The results presented for peer-play included several data points where data was missing. The following section explores reasons for this, and the significance of this finding, both in relation to this study, and the implications of this when including people with PMLD within research.

There were difficulties in collecting baseline data on peer-awareness and peer-play for participants in Setting 1. This meant that there was often no baseline for comparison. Baseline data was not collected for Setting 1 as peer-play activity did not occur during the periods of observation. This is an important finding. The lack of peer-play observed during the baseline period suggested that it was not usual practice for staff to facilitate peer-to-peer interaction in the classroom for participants with PMLD in primary school setting.

Student participant absences

Data collection was also disrupted in both settings due to student participant absence and illness. For two student participants in Setting 1 no data was generated on peer-play

behaviours during Musical Play sessions. Due to participant absence, data collecting was also disrupted for Setting 2, as peer-play opportunities within the Musical Play sessions were not always possible. The increased likelihood of participant absence when researching with people with PMLD was addressed earlier in this chapter (6.3.2). However, the impact of this was compounded by the need for both peers to be present to facilitate the generation of data on peer-play.

6.5.2 Role of the adult

Adults can have a significant role in facilitating peer-play for people with PMLD (Brodin, 2007; Imray and Orr, 2015; Rushton and Kossovaki, 2020). The impact of the role of the adult on the peer-play of people with PMLD can be seen in the peer-play of Robynn and Joel (Figure 35 and Figure 36). There is a difference between the peer-play of Robynn and Joel when supported by staff play-partner 1 or 2. Data suggests that staff play-partner 2 (Helen) facilitated a higher number of playful interactions between Robynn and Joel.

The attitudes towards peer-play, and its relevance for people with PMLD, combined with the attributes of staff play-partners are influential in facilitating successful peer interactions. If staff do not consider peer-play a possibility for people with PMLD, then they are not likely to provide the necessary social scaffolding (Nijs et al., 2016) to promote these interactions. Since people with PMLD are interdependent, and often rely on the support of adults to co-create opportunities for interaction, the responsibility of adults to foster peer-relationships is considerable. This includes staff awareness of the positioning of individuals in order to maximise potential communicative opportunities.

6.5.3 Physical disability and positioning

Peer-play was affected by participants' physical mobility and sensory impairments. Peer-play was observed on fewer occasions for participants who were unable to move or reposition themselves independently. Most participants were positioned side-by-side in their wheelchairs during the Musical Play sessions by the staff play-partner. This positioning seemed to have been chosen as it was easiest for the adult-play partner to work with both participants this

way. This positioning also meant that the two participants with PMLD were facing the video camera. However, this position meant that participants needed to be able to turn their head to face toward their peer. Often participants' wheelchairs were positioned with a space between them, meaning that physical contact between peers was also compromised. For some pairings (n=2) this was done for safety to prevent grabbing and pulling between peers, however for others this may have compromised awareness of, and interaction between peers. This distancing may have been a result of staff practices adopted during the Covid-19 pandemic.

Unsuitable positioning has been reported to affect the play experiences of people with PMLD (Ware, 2012; Corke, 2012; Kamstra et al., 2019). Whilst it is impossible to know the visual experience of the participants with PMLD, as many had a visual impairment, positioning participants face-to-face may have increased opportunities for peer interaction. Furthermore, positioning participants so there was possibility for physical contact with their play-partner, where safe to do so, may also have facilitated other opportunities for peer-awareness and interaction. Participants who were ambulant, and had more control over their movements, such as Robynn and Joel, were observed taking part in other forms of peer-play: B: *parallel* and *associative* play, in which they interacted with each other through vocal and physical interchanges, and the shared musical instruments.

Next is a summary of the findings from this chapter.

6.6 Summary

This chapter presented the results of the impact of the Musical Play sessions on the reactive and reciprocal playfulness of children and adults with PMLD. Results from video observations and anecdotes from focus-group interviews suggested that Musical Play sessions facilitated opportunities for people with PMLD to respond playfully to adult-led playful exchanges. However, the type and number of playful interactions varied between individual participants. Participants were able to demonstrate different types of play, this was influenced by their individual physical and cognitive skills. Additionally, the approach of the staff play-partner and

the environment in which the sessions were delivered also affected the play experiences of people with PMLD.

Next, data on the impact of the Musical Play sessions on the peer-play of people with PMLD was presented. All participants were observed showing awareness of their peer during Musical Play sessions. A: *Observer play* was the most likely form of peer-play that participants with PMLD engaged in. Presentations of peer-play were influenced by the physical abilities of the children and adults, and the physical positions of participants by supporting staff. Furthermore, similar to the individual presentations of play, peer-play capabilities were also affected by supporting staff.

There was missing data within the results presented. In Setting 1 there was no baseline data collected as children were not recorded engaging in peer-play opportunities within their typical classroom setting. Data was also missing for two student participants in Setting 1 due to prolonged absence from school. In Setting 2 data collection was disrupted due to the absence of two participants, meaning the data on peer-play for two peer dyads (four participants) was interrupted.

The following chapter presents the findings from the staff focus-group interviews. It considers staff experiences of the Musical Play sessions and explores how the involvement in implementing the sessions may have affected staff attitudes towards play for people with PMLD.

7. RESULTS: STAFF PARTICIPANTS

Introduction

This chapter presents the findings from staff participant interviews, which took place during Phase 2 of the study. It considers how the use of Musical affected the attitudes of teaching staff towards facilitating play for students with PMLD. This was the final research question that this thesis aimed to investigate. All focus-group interviews were audio recorded and then transcribed. Data was analysed and coded abductively (Timmermans and Tavory, 2012); first through deductive analysis, using predetermined categories derived from the literature, and then inductively, to generate additional novel and emergent themes from within the data. The data was analysed using Braun and Clarke's (2022) thematic analysis as described in the Methodology Chapter (Chapter 4). Nvivo 12 software (Nvivo, 2018) was used to code the interview data, compile themes, and group similar themes together.

Findings generated from staff participant focus-group interviews aimed to investigate the following research question:

- How does the use of Musical Play affect the attitudes of teaching-staff towards play for students with PMLD?

A brief description of the staff participants for each setting is provided below, more demographic information on staff participants can be found in the Methodology chapter (see Table 10 and Table 12).

Overview of Staff participants; Setting 1:

Six staff participants were involved in implementing the Musical Play sessions in Setting 1. All staff from the three class groups involved in the study attended focus-group interview 1 and the intervention training (n=11). The decision to include all class staff (n=11) was made by the senior leadership team at the school, to accommodate for any staff illness or absence, due to the ongoing Covid-19 pandemic, which may have disrupted the implementation of the

intervention. However, each class identified two main staff participants to implement the Musical Play sessions. Data from these six participants was included in the analysis.

In Setting 1 the focus groups were delivered after-school twilight sessions. All staff were expected to attend these sessions, which usually included class planning time, or training. It was difficult to facilitate the first focus-group due to the large number of staff (n=11) and range of staff present (this session included teachers, teaching assistants and the deputy head-teacher). An imbalance in staff roles seemed to impact on the willingness and confidence of staff to participate. Additionally, the high number of participants meant that the conversation did not flow naturally, and the views of some participants may have not been captured. This was not the case in focus-group 2 and 3, when only the staff who had implemented the Musical Play sessions attended (n=6). All these staff were teaching assistants. The smaller number of participants and the equity of role meant that the discussions flowed well, and the voices of most participants were captured. The researcher ensured that the perspectives of one participant, Isabelle, who is naturally of a quieter disposition, were captured by occasionally addressing questions to her directly. The semi-structured focus-group enabled staff to explore themes, and ideas surrounding the research aims, whilst also allowing space for themes which were important to the participants to be voiced.

Overview of Staff participants; Setting 2:

Six staff participants were identified by the senior leadership team within Setting 2 to take part in the study and, all agreed to do so. Five participants were involved in implementing the Musical Play sessions. One member of staff withdrew from the study due to personal circumstances after the first focus-group interview as she was absent from the college for several weeks, data from this member of staff was not included in the results.

In Setting 2 the focus-group interviews took place during lunchtimes. The setting provided alternative staff to cover the responsibilities of the staff participants. The researcher brought food to each of the focus-groups with the intention of creating an informal atmosphere for participants to eat their lunch if they wanted/needed to. The first focus-group interview took place in the deputy head-teachers office. This was not the most conducive environment and

was slightly cramped. Staff participants (n=6) were more reserved during focus-group interview 1. This was the first meeting between the researcher and the staff participants and trust, and understanding were still being established. Focus-group interviews 2 and 3 took place in an empty classroom. These interviews were more conversational, with participants (n=5) discussing their experiences and opinions between themselves. Although semi-structured there was less prompting needed from the researcher. Participants in Setting 2 knew each other well, and whilst there was a slight difference in job roles, between Level 2 and Level 3 teaching assistants, this did not seem to prevent participation. The atmosphere for focus-groups 2 and 3 seemed to be relaxed, with laughter and a sense of ease between the participants and the researcher.

Presentation of results:

In this chapter results are presented thematically. There are six main themes which were generated from the data: (i) presentations of playfulness and experiences of play with people with PMLD, (ii) interaction and relationships that occur during play, (iii) staff experiences of implementing the Musical Play intervention, (ix) the impact of place and space on play, (x) the difference between target-driven learning and Musical Play, and (xi) considering age-appropriateness in relation to play. The table below provides an overview of the main themes, sub-themes, setting in which the sub-theme occurred and a description of each sub-theme. When the theme occurred in both Setting 1 and Setting 2 data from each setting is presented separately. When the theme only occurred in one setting this is highlighted in Table 37 below. After all themes have been presented the findings are discussed in relation to the wider literature.

Table 37: Overview of themes, sub-themes, and descriptions generated from all focus-group interviews

Theme	Sub-themes	Setting	Description
1. Presentations of playfulness and experiences of play with people with PMLD	1.1 Presentations of play	Both	<i>Descriptions of what play/ playfulness looks like for children/adults.</i>
	1.2 Previous play experiences	Both	<i>Previous experience of play activities and playful interactions staff had been part of in current or previous settings.</i>
	1.3 Value of play	Both	<i>Staff perceptions of how play impacts/benefits children and adults with PMLD and how staff feel this is perceived in the wider school/world.</i>
2. Interaction and relationships that occur during play	2.1 Staff-student interaction	Both	<i>The role of the adult in supporting play, including the effect of play and playfulness on staff relationships and perceptions of children. Types of communication used in these interactions.</i>
	2.2 Peer-to peer interaction	Both	<i>Social interactions between people with PMLD, examples of and challenges which limit these interactions. Types of communication used in these interactions.</i>

3. Staff experiences of implementing the Musical Play framework	3.1 Barriers to Musical Play	Setting 1	<i>Staff reflections of difficulties surrounding the session, negative feelings, and hesitations.</i>
	3.2 Positive experiences	Both	<i>Positive narratives about the experiences of children with PMLD during the sessions.</i>
	3.3 Reflective practice	Both	<i>Staff reflections of the session, staff feelings, hesitations and confidence development.</i>
4. The impact of place and space on play	4.1 Environment	Both	<i>Impact of different location on staff and/or students.</i>
	4.2 Small group activity	Both	<i>One-to-one or small group time away from the usual classroom setting.</i>
	4.3 Positioning	Setting 1	<i>Positioning of children and staff during interaction and activity.</i>
5. The difference between target-driven learning and Musical Play	5.1 Outcome driven practice	Setting 1	<i>Targets, learning and progress for children with PMLD.</i>
	5.2 Restrictions of role	Both	<i>Staff feelings of frustration with the demands of their role imposed by school/other requirements.</i>

6. Considering age-appropriateness in relation to play	6.1 College ethos of adult learning	Setting 2	<i>Impact of college values on staff behaviours, and the activities of adult students.</i>
	6.2 Staff views of age-appropriateness	Setting 2	<i>Staff attitudes towards activities and approaches in relation to the age of the students they support.</i>
	6.3 Conflict between views of staff and requirements of setting	Setting 2	<i>Dissatisfaction, difficulty, or dismissal of attitudes related to age imposed by the setting, senior leadership, or others.</i>

7.1 Theme 1: Presentations of playfulness and experiences of play with people with PMLD

Data included within this theme discussed staff comments on the presentation of playfulness by people with PMLD. Staff's previous play experiences, the types of play activities, and the value of play for people with PMLD were also coded within this theme. Staff comments on this theme were mainly expressed during the focus-group 1, pre-intervention interviews.

7.1.1 Setting 1

Beginning the study, staff participants in Setting 1 felt confident in delivering play opportunities for children with PMLD. This was apparent during discussions which took place in the first focus-group interview, as evidenced in comments such as Emily's below, staff were confident that every child had the ability to play.

Everyone, every child has got the ability to play. It just, it's just finding how to do so...it is just being consistent and just building on their responses.

Emily (Focus-group 1)

Although none of the staff had received any training in this area, staff participants described a range of play activities and presentations of play that they had been part of, such as *'role play, 'exploring things',* and children *'playing on their own, with an object or toy'*. Play was seen as an opportunity to discover the interests and likes of a child with PMLD. The nature of this type of play activity, described by staff participants, was improvisational and experimental. Staff commented on the need to be responsive to the child/children to effectively support play for people with PMLD. Staff highlighted the value of playfulness within learning, and the spontaneity of playful interactions with children with PMLD throughout the school day, not necessarily during specific play activities or sessions. This was evidenced in comments such as:

'I think playfulness should underpin most learning because a lot of the time typically, children with profound difficulties, some people might think of them not playful, but a lot of the time they are, you underpin their likes and interests and I think with given time and with the right adults, every child's got the potential playfulness in them.'

Emily (Focus-group 1)

The quote above highlighted the role of playfulness within wider learning, and considered ingredients staff felt were important to facilitate playfulness with people with PMLD. This staff participant felt the 'offer' of play should be personalised, with prior knowledge of an individual likes and interests. The need for time to build the playful relationship was also emphasised. Finally, the impact of the supporting adult was also considered, with the idea that playfulness may be dependent on the child with PMLD being supported by the 'right' adult.

7.1.2 Setting 2

During the initial focus-group interview staff participants did not describe any play activities for the students with PMLD that they supported. None of the staff in Setting 2 had received any

previous training in facilitating play for people with PMLD. Participants felt that adults with PMLD did not play and appeared not to associate play with the students they supported. This was somewhat attributed to the colleges' policies on age-appropriateness, discussed in more detail later in this chapter.

However, despite being hesitant to explore play, staff spoke about the positive impact of having fun on the '*mental wellbeing*', sense of '*community*', and as a tool to support '*learning*' for adults with PMLD. Staff felt that playful interactions were necessary to '*build communication*' and '*get the responses [they're] looking for*' from students. Playfulness was described as a bridge to learning and the importance of having fun was discussed as fundamental for everyone. Helen commented during focus-group 1 that:

'I think it's important for everybody to have some form of release and play and fun [otherwise] life is very boring.'

Staff participants highlighted the individual skills, characteristics, and personality traits that they used to support fun activities for the students.

'I think we're all quite natural at it, I think we are all good in our own way, of engaging them and making it into play, fun. We know if we make it fun...'

Jenny (Focus-group 1)

'Well, I was going to say Sara's very animated and I'm very animated, you know what I mean? And that's how we do it and we make fools of ourselves and stuff.'

Helen (Focus-group 1)

They acknowledged the way in which they used these skills in supporting students to have fun and be playful. Staff described a variety of approaches that they used to engender a fun environment for the students, this included slap-stick humour, dancing and being animated.

'Yeah, I think it's when we do go a little bit crazy like you said, quite loud...and I think they find that quite fun to watch'

Jenny (Focus-group 1)

These playful approaches were sometimes performed for the students with PMLD, and other times used with them. Some of the methods staff reported to have adopted were attributed to non-verbal drama sessions that staff and students had been taking part in. It seemed that within these sessions staff has seen external drama practitioners modelling playful interactions, and recognised the impact this had on some of the students they were supporting. These sessions also appeared to overcome barriers to *'appropriateness'*, a theme which is discussed in more detail later within this chapter.

'In that [non-verbal drama], you can be very playful and it's appropriate and it's it in its entirety, and then whatever comes out comes out. But it doesn't need to be anything else.'

Helen (Focus-group 1)

7.2 Theme 2: Interaction and relationships that occur during play

Relationships and interactions between both staff-student and peer-to-peer dyads were included within this theme. Staff commented on the impact of play on these relationships and interactions across all three focus-group interviews.

7.2.1 Setting 1

Through play activity staff reported that they built and developed relationships with children with PMLD. This outcome of play was highlighted throughout the focus-group interviews. Before the Musical Play sessions staff commented on the role play has as *'an interaction to form relationships'* and as an opportunity to *'build a strong relationship'*.

'...when you find out what it is that they enjoy and then you discover that something they like, and it sort of builds on the relationship that you have with that child and we can tap into what they like.'

Louise (

After taking part in the Musical Play sessions staff spoke about ways in which they had learned more about the children they had been playing with. This included personal qualities of the children:

'...for me the one thing that shone for me was I saw a side of [Jordan] I probably wouldn't have seen if I hadn't done the musical session,'

Ruth (Focus- group 3)

as well as capabilities that the children had which staff had not been previously aware of.

'I mean that's where I learned how much sound [Chaviv] was making and what difference it makes, that music makes, and being on your own one-to-one makes, making connections with each child, 'cuz [Hamza] learned to wait, which is what I learned'

Louise (Focus-group 3)

As well as considering their own relationships with the children, staff were encouraged to discuss peer relationships for children with PMLD. Staff felt that opportunities for peer-play for all children in Setting 1 had reduced due to the Covid-19 pandemic. Children were no longer able to use group resources, and instead were often provided with individual resources/materials to explore with an adult. Covid 'bubbles', in which people (staff and students) were allocated to distinct groups, unable to mix with people from other 'bubbles' to reduce the spread of the virus, meant that children with PMLD did not have the opportunity to share in social time with more able peers from other classes within the school. Whilst staff clearly articulated these changes as a loss, the value of some of these earlier shared play

experiences for children with PMLD was questionable. Staff recalled previous peer-play opportunities that children with PMLD had been involved in as ‘fake’ and pointless. For some staff the possibility of peer-relationships for the children they supported seemed an unnecessary and abstract concept.

When reflecting on the Musical Play sessions, peer-relationships were considered in a more concrete capacity. Staff had been encouraged to deliver the sessions, being mindful of supporting peer relationships. The importance of peer-relationships was highlighted in the Musical Play Framework (Principle 7 and 8, Support and Share) (see Table 14). Musical Play sessions were reported to have provided opportunities for children to take part in peer-play activities. For some staff participants, a heightened awareness of peer-play seemed to result in a shift in acknowledgement towards the ability that children with PMLD had to enjoy social interaction with their peers.

‘Not just that it was something to do, but a social activity. Share a friendship with something that you could, the activity that, there’d be the music that they both could do, although they both, needed an adult support. It was something that I felt by the end I was saying they really enjoyed that. So, I saw from ‘oh no’ to a, ‘oh god’, they really enjoyed that...’

Ruth (Focus-group 3)

7.2.2 Setting 2

Playfulness, and fun, was a medium that allowed staff to build relationships with adults with PMLD. Although staff were initially uncomfortable to describe themselves involved in the activity of playing together with the students, they acknowledged that during the Musical Play sessions they had built up and developed their relationships with the people they were supporting. Jenny (Focus-group 2) argued that:

‘You are building up that relationship with them and seeing a different side and you are encouraged.’

Staff discussed how through the Musical Play sessions they had learned more about the students, *'seen different aspects'* of them, and see *'some reactions that you don't necessarily pick up when they're in the class'*. The humanising aspect of play was reflected in staff comments on the sessions.

'I think it brings out a side the them that we don't always get the opportunity to see in class and build a relationship and see them as a person.'

Jenny (Focus-group 2)

'You see different aspects of the students. We can gain understanding of them. We can open them up in ways that we couldn't do ordinarily.'

Helen (Focus-group 2)

Musical Play sessions not only facilitated the development of relationships, and understanding of the students with PMLD but also created the possibility for staff participants to see individuals as people. During Musical Play sessions students were seen as more than the sum of their disabilities, medical needs, and complex care routines, but for themselves, their personality and individual character, *'as a person'*.

Peer-relationships

Playfulness was perceived as an appropriate social exchange between peers, in contrast to the inappropriateness of play in the staff-student dyad. Staff participants were comfortable to describe peer playful interactions which occurred in their setting. Differences in abilities, arousal level, and the personalities of the participants were presented as barriers to peer-play during the Musical Play sessions. Staff found it difficult to balance the needs of both participants during the two-to-one sessions.

'I just feel like I was just leaving the other student out then 'cause they weren't really, usually I'd leave some instrument by them but they

wouldn't be looking at each other, they'd be looking in the other direction.'

Julie (Focus-group 2)

The difficulty of encouraging peer-play was discussed. In the quote above Julie addressed the level of individual one-to-one support that many people with PMLD need to physically explore their environment, or in this case, the musical instruments, and the challenge she had in dividing her attention between the two participants. The quote also reflects the complexities of facilitating peer-awareness with people with PMLD.

Despite the challenges staff discussed in facilitating peer interaction, most staff (4 out of 5) prioritised peer interactions and social relationships as one of the primary benefits for students engaging in the Musical Play sessions.

'Yeah, I think I like the peer-on-peer interaction it made me realize we don't do it enough in class. And I think that's what I've definitely took out of it is how to encourage them to interact and put them. We don't really do it enough probably.'

Jenny (Focus-group 2)

In focusing on peer relationships, staff were perhaps unknowingly adhering to the social norms and expectations of the students they were supporting. Young adults often spend most of their time with their peers (Donlan et al., 2015) and in typical college settings peer interactions are common, this idea is further explored later in the discussion section of this chapter. The following section considers staff attitudes and experiences of the Musical Play sessions.

7.3 Theme 3: Staff experiences of implementing the Musical Play framework

During focus-groups 2 and 3 staff reflected on the Musical Play sessions. Staff comments addressed the barriers encountered during the Musical Play sessions. Staff also recounted positive experiences and narratives involving the students with PMLD they had supported. The

experience of reflecting on their own practice that the Musical Play sessions had facilitated was also included in staff discussions.

7.3.1 Setting 1

During focus-group 2, staff participants in Setting 1 reported initially feeling unsure of their abilities to implement the Musical Play sessions. Staff reported that they *'struggled a little bit'*, in knowing if what they were doing was *'right'* and felt it *'went against everything [they] normally do'*.

'When I first did it [Musical Play], I did find it strange. I found it really odd. It's like there's no instructions is there really, no, and then you don't know if you're doing it right or wrong.'

Beth (Focus-group 2)

Most staff (n=5) implementing the sessions in Setting 1 were TAs who typically worked as part of a wider team led by the class teacher. All staff had over ten years of experience working in the setting, though not necessarily with children with PMLD. Staff found that the principles of Musical Play contrasted with previous training or approaches they were *'programmed'* to use to *'cover all areas of communication'*. The main difference in approach staff highlighted was the reduction in language. Staff usually used words and on-body signing to alert, prepare, and communicate with the children they supported, and this was particularly important for staff when working with participants who had visual impairments. Staff participants discussed their usual desire to provide a narrative for the children, to explain to them what they were doing, what was happening or to give them prompts or praise.

'It's just alright to be sort of quiet and just see what they do. You don't have to praise them all the time for doing it or well 'come on do this, you're not doing this. Do it like that.' You sort of just, it's in their hands really, isn't it?...So I think being quiet and just watching, we learn, you can learn a lot more about what they're doing.'

Louise (Focus-group 3)

When reflecting on the reduction of spoken language that was encouraged in the Musical Play sessions staff acknowledged that *'being quiet, listen[ing] to them [the children] ...made a big difference'*. Staff identified a difference between themselves as *'linguistic'* individuals, and the children they supported, who were not. Constant use of language was identified as overshadowing opportunities for *'the child to express [themselves]'*.

Another difference identified by staff in implementing the Musical Play sessions was the lack of prescriptive activities included in the Musical Play Framework. Initially staff felt apprehensive about leading the sessions, and whether their delivery would be *'right'*.

'It was just 'cuz, it was free for us to do. It's like, am I going to do a good job of it. And we're used to been saying, 'do this, do this, do this'. 'Cause it was just our own way. I'm, am I going to do the right thing.'

Isabelle (Focus-group 2)

'But for the PMLD class in the upper school we do a lot of Tacpac but it's all, so the teachers organised this activity, and you deliver it...and then you from delivering it, you have to see whether they've done this target, this target, this target, what have you observed from this? Did they have they reached out; can they do this? So going into the music, and saying just go and have fun, in the beginning, wasn't it, sort of. Oh.'

Ruth (Focus-group 3)

Most staff delivering the Musical Play sessions were TA's (5 out of 6). These staff worked as part of a wider class team which was led by the class teacher. Staff discussed the freeness of the Musical Play sessions as different to their usual role, in which they delivered activities organised by the teacher. These activities were typically activity or outcome based, and so staff knew if they had *'got it right'* or not. In contrast to this, the Musical Play session created an environment which required the staff participants to work autonomously within a framework of principles, rather than a set of rules. Staff initially found this daunting.

However, when reflecting on facilitating the sessions, the impact of the sessions on the children, and discussing the implementation of the sessions with each other, staff confidence seemed to have developed. Staff spoke with a sense of accomplishment and pride in their delivery of the Musical Play sessions.

'So, if we had to tell anybody else, I think what we would say is swallow all your own fears and apprehensions and have a go.'

Ruth (Focus-group 3)

7.3.2 Setting 2

Staff described their involvement in the Musical Play sessions as a reflective and progressive experience. Staff reflected on their own practice and their understanding and expectations of the participants. Staff commented on the initial uncertainty of delivering the sessions.

'...at the beginning it was very, a bit uncomfortable, but I think as time's gone on you can see the benefits in it and you can see why you were doing it and you start reflecting on your practice as you go along.'

Jenny (Focus-group 2)

However, staff gained confidence from the positive experiences they had with the students during the intervention sessions, and through reflecting on their own practice and skill development. This time for reflection was considered valuable to skill development. However, aside from the intervention study, staff identified that engagement in reflective practice was limited. This was captured in the quotation below which was a discussion between Jenny and Helen during focus-group 2.

It's a research thing, whereas we wouldn't normally, yeah, we'd just go and do it wouldn't we? Where this probably made us think more about what we are doing <laugh> does that make sense... It's a good thing because it then does make you think. Whereas you probably wouldn't do that in a normal sense as such would you?

Jenny (Focus-group 2)

You don't really have the time to.

Helen (Focus-group 2)

No. So actually then it does make you try and improve the next sessions after so actually it's probably quite good.

Jenny (Focus-group 2)

One staff participant, Helen, described their involvement in the Musical Play sessions as a journey from the '*unconscious incompetent*' to the '*conscious competent*'. This statement referred to the conscious competence learning model (Wilhelm, 2016) and captured the essence of the individual development and sense of personal achievement that most staff participants (n=4) highlighted in relation to their involvement in the Musical Play sessions.

Staff narratives surrounding the Musical Play sessions were positive. Speaking enthusiastically about the '*happiness*', '*laughter*', '*giggles*', and '*fun*', they had experienced with the students, most staff (4 out of 5) seemed to have enjoyed taking part in the intervention. Playful responses from participants with PMLD led to positive experiences and emotions in staff. Recounting a playful exchange in which positive emotions were shared between staff and Sara (focus-group 2) commented;

'...I stopped it and I just looked at him [James], what he's doing. He looked at me, smiled and I said to myself, 'oh yes, he's happy'. So, I started again. So, it means he responded so I could see when I stopped and actually he smile and sometimes he looked at me. So, I was really happy in my, I was really happy. Oh yes.'

The reason for this staff participants happy emotion is directly related to the individual with PMLD. In seeing he is happy, demonstrated through his smiles and gaze, she also becomes '*really happy*'. Although it is not clear whether the root of this happiness is her own success and practice, or in a shared positive experience with James, the individual she is playing with the catalyst for the happiness is the positive expressions and experience of another. Within this

dyad Jack was not a passive individual within the narrative, nor was he the receiver within the exchange, instead his positive expressions proactively influenced the mood of another. The positive experiences shared by staff participants during the focus-group interviews captured reciprocal relationships between people with PMLD and their staff play-partners which were facilitated during the Musical Play sessions.

7.4 Theme 4: The impact of place and space on play

In both focus-group 2 and focus-group 3 interviews staff commented on how the location in which the Musical Play sessions took place, and the positioning of the students, influenced play experiences.

7.4.1 Setting 1

The space, in which the Musical Play sessions took place, as well as the dedicated small group time the intervention afforded were highlighted during the focus-group interviews. During focus-group 2 and 3, staff commented on the positive impact that conducting the Musical Play sessions in a different space, away from the main classroom, had on the students. Staff felt students benefited from the ‘quieter’ classroom and were able to have more attention than being in a whole class setting. A change in environment provided different acoustics for the children to experience their sounds and vocalisations in. Staff commented they felt that for one child accessing the sessions in a different environment enabled him to anticipate the Musical Play activity.

Participants also identified that being away from the main classroom reduced their distractions too. This meant staff were able to give focused attention to the children without other adults to talk to, or tasks to disturb them. For example, Emily (focus-group 2) reported:

‘I think because you were taken away from the classroom you didn't think, oh I need to go over here. Oh, I need to go over here’

Dedicated time with the children one-to-one, or in the small groups, away from the main classroom allowed staff the opportunity to be more *'connected'* and present with the children.

Alongside the physical location of the play sessions, staff also highlighted the positioning of the children as an important factor to consider during playful experiences. Children feeling *'comfortable'* was fundamental to engagement.

'If you're not in a comfortable position, you're not going to take part in anything, so you know, we tend to get our kids out because we know that they respond better that way.'

Beth (Focus-group 1)

Furthermore, staff noticed that differences in positioning affected the children's experiences of, and responses to play. Staff noted that Kaden and James were more alert when using their wheelchairs instead of the Acheeva bed. Positioning, including distance from, or closeness to another, also affected the interactions of the children with staff and peers during the play sessions.

7.5 Theme 5: The difference between target-driven learning and Musical Play

Outcome driven learning, and the significance of targets on the experiences of both staff and students was a recurrent theme throughout all of the focus-group interview data (1,2, and 3) from Setting 1.

7.5.1 Setting 1

It was evident, from staff comments collected during the focus-group interviews, and researcher observations, that staff in Setting 1 typically had targets for the activities they delivered to, and with, the children they supported. Activities which happened throughout the school day were outcome driven, and target led, and staff did not often occupy the role of play-partner with the children. Staff participants spoke of the systems the school had in place to ensure that time was used with the purpose of learning, and the role they had to deliver, document and evidence this process. Louise mentioned during focus-group 3:

'Look, sometimes a lot of the things we're doing with them, we do like targets and then you got your box next to you, you've got your target sheet there and you're like get this out. And you're like oh...'

Staff commented that often the children did not perform the targets on demand, alluding to the idea that the children *'know it's work'* and choose not to do it. This was an interesting narrative discussed by the staff participants, as it suggested they believed the children had some understanding and ability to differentiate between activities of *'work'* and play.

'There was no outcome with that [Musical Play], and I think the children realized that this is a time for them to just play. I think it's the expectation...I think the children knew that there was no pressure to do. That you didn't expect them to do it in the right way.'

Emily (Focus-group 2)

Staff felt that the lack of *'pressure'* and *'expectation'* they felt during the Musical Play sessions was communicated to the children, creating an environment where the children felt less demand. The difference in staff mindset, whether consciously or subconsciously, during the Musical Play sessions may have affected their behaviour, interactions, and availability for the children, and it may be this change in staff demeanour that the children were aware of, or that led to more incidental learning opportunities.

During the focus-group interviews (2 and 3) staff discussed the outcomes and targets which had been achieved through Musical Play sessions. In contrast to the outcome driven activities, described by staff in their typical classroom role, staff participants spoke about the incidental opportunities in which children had demonstrated and achieved their individual targets during Musical Play. Staff attributed this to the Musical Play sessions, in particular the instruments used, as motivating, and engaging activity for the children. During focus-group 3 Louise and Beth discussed the impact of the chime-tree on Chaviv's motivation.

'Well once that chime's there and he hears it and he is like I wanna, you know I love that sound, I want to try and make that sound, that movement.'

Beth (Focus-group 3)

He hears the sound. It's almost like singing with the sound that whole...

Louise (Focus-group 3)

So, he's starting to reach out a lot more with different equipment...

Beth (Focus-group 3)

And following it as well. He's following the sound. So, I mean most of our targets are tracking fixating, it all sort of comes into it.'

Louise (Focus-group 3)

The Musical Play sessions also provided an environment for the children to demonstrate their abilities, allowing staff to evidence targets that were otherwise difficult to facilitate.

'Which is one, some of their targets to search for things and they don't do it normally. It's a really hard one to do and when they achieve that, and you think from just doing that activity you can tick so many boxes.'

Beth (Focus-group 3)

Highlighting the targets achieved within the Musical Play sessions, staff spoke positively about converse way that the Musical Play sessions facilitated opportunities for children to meet their targets, without engaging in target driven tasks. Whilst this comment reflected the target-focused attitude of the school, and the mindset of the staff, it perhaps also captured a shift in thinking, in which process based, non-target specific activities can also provide opportunities for achievement.

7.6 Theme 6: Considering age-appropriateness in relation to play

Throughout the focus-group interviews in Setting 2 (1,2 and 3) staff attitudes towards play and age-appropriateness repeatedly occurred as a theme within the discussions. Conflicting viewpoints, between individual staff participant perspectives and the requirements of the setting, were also captured in the data.

7.6.1 Setting 2

Setting 2 was a college for young adults 19-25 years old with a range of learning disabilities. Staff at the college were acutely aware that activities needed to be age appropriate. When the concept of play was initially considered in the focus-group interviews staff commented that they did not play at the college setting. For example, during focus-group 1, Jenny reported:

'I dunno if we're all a bit scared sometimes of the word play because of the age-appropriateness, I feel probably, this is my opinion, that sometimes we're bit scared...because play is something probably, say consider[ed] for a younger child.'

There appeared to be conflict between the development needs of the students with PMLD, and the narrative and ethos surrounding the college setting they attended.

'...because their chronological age is not the same as their mental age. But this is the thing is how do you do it so that it fits in with the college's ethos?'

Helen (Focus-group 1)

Using the term 'play' presented a barrier to staff engagement with the initial focus-group interview. Staff were happier to refer to play as '*exploring things*', '*fun*' or '*being playful*', as they felt this was more age-appropriate terminology.

'Is it more playful, being more playful more so than play because the play links to certain age group. whereas being playful, is across the board.'

Helen (Focus-group 3)

Age-appropriateness was a strong ethos of the college, this was observed by the researcher whilst being in the setting, and through the college website. This impacted on staff responses. Staff wanted to be seen to be upholding the college standards of age-appropriate activities, and the need for this was held in high regard, with one member of staff checking the suitability of the musical tracks with a senior member of teaching staff. Speaking about her concerns of including the track *In the Night Garden* one participant said, *'though it's not technically meant to be [allowed] but, it's instrumental, so I spoke to somebody else, but they said, no it's fine because it's instrumental'*.

The awareness of age-appropriateness, and the importance that the college placed on this affected the way in which staff participants spoke about play and playfulness. However, there was some disparity between what staff felt they ought to say, in line with the college ethos, *'the college talk'*, what staff believed to be the best approach when supporting people with PMLD, and what was happening in staff-student interactions. Staff were more open to discuss and acknowledge this in later focus-groups (2 and 3) after the Musical Play sessions.

'We do probably play with them more than we realise. Yeah...I think you just don't realise you're doing it. It's just done in a different, whatever session you do. It's done in a different style or a different way. Just adapt like you say to whatever you are doing at the time.'

Jenny (Focus-group 2)

7.7 Longevity of impact

7.7.1 Setting 1

During the follow-up focus-group interview (focus-group 3) staff in Setting 1 commented on the continuation of the sessions after the intervention period. In one classroom two staff, Louise and Beth, were implementing a version of the Musical Play sessions daily in their classroom setting. This session was being delivered to the whole class group. The staff used the musical instrument set used in the intervention but had devised their own playlist of instrumental music for the session. Staff had introduced these Musical Play sessions in the next academic term (summer term) after the end of the intervention (spring term). During the follow-up focus-group, staff participants commented on the positive impact the sessions had been having on other children in the class who had not been included in this study. Since the focus-group 3 interviews took place at the end of the summer term (July) the researcher understood that these sessions had been delivered regularly for approximately three months (April-July).

In the class that Ruth worked Musical Play sessions had been introduced as a lunchtime activity for the children. Musical Play was being used with different children than those involved in this study. Staff were using the same musical instrument set that was used in the intervention, however staff also used different instrumental music to support the session. Staff spoke about modelling the approach to the wider class team, including the lunchtime supervisors, and had introduced the sessions to children who had not been involved in the intervention. However, it was not clear how regularly these sessions were taking place, and for what duration the implementation of the sessions had been delivered.

Staff in Setting 1 continued to deliver the Musical Play sessions in their respective classes after the end of the intervention period. However, the difference in the ways in which staff continued to implement the Musical Play sessions, in their main classroom, suggests that small-group, two children and one adult, play opportunities, in a separate environment, was not sustainable for Setting 1. This may have been due to staffing ratios, the availability of staff or space, or other demands on staff time.

7.7.2 Setting 2

Staff in Setting 2 had not continued to implement the Musical Play sessions in any format. One staff participant, Julie, reported that she had used the instrument set, which remained in the setting after the end of the intervention, in her class setting, but not during specific Musical Play sessions.

7.8 Discussion

The following discussion focuses on the findings of the focus-group interviews across both settings and considers these findings within wider literature. Staff attitudes and experiences of play are first examined, after which the value of play in adulthood and the conflicting nature of age-appropriateness is highlighted. The role of play and playfulness as a tool to build and develop relationships between people with PMLD and their supporting adults, as well as peer-to-peer opportunities, are then discussed. Staff experiences of the Musical Play sessions are explored. Finally, the barriers to engaging in and facilitating play are considered. Discussion points were pragmatically generated from the main themes generated from the findings above, and in relation to the research aim for this section of the thesis.

7.8.1. Play for people with PMLD

Staff experience of, familiarity with, and confidence in, facilitating play opportunities differed between the two settings. Staff in Setting 1, a primary-aged (5-11 years) setting, felt confident in facilitating play for children with PMLD. Although staff highlighted that play experiences, especially peer-play opportunities, had been affected by the Covid-19 pandemic, staff discussed experimental and improvisational play for, and with, the children they supported. Staff discussed non-conventional presentations of play for children with PMLD, and the possibility of playfulness was attributed to all children.

In contrast to this, staff in Setting 2 were initially hesitant to consider play and playfulness for people with PMLD, due to the age of the students they were supporting. The absence of play in this setting reflects the findings of wider research, in which play opportunities and the value of

play within education has been reported to diminish as students grow older and move through the education system (Kossyvaki and Papoudi, 2016). However, this may be detrimental for people with PMLD. Due to their profound learning disability people with PMLD may continue to learn incidentally through play into, and throughout, adulthood (Goodwin, 2019; Imray and Orr, 2015). Whilst it is necessary not to infantilise people with PMLD (Inclusive Teach, 2021), and provide a variety of opportunities and life experiences (Mietola and Vehmas, 2019), reducing or removing play may be detrimental to individual and social wellbeing. Furthermore, findings within this research suggest that facilitated play opportunities for young adults with PMLD increased their social opportunities, and awareness of others.

7.8.2 Supporting play

Environmental factors

There were several factors which influenced play for people with PMLD and their supporting staff across both settings. These included environmental factors, such as the place in which play occurred, the resources used, and staff availability to support play activity. Staff in both settings commented on the positive impact that delivering the Musical Play sessions in dedicated spaces, away from the main classroom, had on both staff participants and the children and adults with PMLD. Whilst some staff commented on feeling isolated, and lacking camaraderie, most staff felt less distracted and more connected to the child/ren or young adult/s with PMLD that they were sharing the sessions with. This echoes the sentiments of staff involved in the research of Goodwin (2019), who found that being immersed in a distinct environment (the Golden Tent), allowed staff members supporting individuals with PMLD to feel more 'in the moment' and less distracted by tasks which needed to be completed (Goodwin, 2019, 164).

Aside from the Musical Play intervention, one-to-one sessions, or time away from the main classroom, rarely occurred in both settings. Staff participants reported that this was because of limited space within the setting, or staffing ratios. The sustainability of delivering small group sessions was highlighted further when considering the format of the Musical Play sessions

which took place after the end of the intervention period. As reported in the follow up focus-group interview (focus-group 3), staff in Setting 2 did not continue to deliver Musical Play sessions after the intervention period, due to a lack of timetabling and space. In Setting 1, where staff participants did continue the sessions, these were adapted and delivered in the usual classroom space with all the children. Although identified as a clear benefit for all participants, across both settings, and within the wider literature (Goodwin, 2019; Ware, 2012) it seems that staff and/or settings immediately deprioritised access to small group play opportunities, in purposeful, non-distracting environments. It was expected that staff may not have continued to use the intervention after the study had ceased, and that practices would have reverted to pre-intervention, since this is a common finding of previous intervention studies (Friend et al., 2014).

The value of small group opportunities may be further maximised when working with people with PMLD due to their sensory impairments and sensory processing differences (Grace, 2017). Further investigation into the barriers and benefits to working with small groups of people with PMLD, and one-to-one in purposeful, distraction free environments would be beneficial.

Attitudinal barriers

Attitudinal barriers, at both a macro and micro level, affected access to, and facilitation of, play for the participants. In both settings play was not a priority for people with PMLD. Whilst staff highlighted playful approaches that were adopted within learning environments, outcome driven learning was prioritised over play activity. The values, principles, and approaches of the setting left staff feeling nervous to play freely. For staff in Setting 2 this was clearly linked to institutional attitudes of senior management towards age-appropriateness. For participants in Setting 1 this stemmed from the need to be correctly performing a task when working with people with PMLD in an educational setting. Introducing the Musical Play Framework highlighted a conflict between staff experiences, and institutional narratives. Since there has been an on-going depreciation of the value and necessity of play within education (Gleave and Cole-Hamilton, 2012), and an increase in attainment accountability (Jerrim and Sims, 2022), it is unsurprising that both settings struggled to juggle the place, priority, and value of play.

Permission to play, it seems does not only live in the supporting adult, but also in the culture and values of the setting in which they work. Reassessing the worth and value of playful attributes within the staff team, and facilitating timetabled opportunities, in purposeful environments for play, may go some way in shifting the access to play for people with PMLD. However, for this to be a sustainable attitudinal change, these values need to be adopted at an institutional level.

7.8.3. Relationships

Staff-student relationships

Staff in both settings discussed the role that play, and/or playfulness had in building and developing relationships with people with PMLD. During play, staff reported to have learned more about the students. This included their likes and preferences, as well as abilities that had not previously been seen or demonstrated. During Musical Play staff felt they had the opportunity to ‘get to know’ the participants more. The process of getting to know someone requires people to spend time together, to ‘be together’, or ‘hang out’. The opportunity for people with PMLD and educational staff to be together may be compromised due to busy timetables, complex care routines and demands on staff time and resource. Removing outcome driven objectives may facilitate opportunities for activity and interaction which focuses on the human and relational aspects of being together (Goodwin, 2019).

Forster’s (2008) *Hanging out Programme (HOP)*, highlighted the lack of meaningful interactions people with learning disabilities take part in throughout the day and aimed to begin to address this. The HOP suggests supporting adults should allocate a period of 10-minutes to ‘hang out’ with the person they are working with, ‘giving the person 100% attention’ (Forster, 2008, 6), through which staff and participants can get to know each other. Like the HOP, Musical Play sessions created space for staff to spend dedicated time interacting with people with PMLD, in which their attention was focused on the playful exchanges. The humanising outcomes of the dedicated play time were similar to findings of previous research for people with PMLD (Brigg et al., 2016), in which shared experiences and relational commonality allowed staff participants to see individuals with PMLD ‘as people’. This is a significant outcome of the Musical Play

intervention, which likely occurred due to a combination of both the playful activity and the dedicated, regular, and undistracted time staff spent in the two-to-one sessions.

Since children and young people with PMLD spend a large proportion of their time in educational settings (Goodwin, 2019), it is fundamental that they can have meaningful relationships whilst there. These relationships are necessary for people with PMLD ‘to demonstrate their competencies and personalities, and to flourish as active partners’ (Hostyn and Maes, 2009, 297). This is only possible if staff view children and young people ‘as people’, rather than tasks, with the potential to form, build and develop relationships. Knowing an individual, and sharing a relationship with them, affects the motivation, quality, and purpose of interactions (Newberry, 2010). Sharing positive experiences and associations with another can lead to better resilience when difficulties arise (Lopez and Corcoran, 2014). Staff perceptions of participants altered because of their involvement in Musical Play sessions and these feelings transferred, and continued, into the main classroom settings. This is likely to have led to increased feelings of positivity towards the participants with PMLD, improved the quality of interactions with them, and strengthened the relationship staff felt they had with the students they supported who had been part of the intervention.

Peer-relationships

The difficulties staff articulated in facilitating peer-play have been identified within the wider literature involving peer-play activities for people with physical and learning disabilities (Nijs and Maes, 2014). These included the cognitive ability, sensory impairments, and physical abilities of the participants. Alongside this, the positioning of the participants was considered as a barrier to peer interactions, as well as the divided and stretched attention of staff juggling the individual personalities and abilities of the participants they were supporting.

Despite these difficulties, Musical Play sessions had the potential to shift attitudes towards peer-play for some staff participants. As discussed in chapter 4, staff have a prominent role in facilitating opportunities for peer-awareness and interaction. The potential for Musical Play sessions to be a catalyst to greater awareness of, and value on, peer-play activity for people with PMLD, is likely to positively impact on their overall social wellbeing. With appropriate

social scaffolding, peer-play, and peer-awareness, may allow individuals the opportunity to lead interactions, create humour, and support feelings of togetherness. Repositioning people with PMLD as active, social agents within their peer networks.

7.8.4. Musical Play sessions

Staff experiences

Staff participants in both settings found the initial implementation of the Musical Play sessions daunting. Staff felt they did not have enough guidance to know what to do, or if what they were doing was '*right*'. Although staff were trained in the principles of Musical Play there was flexibility in the framework. Most staff participants were TAs. Within this role, except for supporting personal care, staff rarely worked autonomously away from the main classroom or direction of the class teacher. The Musical Play Framework was based on principles which were not prescriptive tasks or goal orientated. Unlike other musical interventions which staff may have experienced, such as Tacpac (Tacpac, n.d.), the Musical Play Framework did not include steps or activities to work through, resulting in staff feeling unsure of their practice.

Nevertheless, staff were able to facilitate Musical Play, and felt empowered by the opportunity to reflect on, learn from and contribute to the research process. This suggests that with the appropriate guidance, a network of support among colleagues, and scaffolded opportunities to reflect on their practice, TAs can adopt, and implement interventions for people with PMLD independently. Since most activity is delivered, or supported, by TAs in specialist educational settings (Abbot et al., 2010) upskilling TAs understanding, and skillset is necessary (Haakma et al., 2021). Furthermore, facilitating opportunities for TAs to share in creative and playful activities, which are not outcome driven, and in which they are able share of themselves in a personal and individualised way, may support greater staff self-worth, and increase individual knowledge bases of learners within the setting (Belknap and Taymans, 2015).

Reduction in language

Musical Play sessions were designed to be implemented in almost languageless environments, where staff were encouraged to reduce language to 'positive language of three to four words.'

Some staff found this element of the Musical Play sessions particularly challenging. The difficulty and discomfort staff experience in reducing language when working with people with PMLD has been highlighted in previous recent research (Goodwin, 2019; Grace, 2017; Watson, 2018). Goodwin (2019) argues that staff must overcome this discomfort to open the space for people with PMLD to engage in interactions. To support staff in this process Goodwin (2019) provided a musical accompaniment, in the form of a drone, to encompass the openness and 'hold' open the possibility for interactions. Similarly, the Musical Play sessions used playful instrumental music to create the space for reciprocity. Although far more musically complex than a drone, instrumental music was adopted as a medium in which staff were supported through potential extended periods of silence and discomfort. Using music in this way may discourage staff from filling space, in which people with PMLD may be processing, thinking, or listening, to list only a few, with words, and therefore support the reduction of language. Staff articulated a greater understanding of, and were able to comment on, the benefits of adopting this after taking part in the Musical Play sessions.

Use of instruments

The instruments used within the Musical Play sessions were identified as being motivating and engaging for participants with PMLD. Staff were confident to use the instrument set provided and had continued to use these resources after the intervention period ended. Staff described how using the instruments motivated participants to demonstrate physical and vocal abilities that staff had not previously seen or known about. Corke (2012) highlights how musical instruments can be used in playful ways to invite playfulness and engagement with people with PMLD. Staff experiences within this study echoed these suggestions. Seemingly, during Musical Play sessions participants were able to flourish, in that they had the ability, and the external opportunity, to realise their capability and demonstrate this to staff (Sissons et al., in Press).

Longevity of impact

The longevity of impact of implementing the Musical Play sessions varied between and within the settings. Some staff participants from Setting 1 (n=3) continued to deliver the Musical Play sessions, although in different formats and environments, on a daily or weekly basis, for at

least a period of three months after the intervention period had ended. However, most staff (n=7) had not continued to implement the Musical Play Framework after the intervention period. Most staff commented on a growth in their own personal development, understanding and attitudes towards play. Whilst some staff did not continue to deliver the Musical Play sessions the impact of participating in these sessions, and the relationships which build and developed between staff and participants with PMLD transferred back into their typical classroom environment. Furthermore, staff described how principles of the Musical Play Framework, such as a reduction in language, had been adopted into their practice. Understanding and evidencing the extent of this would require further research.

7.9 Summary

This chapter presented the findings of the focus-group interviews which were conducted with staff participants in Setting 1 (n=6) and Setting 2 (n=5) over a period of approximately 6-8 months. Staff participants were trained in using the Musical Play Framework and delivered weekly sessions for participants with PMLD. Using abductive thematic analysis several themes were generated from the data which provided insight into staff attitudes towards play for people with PMLD. The impact of the implementation of the Musical Play Framework on staff attitudes and approaches to play for people with PMLD was also considered. Findings of this research were then discussed in relation to the wider literature.

The following chapter is a conclusion of the study, it presents the overall findings of this research, drawing together the results from across chapter 5 and chapter 6. The implications of these findings on policy and practice are then discussed. After which the chapter addresses the limitations of the study and suggests areas for further research.

8. CONCLUSION

Introduction

This thesis aimed to investigate the impact of implementing the Musical Play Framework on the play experiences of people with PMLD and their supporting adult play-partners. The first phase of this research, Phase 1, presented in chapter four, included a consultation with people with PMLD on their musical preferences. Through employing parent/carers as proxies, the researcher explored musical elements which may engender feelings of playfulness for people with PMLD. This phase of the research, which used participatory design with proxies, aimed to disrupt researcher hierarchy through co-developing the musical content used within the implementation of the Musical Play sessions during Phase 2 of the study.

The main part of this study, Phase 2, introduced the Musical Play Framework to two specialist settings in the UK. Using mixed-methods, including a multiple baseline design, and focus-group interviews, data was collected from and with participants, children and adults with PMLD, and staff participants. This phase of the study had three aims. Firstly, it aimed to consider how Musical Play sessions impacted on the potential expressions of playfulness of participants with PMLD. These results were presented and discussed in chapter five of this thesis. Secondly, the impact of the Musical Play sessions on the peer-awareness and interaction of people with PMLD was investigated, and the results presented in chapter six. The final aim of this phase of the study was to consider the impact of implementing the Musical Play intervention on staff attitudes and confidence towards facilitating play for people with PMLD. The findings of this were explored in chapter seven.

The final chapter of the thesis draws conclusions from both the quantitative and qualitative data and presents the main findings from the whole study, both phase 1 and phase 2. After which the original contributions that this study makes to the research field are discussed. The limitations of the design and implementation of the study are then highlighted. The implications of the findings of this research to influence wider policy and practice are then presented. Following this, recommendations for further research are suggested.

8.1 Main findings

The following section combines the findings of both quantitative data (Chapter 6) with the qualitative data (Chapter 7). The process of drawing conclusions from across the data is part of the concurrent triangular mixed-method design of the research. Assimilating the findings in this way aims to further strengthen the outcomes of this research. Main findings are presented in relation to the research questions.

8.1.1 Musical Play sessions can increase the frequency of potential expressions of playfulness for people with PMLD

During the focus-group interviews staff, from both settings, recounted the positive responses and experiences they had shared with participants with PMLD during the Musical Play sessions. Staff spoke of students increased engagement, vocalisations, and awareness. For the most part these positive narratives were reflected in findings from the quantitative data. Findings from the quantitative data varied between each participant, and across each Musical Play session. However, it is likely that staff were recounting sessions in which expressions of playfulness were particularly frequent. Since the focus-group interviews happened after the full intervention period, it was expected that staff would recall sessions in which most playfulness occurred as these were likely to have been the most memorable experiences (Edwards and Holland, 2013).

Qualitative data captured staff perspectives and reasoning on the successes of the sessions. Some of these reasons included the musical instruments used, and the purposeful, distraction-free environment in which the sessions took place. Findings from the quantitative data further evidenced the effect of these elements on the potential expressions of playfulness observed. Most reactive play behaviours were recorded in response to the musical instruments (B: *objects offered*) used in the Musical Play sessions. As highlighted in previous literature (Brodrin, 2007; Imray and Orr, 2015), it is necessary to use motivating and engaging stimuli to encourage feelings of playfulness for people with PMLD. In the case of this research the external stimulus

was a selection of musical instruments, and the staff play-partner. Therefore, one consideration in facilitating successful play opportunities for people with PMLD should be the materials or equipment used. This study highlighted that resources, other than typical toys, can, and should, be used to support opportunities for playfulness. The varying sensory elements of the instruments, such as their tactile interest, and sound quality, along with the responsiveness of the instruments to minimal movements, may have further encouraged the playful responses of participants. Better understanding of the play equipment and resources used in supporting play for people with PMLD is likely to further enhance their play experiences.

Reactive play was observed more frequently than reciprocal play for all participants across both settings. The value of reactive play, the earliest form of playfulness (White, 2006), may be overlooked when considering presentations of play. Since play is often intrinsically linked, both in theory and practice, with child-led or spontaneous activity (Sumsion and Harrison, 2014), play which is reliant on adult initiation, such as the reactive play observed in this research may be easily dismissed or disregarded as play activity. Typically developing babies and children quickly progress to and through reactive play, in which they may laugh at the sounds, actions or stimuli provided by a caregiver (Markova, 2018), and as such the value of these experiences for older individuals may be overlooked. Nevertheless, playfully engaging with a clown, laughing at a joke, or simply receiving the actions of another as an invitation to play are all reactive play responses that carry value way into adulthood. It should not be seen as any lesser that people with PMLD primarily engage in play and playfulness in this way and may do so for the whole of their lives.

This research builds on Watson's (2015) Playfulness Cycle, in which the Musical Play Framework encouraged staff to present an 'offer' of play to participants with PMLD. This 'offer' (Watson, 2015) was presented through the use of the playful instrumental music, the musical instruments, and the availability and interactive style of staff participants. It should be noted here that Musical Play is not intended as something to be 'done to' participants with PMLD, but rather is an experience which is shared 'with' them. Acknowledging reactive play as the primary

play skill and experience of people with PMLD is significant in understanding what playfulness might look like for this population and how best to facilitate this. If supporting staff consider play and playfulness to be a more complex, independent, and sophisticated activity then the playful attempts and exchanges of people with PMLD may be misattributed. Staff that have greater understanding and confidence in recognising and initiating play may also have more awareness of their responsibility to provide and explore a variety of resources and approaches that may engender feelings of playfulness for and with people with PMLD.

For participants who had the skills to frequently engage in reciprocal play (n=4) this occurred more often during the Musical Play sessions than the baseline activity, except for Robynn when supported by play-partner 1 (Bina). Most participants were not often recorded displaying reciprocal playfulness, in either the baseline sessions or the Musical Play sessions. There was correlation between the reciprocal play skills demonstrated during the baseline sessions and the Musical Play sessions, in that if a participant did not often demonstrate reciprocal play during the baseline period, the occurrence of this during the intervention period was also low. This suggests that for these participants the skills to participate in reciprocal play were not easily or regularly used.

Staff in this study revealed how attitudinal values towards play influenced the experiences, and expectation of participants with PMLD. Within this research staff perceptions towards the playfulness and capabilities of participants with PMLD were confronted, reflected on, and altered. For at least five of the nine staff participants (this may have been the opinion of more staff participants but was not highlighted during the focus-group interviews) their perceptions of the individuals they were working with were changed because of the Musical Play intervention. Staff discussed how Musical Play sessions had enabled participants with PMLD to demonstrate capabilities that had not previously been known to them. This was supported somewhat by findings in the quantitative data, such as the development of Chaviv's reciprocal play (see Figure 18), in which some potential expressions of playfulness were only demonstrated during the Musical Play sessions, or the turn-taking of Hamza and Robynn (see Figure 17 and Figure 25).

8.1.2 Peer-play is a challenge

The second research aim in the main phase of this study was to consider how Musical Play sessions effected the peer-awareness and peer-play of people with PMLD. Findings from both the multiple baselines and the focus-group interviews suggested that peer-play was not often expressed by most participants with PMLD and was difficult for staff participants to facilitate. Peer-play was less prevalent in Setting 1 (primary-aged participants) than in Setting 2 (college-aged participants).

Setting 1

The absence of peer-play in Setting 1 was notable in both the quantitative and qualitative data, and whilst this may have been influenced in some way by the restrictions in place due to the Covid-19 pandemic, it seemed that staff were unsure of how to facilitate peer-play for people with PMLD, nor were they convinced of the worth of this. This was particularly evident in the lack of baseline peer-play activity recorded in this setting and further supported by evidence from the focus-group interviews. During all Musical Play sessions all participants in Setting 1 (apart from Jordan) demonstrated their awareness of their peer at least once throughout the Musical Play session. These positive experiences, although small, may have contributed to the shift in staff attitudes captured during the focus-group interviews. Additionally, the emphasis placed on peer-play through the implementation of the intervention may have also contributed to the somewhat altered perspectives of staff participants towards peer-play.

Setting 2

In Setting 2 staff valued the opportunities for peer-play that the Musical Play sessions provided. This was captured through the qualitative data. The attitudes of staff in Setting 2 differed from those in Setting 1 regarding peer-play. The reason for this is not clear. Whilst there was still some scepticism regarding the value of peer-play for people with PMLD, staff were conscious to articulate the peer-interactions provided by the intervention and the worth of these. One reason for this difference in attitude may be that staff in Setting 2, a college setting, were

concerned and alert to the relationships which may have been expected between non-disabled peers during this stage of life (youth). This reasoning was highlighted in Vehmas and Mietola's (2021) study of the social lives of people with PMLD, where staff members (care workers in the context of the study) advocated for the normative experiences of youth, such as friends, to be available and necessary for one participant, Hugo. It could be possible that the staff in Setting 2 held a similar perspective to this. Additionally, the college included a wide range of students with various learning disabilities, resulting in an environment where peer relationships between other college students who had moderate/severe learning disabilities, were prominent. This too may have influenced staff perceptions of the value of peer interactions.

Additional influencing factors

Since all participants with PMLD were recorded observing their peer in most sessions, it seems that peer-awareness may be possible for people with PMLD. Previous literature (Nijs et al., 2016; Watson and Corke, 2015) has highlighted the challenges experienced by people with PMLD to share in peer-play. However, studies have also outlined additional influential factors, such as the role of the supporting member of staff, and the positioning of participants, on the opportunities for interaction between people with PMLD (Kamstra et al., 2019).

During staff focus-group interviews consideration of the positioning of peers was emphasised as an influential factor on the peer-play of participants. These comments supported the findings of Kamstra et al. (2019). However, a greater analysis of the quantitative data, beyond the scope of this research, would be necessary to consider if this was supported by a change in the frequency of peer-play observed. Similar to the findings on the individual playfulness of people with PMLD, analysis of the quantitative data revealed that expressions of playfulness during peer-play were also influenced by the supporting staff play-partner.

Through the lens of the capabilities approach (Nussbaum, 2011), it could be suggested that participants within this study had the ability ('internal capability') (Nussbaum, 2011) to take part in peer-play, in that all participants were observed demonstrating peer-awareness during play activity. However, for some participants, particularly in Setting 1, this capability may not have been realised outside of the Musical Play session as the opportunity to act or

demonstrate this ‘combined capability’, had not been available. Furthermore, findings from both the quantitative and qualitative data suggest that there may be more conducive factors, such as the positioning of participants, and the support of the staff play-partner, that could be further considered to develop opportunities for flourishing in this area. The outcomes of this research supported findings from Kamstra et al. (2019), which argued that people with PMLD can, and do, attempt to interact with their peers, even when the conditions are not always most favourable.

Since peer-play is a challenge for staff to facilitate, and potential expressions of playfulness are demonstrated less often than in dyads involving a supporting adult and individual with PMLD, the value of peer-play may be questioned. However, peer-play facilitates opportunities for individuals to experience friendships, explore emotional and social intimacy and cultivates a sense of belonging (Kochenderfer-Ladd et al., 2019). The ways in which people with PMLD may develop these friendships, and explore intimacy is likely to differ from their non-disabled peers (Johnson et al., 2012), however, they have both a right and need to share in reciprocal and affective relationships with others (Kamstra et al., 2019). Ultimately, the value that supporting staff place on peer-play directly impacts on the availability of this. If peer-play for people with PMLD is not facilitated by supporting staff, in most instances, it will not occur (Vehmas and Mietola, 2021). If staff do not value peer-play for people with PMLD, likely they will not facilitate it, because, as evidenced by this research, it is not easy. Within this research the Musical Play Framework positively influenced staff attitudes towards the value of peer-play for people with PMLD. During the focus-group interviews which followed the implementation period staff described presentations of peer-play, the value of which may previously have been overlooked. Most notably, some staff reevaluated the potential for participants with PMLD to be social beings, who were capable of engaging in, and enjoying, peer-interactions.

8.1.3 Relationships matter

Findings from both the quantitative and qualitative data evidenced the importance of relationships in play. Play was both effected by, and had effect on, the relationships between people with PMLD and their supporting staff. The significance of the role of the adult-play

partner on the play experiences of people with PMLD was evidenced in the quantitative data collected with Robynn and Joel. Potential expressions of playfulness were fewer when supported by Bina rather than Helen. The differences in the personal attributes of these staff participants, their comments during the focus-group interviews, and an awareness of their previous experiences, provided some insight into the personal qualities needed to encourage playfulness with people with PMLD. The qualities and skills of supporting adults have been highlighted within the literature (Corke, 2012; Watson, 2015). The findings from this study emphasised the value of these skills and the impact that the role of the play-partner had on the play experiences of people with PMLD.

This finding prompts several considerations. Firstly, individual play opportunities for people with PMLD may be enhanced if they are supported by a specific adult. Adults who have an innate desire for playfulness and the ability to respond to the playfulness of the individual (Watson, 2014) may be best positioned to facilitate play opportunities for people with PMLD. However, since these qualities may not always be innate, or readily available within the personalities of a staff team, exploring whether these skills can be taught, or engendered within classroom culture is necessary. The theoretical guidance and training such as that outlined by Corke (2012) or provided by the Musical Play Framework may go some way to combat this.

Secondly, people with PMLD may have a preference of play-partner. It is not possible to know from the findings whether Robynn and Joel were observed playing more often with Helen because of her attributes (although these were more exaggerated, playful, and engaging than Bina's), or because of their relationship with, and preference towards, Helen, regardless of the Musical Play experience. An awareness of both staff qualities of playfulness and student preferences of play-partner may further enhance opportunities to support playfulness for people with PMLD.

Reciprocity

During the focus-group interviews staff spoke of how their relationships with participants had developed through their involvement in the Musical Play sessions. These relationships had

been cultivated through the dedicated time that participants had spent together, sharing a positive experience during the intervention. Facilitating opportunities for people to build positive relationships is fundamental to increased individual and social wellbeing (Hostyn and Maes, 2009). Findings from this study suggested that involvement in the Musical Play sessions strengthened staff relationships with the individuals with PMLD that they supported. This developed relationship transcended the boundaries of the sessions and continued to influence staff-student interactions within the classroom. Musical Play sessions provided the opportunity for reciprocal relationships between staff and students with PMLD to form and develop. During the sessions participants with PMLD were not only the receivers of play but also the contributors to it, furthermore, their contributions within Musical Play impacted on both the experience and emotions of staff participants. It is important for staff to have the opportunity to share in mutually rewarding experiences with the people with PMLD that they support. Reciprocity between both play parties (staff and students) enabled staff to experience the humanising qualities of the individuals they were supporting. This supports findings from previous research (Vorhaus, 2015). The playfulness, laughter, and enjoyment that participants shared during the Musical Play sessions enabled staff to see more aspects of the personality and character of students they supported.

Activity which facilitates opportunities such as these are necessary and beneficial for all involved. Since staff work daily with people with PMLD, knowing and seeing them as people, is likely to impact on the quality of interactions and the relationships which exist. The quality of these interactions ultimately will affect the quality of life, individual and social well-being of people with PMLD (Vemhas and Mietola, 2021). Furthermore, having positive experiences, such as those facilitated by the Musical Play sessions, to draw on during difficult and stressful times, may support staff resilience and motivation (Belknap and Taymans, 2015).

It is not possible to see from the quantitative data whether these developing relationships impacted on the play experiences of participants with PMLD during the intervention sessions. However, it should be noted that since staff felt positively towards the individuals and the activity it likely affected their behaviours and interactions during the implementation of the

Musical Play sessions. The following section considers the original contributions this thesis has made to research.

8.2 Contribution to research

8.2.1 Music and PMLD

The first phase of this study positioned people with PMLD as consultants within research using a participatory design with proxies (PDwP) method (Rushton et al., 2023b). To the best of the researcher's knowledge there have been no previous exploratory listening experiences created for people with PMLD. Neither have the musical preferences of people with PMLD been investigated and recorded in such a participatory way before. Evidencing the effect that different musical elements have on the responses and behaviours of people with PMLD is important. Phase 1 of this study contributes to research which acknowledges the impact that environmental sounds, such as background music, may have on the experiences, mood, and behaviours of people with PMLD (Bosch et al., 2016; Kittay, 2008). Furthermore, it adds to arguments of previous research which suggested that people with PMLD have musical preferences (Rushton and Kossyvaki, 2022).

8.2.2 Participatory research methods

In conducting the first phase of the study using participatory methods this research adds to the current literature which acknowledges the value and capabilities of people with PMLD (de Haas et al., 2022; Nind and Strnadová, 2020). This shift in narrative disrupts the perception of people with PMLD as passive subjects of their own lives, and instead emphasises the active contributions they make. Phase 1 of this study aimed to address the imbalance between the researcher and the researched through the use of participatory design with proxies. This study evidenced the possibility to include people with PMLD as co-designers.

The researcher is only aware of one other study (Frid et al., 2022) which has included people with PMLD in the consultation of the design of resource aimed for their use. Previous participatory research, which has included people with PMLD in inclusive processes, has not sought to develop or better understand the relevance or usefulness of a tool or resource

(Gjermestad et al., 2023). The first phase of this research not only highlighted the value of participatory research, but also demonstrated how this could be practically implemented with people with PMLD using creative and novel research methods. Involving people with PMLD within research processes is often considered to be too complicated, or not possible (de Haas et al., 2022). However, Phase 1e of this research evidenced the possibility, necessity, and value of this.

8.2.3 Play, playfulness and PMLD

There are few studies which consider the playfulness of people with PMLD (Watson, 2014; Yates, 2017), particularly in relation to peer-play between individuals with PMLD. This study adds to the literature which highlights the value of play for and with people with PMLD (Corke, 2012; Watson, 2020). Specifically, this study contributes to research which aims to better understand the value of play and playfulness in adulthood for people with PMLD. Findings from this research further support the principles for playfulness outlined in Watson's Playfulness Cycle (2015) as being an effective way to facilitate playfulness for both children, and adults with PMLD. Adding to Watson's research this study evidences the impact of using music as an 'offer' or invitation to play for people with PMLD. Empirical findings from this study support Corke's (2012) theory on the use of creative and musical approaches to support the playfulness of people with PMLD.

The following section considers the limitations of the study.

8.3 Limitations

There are numerous limitations related to the design and implementation of this study. The small sample size means that the generalisability of the findings to the wider population of people with PMLD is limited. However, this was not the intention of the research, instead the aim was to further develop the Musical Play Framework and consider the impact of this intervention on children and young people with PMLD and their supporting staff.

Research design

Phase 1 used an online questionnaire, from which an unrestricted, self-selected sample was generated. This sampling method may have created numerous limitations and compromises (Vehovar and Manfreda, 2017), which may have undermined the validity of the sample. Since the study was conducted using an unrestricted, self-select survey, anyone with internet access was able to contribute to the data. This may have led to participants outside of the target population completing the survey. Further, the ambiguity of this grouping, and the labelling of people with PMLD (Nind and Strnadova, 2020), may have led to some uncertainty for parents/carers as to whether they identified their child/YP as having PMLD. To address these limitations a clear definition of PMLD used within this study (Doukas et al., 2017) was provided on the participant information sheet. It was assumed therefore that all respondents were part of the target population.

A further limitation of the online questionnaire was the lack of opportunity for questions to be explained. Therefore, it was possible that each participant may have interpreted and understood the question differently (Gillham, 2008). Whilst some efforts to reduce misinterpretation had been made after piloting, through the addition of the video, it may still have impacted on responses. Additionally, the equipment parents/carers used in the exploratory listening experience may have affected the findings. For example, those using speakers for amplification may have experienced the instrumentation of the tracks differently. However, using an online questionnaire meant that participants could take part at a convenient time, and return to the questionnaire later if there was an interruption. This was an important consideration when researching with people with PMLD and the parent/carers due to the demands and inflexibility of their care routines (Wilder and Granlund, 2015). Furthermore, the online nature of the questionnaire meant that participants did not need to travel to contribute to the research, again another consideration for people with PMLD and their parent/carers.

The design of Phase 2 of the study aimed to provide a comprehensive understanding of implementing the Musical Play sessions on all participants using a mixed-method approach to answer the research questions. However, the validity and transferability of the findings are

limited. This is due to the heterogeneity of the population. Whilst the multiple-baseline design aimed to overcome the challenge of constructing a homogenous control group, as with all real-world research, changes in expression or behaviour could not be wholly attributed to the introduction of the Musical Play sessions. There were numerous other external variables and contributing factors that may have affected individual responses. Therefore, the findings of this study should be viewed with the understanding that this research was an investigation of the impact of introducing the Musical Play Framework rather than to evidence a causal relationship.

Due to the real-world nature of the study, and the implementation of the Musical Play sessions by staff participants, the internal validity of the research might have been compromised. Differing individual approaches to the sessions by staff participants may have affected the content and approach to the sessions, thus impacting on the intended experiences for the participants with PMLD and the data generated.

Missing data

Missing data can be considered a limitation of this study. In Phase 1 of the study only thirteen (50%) of the total participants from whom data was used (n=26) completed the exploratory listening experience. The response rate, and drop-out point, of proxies completing the exploratory listening experience was notable. There are numerous reasons why this may have occurred, perhaps parent/carers were not familiar with their child actively participating in research. This may be due to the exclusive culture of research, which has neglected to include people with PMLD as active contributors (Cluley, 2016). Furthermore, parents may be familiar with advocating for their child in their absence, and so the participant with PMLD was not actually present when the questionnaire was being completed. Alternative in-person data collection methods may have increased participation; however, this was not possible due to the Covid-19 pandemic.

Within Phase 2 of the research missing data impacted on the findings of the study, particularly in relation to baselining the peer-play of participants in Setting 1. In this setting the lack of baseline data collected for peer-play meant the conclusions that could be drawn on the effect

of the intervention on the peer-play of the participants with PMLD was limited. Further, extending the period of baselining (collecting more than five data points) for participants with PMLD may have led to a more accurate and representational baseline. This was not possible in this study because of limited time. Additionally, limited demographic information collected from staff participants meant that influential factors, relevant to the study, such as the participants' age, previous musical experiences, or any prior training in music and/or PMLD, could not be considered when analysing the data or drawing conclusions from the findings. This information may have provided greater insight into the staff participants' abilities and attitude towards the Musical Play Framework.

Time restrictions

Due to time restrictions the length of implementing the intervention was limited to one school term (12 weeks). A longer period of intervention may have been more suitable, as participants with PMLD may require additional time to process, engage with and come to anticipate activity in comparison to their non-disabled peers. However, due to the time restrictions of PhD study (three-years) and the disruption of the Covid-19 pandemic this was not possible. Additionally, longitudinal data (beyond the three-month follow-up focus-group interview) would have been useful, to evidence whether there were any longer-term effects of the intervention. Again, this was limited due to time restrictions.

Additional influencing factors

Internal factors, such as participants' health, and general well-being and tiredness, likely effected the potential expressions of playfulness recorded across the intervention. The effect of these cannot be excluded from impacting on the findings. Furthermore, some of the developments or increases in potential playful behaviours may have occurred due to the

personal or skill development of participants with PMLD, regardless of the intervention. Finally, the skill development, familiarity with the intervention, and the approach of staff participants likely altered and/or developed throughout the intervention period. This in turn may have affected the experiences of the participants with PMLD and frequency of potential expressions of playfulness observed.

Interpretation of behaviours

During Phase 1 of this study, the online questionnaire relied on both parental interpretation and reporting. Proxy reporting may have meant that the responses and communicative behaviours of the participants with PMLD contributing to the experimental listening experience were not accurately interpreted (Ware, 2004), or relayed to the researcher successfully. However, as previously discussed in this thesis (Chapter 4) the researcher disputes this argument.

When discussing Phase 2 of the research the term ***potential expressions of playfulness*** has been used. This term was adopted to acknowledge the aspect of interpretation necessary when translating the expressions, communication, and behaviours of people with PMLD. Whilst the coding of expressions of playfulness was undertaken by people who regularly work with, and alongside people with PMLD, the communications of each individual with PMLD are nuanced and unique. Since this is the case, there may have been occasions in coding the videos where communications have been over, under, or misinterpreted. An addition to this study could have been to gather an individualised profile of current and best understandings of the communication methods and potential expressions of playfulness for each participant with PMLD, provided by people who know them well (i.e., support staff, family member, teacher etc.).

8.4 Implications for policy and practice

The following section considers how findings of this research may be considered in relation to policy and practice. Since this research was undertaken in England, there is a strong reference to policy in relation to current UK, and more specifically English, governmental policy.

8.4.1 Implications for policy

Education

The concerns of UK education are dominated by achievement, progress, and work-readiness, so much so that the presence of play continues to diminish from school experiences (Imray and Colley, 2017). Since people with PMLD will never be ‘work-ready’ a narrative which entwines worth and value on these successes ultimately diminishes the worth and contributions of this population. There has been little agreement on the motive and goals of education for people with PMLD (Ware, 2017, as cited in Colley, 2018). The Engagement Model, a statutory framework of assessment for people with PMLD, (GOV.UK, 2020) suggests that experiences which facilitate high levels of engagement and motivation are most appropriate in the education of people with PMLD. The model outlines five areas of engagement; exploration, realisation, anticipation, persistence, and initiation. It is possible that these five areas of engagement may be realised through play. The Engagement Model emphasises the importance of engagement on learning for people with PMLD. Since people with PMLD are functioning at the earliest stages of cognitive development the incidental learning that playful exchanges afford may be most appropriate.

During focus-group interviews staff evidenced the incidental learning which had taken place during the Musical Play sessions. This included individual participants demonstrating and achieving targets and skills which staff had otherwise been unable to ‘teach’. The Musical Play Framework used musical instruments as engaging resources. Findings from the study evidenced the reactive and reciprocal play, in which people with PMLD responded to, and shared attention of, the musical instruments used within the intervention. Furthermore, during reciprocal play some individuals were able to initiate interactions when A: *reaching for* or initiating B: *vocalisations* during Musical Play. Since the engaging, motivating, and accessible nature of music for people with PMLD has been evidenced (Ockelford, 2008; Rushton and Kosyvaki; 2020, 2022; Solms, 2022), and the Engagement Model recognises these elements as the fundamentals of learning for people with PMLD, there is a strong argument for the use of both music and play to be prioritised in the education of people with PMLD. Therefore, it may

be possible to advocate for Musical Play sessions to be implemented with students for whom music is known to be engaging and motivating to provide opportunities to evidence and develop the five areas of engagement outlined in the Engagement Model (GOV.UK, 2020).

Furthermore, attention is needed to consider the motive and purpose of education for people with PMLD. Since many people with PMLD will not live into adulthood (Tyrer et al., 2007), and some have degenerative conditions (Male, 2015) where skill maintenance is likely to be a priority over skill development, an education which prioritises and celebrates individual learning and social well-being, through communication, high quality relationships and fun may best support people with PMLD to flourish.

Value of play

There is currently no national policy in England which focuses on play. The value of play is recognised in the Early Years and Foundation Stage Framework (EYFS) (UK.GOV, 2023), after which point it is absent from policy. This echoed the policies of Setting 1, in which play has a specific presence in Setting 1's EYFS policy:

'Early Years pupils and everyone else within the Lower School department believes that play has an important role in learning, practicing, and developing new skills and in the therapeutic effect that play has for children. Play skills are incorporated throughout the curriculum documents and discreet play sessions are taught throughout the department'.

In contrast to this the main school curriculum, access by older primary-aged students such as Kaden and Jordan, stated that; *'Those pupils working from STEPS 1- 9 [PMLD] are taught through topic-based activities, combining curriculum areas through supported, multi-sensory led learning experiences and play'.* In Setting 2 there is no mention of play in any of the college policies, curriculum, or website.

This study found that staff needed permission to play. Although playfulness was used as an approach to learning, play activity was limited in Setting 1. In Setting 2 not only was play activity non-apparent, but even the notion of play was actively discounted as unsuitable for the

adults with PMLD that they were supporting. The importance of institutional policy and ethos on staff attitudes towards play was emphasised within this research. However, it is understandable that school and college settings, such as those included in this study, are compromised in the play opportunities they provide, since there is no national guidance or policy on the play opportunities of children and young people with learning disabilities.

Non-disabled children and young people access regular play opportunities within the school day, at breaktimes and lunchtime (Clements and Harding, 2022). During this time, they can engage in self-directed, spontaneous play activity, for people with PMLD this is not possible. People with PMLD are dependent on adults to facilitate opportunities to play and elicit feelings of playfulness (Imray and Orr, 2015). This requires staff time and attention. Unlike their non-disabled peers, play for people with PMLD requires increased staff support, and a responsive and personalised approach. The importance of high staff ratios and responsive personalised approaches to play were evidenced in the findings of this study. Meaningful play experiences for people with PMLD cannot be achieved on skeleton staffing numbers during break or lunchtimes, instead they must be carefully and purposefully timetabled and suitably resourced within the school-day.

Responsibility

Findings from within this study highlighted the positive impact that purposeful play environments, where the distractions for both students with PMLD and staff play-partners are reduced, had on both students with PMLD and their supporting staff. There is a need to recognise the value of supporting people with PMLD in small groups, away from the main classroom. These opportunities may enhance the engagement of both students and staff. Purposeful environments may facilitate time for students to explore and influence their surroundings to greater affect (Ware, 2012). With a heightened awareness of their individual contribution to the space, people with PMLD may be more motivated or inclined to express themselves. Without additional distractions from a busy classroom supporting staff may be more alert and responsive to the communications of people with PMLD. It is important to acknowledge the value of these environments and advocate for the inclusion of these spaces in

settings which support people with PMLD, since in many specialist settings, such as Setting 2 within this study, space for small group or one-to-one sessions are limited or not available. This impacts on the opportunities people with PMLD have to access this resource, these experiences, and the possibilities of increased engagement and awareness they may facilitate.

Throughout this thesis the role of the supporting adult on the play experiences of people with PMLD has been prominent. Since people with PMLD are interdependent, reliant on the support of another to access most aspects of daily life (Vehmas and Mietola, 2021), their access to play is also interdependent. Therefore, to access play opportunities people with PMLD rely on the availability and support of another. This is a significant consideration for policy. Since play is the right of every child (UNCRC: Article 31; 1989) and people with PMLD depend on adults to support play, then staffing ratios within school settings must reflect this.

The impact of low staffing ratios was evidenced in this study, with data on one of the participants being withdrawn from the findings as staff-to-student ratios were too low to facilitate the implementation of the intervention. Additionally, during the period of research most staff were able to facilitate the small group (2-to-1) Musical Play sessions. However, once the intervention period ended staff who continued to implement the intervention (Setting 1) did this in a whole class setting, suggesting that staffing ratios no longer made the small group play opportunities feasible.

Policy which emphasises and outlines the value of play, and the right children (and young people) have to experience and engage in play activity is necessary. When the value of play is nationally recognised and specifically addressed, beyond the point of EYFS, specialist schools and colleges may be more confident to implement play sessions and allocate the time and resources necessary to facilitate this fundamental right.

8.4.2 Implications for practice

Role of adults

The qualities and skills of supporting adults have been highlighted within the literature (Corke, 2012; Watson, 2015). The findings from this study emphasised the value of these skills and the

impact that the role of the play-partner can have on the play experiences of people with PMLD. Before participating in this study none of the staff participants had received any training on supporting play for people with PMLD. In implementing the Musical Play Framework, staff felt uncomfortable with the approach as it differed from their typical practices. Since the role of the adult is paramount to the play experiences of people with PMLD access to training in this area should be available to develop staff practices. Furthermore, the value of these skills should be recognised and celebrated within class teams and school cultures.

Access to play and playfulness

The value of access to play and sharing in playfulness has been evidenced throughout Phase 2 of the study. The impact of having purposeful and specific opportunities to play on participants with PMLD, individually and in their relationships with others, was highlighted. Facilitating opportunities for play, through the Musical Play framework, enabled people with PMLD to access meaningful and engaging activities, and experience feelings of playfulness. Positive feelings, such as those potentially expressed and experienced during the Musical Play sessions are fundamental to well-being.

Access to play, and opportunities for playfulness, further enhanced relationships between staff and people with PMLD. These shared moments of 'being together' through, and in play, enabled staff to create positive memories with individuals with PMLD, revealing the personalities and personhood of individuals with PMLD to supporting staff. These experiences can impact staff-student relationships beyond the play activity, and may enhance staff-student interactions, relationships and wellbeing.

Since timetables and resources are increasingly stretched, opportunities for play may be deprioritised, in favour of target-driven, age-appropriate learning. However, findings from this study suggested that the inclusion of play and opportunities for playfulness, through the Musical Play sessions, provided positive and motivating experiences for students and staff. Furthermore, incidental learning opportunities emerged during the sessions, and the capabilities of some participants were realised. Evidence from this study suggests that

prioritising regular access to opportunities for play and playfulness within educational practice is necessary and justified.

Surrounding sound

Findings from both phases of this study indicated that varying elements of music may affect the behaviours and mood of people with PMLD. This research evidenced the capabilities of some people with PMLD to demonstrate their awareness and preferences of music. Since people with PMLD are often unable to choose their auditory environment, it is the responsibility of those supporting them to be alert to the impact that surrounding sounds, such as background music, may have on the behaviours and mood of an individual. A greater awareness of the auditory environments of people with PMLD is necessary. Background music should be purposefully chosen. For example, background music may be used to engender feelings of playfulness, for leisure, or relaxation. Alongside this, knowing the musical preferences of individuals with PMLD, and providing access to these, may enable staff to support the wellbeing and engagement of students.

8.5 Dissemination and development

The following section focuses on the dissemination of the findings of the research to the participants involved in the study. The section then considers the personal development and learning of the researcher.

There is an ethical responsibility for the researcher to share the findings of the research with the participants (Health Research Authority, 2023). Sharing research findings directly with participants acknowledges the value of their contribution to research and builds trust between the participant/s and the researcher/s. The need to share findings with participants may be particularly important when the findings may positively impact the experiences of those involved. Findings from this research were shared with staff participants, parents who acted in the role of proxy (Phase 1), and the contributions of participants with PMLD were also acknowledged.

Staff participants

The findings from Phase 2 of the study were shared with staff participants through a five-minute video created by the researcher. The video highlighted the main findings of the study in an easily accessible, and time-effective format (see <https://youtu.be/YXXGh3l6mhU>). Staff participants were also kept informed regarding further dissemination of the findings at training events and conferences.

Parent/carers of participants with PMLD

Parent/carers of participants with PMLD, who acted in the role of proxy during Phase 1 of the research, were provided with the option to receive a summary of the findings from Phase 1 by providing an email address. Parent/carers who opted to receive a summary of the findings were provided with a summary of the main findings of Phase 1 of the study (see Appendix 12 for a copy of this).

There was no direct contact between parent/carers who gave consent, or acted in the role of consultee to provide consent, for participants with PMLD to take part in Phase 2 of the research. Instead, each setting acted as a gatekeeper between parent/carers and the researcher. Therefore, it was not possible to share a summary of the findings with parent/carers of participants involved in Phase 2 of the study. It would have been useful for the researcher to have established a medium of direct contact, such as an email address, with parent/carers to share a summary of the findings directly.

People with PMLD

Disseminating the findings of a study such as this to people with PMLD in a meaningful way is difficult due to the unique way in which people with PMLD engage with the world. However, to acknowledge the contributions of the participants with PMLD the researcher ensured that all the instruments used within the Musical Play Framework remained in the settings after the end of the period of data collection. Furthermore, the researcher plans to host a celebration for people with PMLD and their families who have contributed to the development of the Musical Play Framework or have been directly involved as participants within the study. It is hoped that

this will be an accessible and meaningful way to share appreciation with the individuals with PMLD who have been fundamental in co-creating the knowledge and findings included within this thesis. Further consideration of methods of dissemination, for people with PMLD, acknowledgment of the contributions that participants with PMLD make to research is needed.

The researcher's development and learning

In conducting this research there have been numerous learning and developmental opportunities for the researcher. The key learning points are explored below.

Firstly, relationships are important in conducting real world research. The imbalance of power and perceived hierarchy between the researcher and participants was highlighted at the beginning of this thesis (see Chapter 4), and the ethical responsibility of shifting this narrative and rebalancing this relationship was fundamental to the way in which this research was planned and conducted. The researcher was known to both settings before beginning the study. It is difficult to determine the full impact of this on the responses of staff participants and their willingness to take part in the study. However, in this instance it seemed that previous knowledge of, and/or relationships between the researcher and the setting/staff enabled a level of trust, shared responsibility, and teamwork to be established in the early stages of collaboration. Clear communication, frequent contact with staff participants, and the regular presence of the researcher within each setting supported the positive development of these relationships. Whilst this was a time heavy commitment from the researcher, it meant that staff participants were supported and felt valued during the data collection stage of the research. Furthermore, it meant that any concerns or obstacles that may have impacted staff participation, and the data collection, could be tackled by the researcher and staff participants.

Through conducting this research, the researcher developed a clearer perspective of the compromises and complexities surrounding the ethics, versus the presence, of people with PMLD in research. This was particularly relevant to this study as participants in Setting 2 were adults with PMLD who do not have the capacity to provide informed consent. To include these participants within the research, ethical approval needed to be obtained at a national level from the Research Ethics Committee (REC), England. Since this process was complicated and

time consuming, it would have been easier, and more efficient to exclude adults with PMLD, who require these additional ethical considerations, from the research. Focusing the research on children, for whom parental consent can be obtained (BERA, 2018), would have resulted in the research requiring ethical approval at university level, instead of national level, and reduced the significant amount of time required for this process. These additional ethical processes and considerations may be limiting the presence of adults with PMLD in research (de Haas et al., 2022). However, the researcher felt it was ethical, responsible, and necessary, to include adults with PMLD within research, and whilst the difficulties of this should not be underestimated, the time and effort involved to enable this within this study was worthwhile.

Furthermore, it may have been beneficial to challenge the normalisation of anonymity in research (BERA, 2018). Including images of the participants with PMLD during the Musical Play sessions may have been useful in evidencing their potential expressions of playfulness and increasing the understanding of these for the reader. Alongside this, including images of the participants may have increased their presence throughout the thesis, and provided a medium of reporting the research findings in a way which may have been accessible to some of the participants with PMLD. Additional understanding and consideration of this is needed, as the assumption of anonymity being best practice, and a necessity of research, may not always be true.

8.6 Recommendations for future research

This study has highlighted many areas for future research that are necessary to better understand and support the life experiences of people with PMLD. Phase 1 of this study emphasised the role that people with PMLD can take as contributors *to* research, rather than participants *of* research. Further research is recommended into the inclusive, creative, and participatory methods in which people with PMLD can provide valuable knowledge on their experiences and preferences, taking the role of active contributor rather than passive participant.

Phase 1 of this research also highlighted the musical preferences of people with PMLD, and the association between music and their emotions. Future research which considers the use of music to support emotion, mood, and well-being for people with PMLD is recommended.

Findings from this research suggested that Musical Play can positively impact relationships. Considering the effect of implementing the Musical Play Framework with parents/carers of people with PMLD is another area of future research interest. The implementation of the Framework by providers of play and leisure activity for people with PMLD (such as hospices, respite, and charity groups) should also be considered. A future longitudinal study, which considers the impact of the intervention over a longer period of implementation would also be beneficial.

Additionally, this research drew attention to the narrative of age-appropriateness for people with PMLD. Further research is recommended to better understand the presence of this narrative in policy and practice and the impact this has on the lives of people with PMLD. Research which considers the attitudes of those supporting people with PMLD; teachers, TAs, and support staff should also be undertaken to better understand the implications of this on people with PMLD. Furthermore, research which provides increased understanding of parental/caregiver perspectives on the subject of age-appropriateness is also needed. Since the life expectancy of the population of people with PMLD is increasing, because of medical advances, improved understanding and awareness of this subject is necessary.

8.6 Conclusion

The purpose of this research was to better understand the impact of the Musical Play Framework on the play experiences of students with PMLD and their supporting staff. The research cautiously adopted, and sought to challenge, the definition of 'music' as described by Small's description of 'Musicking' (1999). It demonstrated the relevance of the term for people with PMLD and challenged the normative conditions that Small (1999) framed his definition of music within. The findings highlighted that, regardless of their 'endowment' or 'gifts' (Small, 1999, 20), people with PMLD can and do 'music'. The research aimed to include people with PMLD as both contributors to, and participants within, the research process. The musical

preferences of people with PMLD were collected and evidenced. This chapter discussed the main findings of the study along with the limitations of the design. The implications of the findings on policy and practice were presented after which some recommendations for further research were made.

Findings from this research highlighted the individual play skills, abilities, and experiences of people with PMLD. The effect of the Musical Play sessions varied across setting, participant, and session. Findings from the study evidenced the use of musical instruments as engaging stimuli for people with PMLD during Musical Play and documented the challenges both students with PMLD and staff encountered during peer-play activities. Additional factors such as participant absences, as well as the environment, positioning of participants, and attitudes and attributes of staff play-partners influenced the findings of this research. Nevertheless, there is evidence to suggest that the Musical Play Framework may be both a useful and usable tool in supporting opportunities for playfulness for people with PMLD and developing the skills and confidence of play-partners to facilitate this.

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APPENDICES

APPENDIX 1 Online Questionnaire

Thank you for taking the time to participate in this study.

By completing this questionnaire, you agree to take part in the study.

Questionnaire

To best collect the views of people with PIMD please complete this questionnaire and listening experience as best you can on their behalf.

Section 1: (3)

1. What is the age of the person with PIMD contributing to this research?

5-10 years

11-16 years

17-25 years

2. What is the ethnicity of the person with PIMD contributing to this research?

3. What is their gender?

- Male
- Female

Section 2: Preferences (4)

Thinking about the communication of the person with PIMD contributing to this research please answer the following questions.

4. *They communicate their mood using actions and sounds?* (These might be big or small)

Strongly Agree - Agree – Don't know- Disagree - Strongly Disagree

5. *How do they communicate their good mood?* (What does this look like in their actions and sounds)

SHORT TEXT BOX ANSWER

Don't know.

6. *How do they communicate their calm mood?* (What does this look like in their actions and sounds)

SHORT TEXT BOX ANSWER

Don't know.

7. *How do they communicate when they are upset?* (What does this look like in their actions and sounds)

SHORT TEXT BOX ANSWER

Don't know.

Musical Preferences (5)

Thinking of the music that the person with PIMD contributing to this research listens to, please answer the following questions as best you can on their behalf.

8. *Music is a big part of their daily life?*

Not at all – Very little- Somewhat- To a Great Extent

9. *When they are in a good mood, the music they like to listen to is?* (**Artist** (e.g., Ed Sheeran), **Genre** (e.g. Pop, Classical), **Type** (e.g. Loud/Fast/Quiet/Upbeat))

SHORT TEXT BOX ANSWER

Don't know.

10. *When they are in a calm mood, the music they like to listen to is?* (**Artist** (e.g., Ed Sheeran), **Genre** (e.g. Pop, Classical), **Type** (e.g. Loud/Fast/Quiet/Upbeat))

SHORT TEXT BOX ANSWER

Don't know.

11. *Listening to music is likely to make them feel?* (Please select all that apply)

Happy	Excited	Calm	Sad
Anxious	Frustrated	Playful Content	Other (please state)

12. *Their all-time favourite music to listen to is...* (This could be a song/piece of music)

SHORT TEXT BOX ANSWER

Don't know.

Section 3: Listening experience (10)

Please listen to the four musical tracks together with the person with PIMD. Each track lasts around one minute.

You can listen to each one as many times as you like. If the person you are listening with is not enjoying the music, please stop, make a note of this, and move on to the next piece of music.

Please answer the following questions as best you can on their behalf.

Track 1:

13. *Please describe how the person with PIMD contributing to this research responded to the music?*

- Positively (please state)

SHORT TEXT BOX ANSWER

- Negatively (please state)

SHORT TEXT BOX ANSWER

- I am unsure how they responded; it was not clear enough for me to describe.
- They did not seem to respond to the music.
- We skipped this track as the person listening was not enjoying the music.

Track 2:

14. Please describe how the person with PIMD contributing to this research responded to the music?

Positively (please state)

SHORT TEXT BOX ANSWER

- Negatively (please state)

SHORT TEXT BOX ANSWER

- I am unsure how they responded; it was not clear enough for me to describe.
- They did not seem to respond to the music.
- We skipped this track as the person listening was not enjoying the music.

Track 3:

15. Please describe how the person with PIMD contributing to this research responded to the music?

- Positively (please state)

SHORT TEXT BOX ANSWER

- Negatively (please state)

SHORT TEXT BOX ANSWER

- I am unsure how they responded, it was not clear enough for me to describe.
- They did not seem to respond to the music.
- We skipped this track as the person listening was not enjoying the music.

Track 4:

16. Please describe how the person with PIMD contributing to this research responded to the music?

- Positively (please state)

SHORT TEXT BOX ANSWER

- Negatively (please state)

SHORT TEXT BOX ANSWER

- I am unsure how they responded, it was not clear enough for me to describe.
- They did not seem to respond to the music.
- We skipped this track as the person listening was not enjoying the music.

17. Does the person with PIMD contributing to this research prefer any of the music listened to?

They preferred Track 1.

They preferred Track 2.

They preferred Track 3.

They preferred Track 4.

They liked more than one: (please state)

They did not enjoy any of the tracks.

I am unsure if they showed preference.

They did not show a preference.

18. Is there anything else about the music tastes of the person with PIMD contributing to this research, which would be good for us to know about (e.g., any relevant things you have noticed, but you haven't been asked about in this questionnaire)?

Thank you for taking the time to complete this consultation questionnaire.

If you would like to receive a summary of the findings, please provide your email address here.

APPENDIX 2 List of suggested changes received during pilot of online exploratory listening tracks

Track 1
I think perhaps adding in a quick little interjection where the tune has its long notes e.g. at 12 or 13 seconds, might work to help keep the energy in the melody.
I would change it by adding a trumpet counter melody.
When the tune repeats could be harmonised with the same melody up a 3rd/5th, or with a similar but simpler melody (build excitement).
The marimba is quite fun by itself but because it's syncopated I think repeating it a few times without the horns would help establish this

Track 2
Maybe dynamics could add more movement, e.g. hairpins
The beat in drum and bass type track 2 maybe too intermittent for others to relate to, again a filler beat might help
You could add a more melodic baseline to enhance the groove, keeping it cool and slinky.
You could even explore taking away certain sounds at certain points and then bringing them back in - or giving particular instruments solos so you can really hear their individual part before bringing everything in again.

Track 3
I think some vocal sounds would enhance it.
though still would be even better with a steady low pitched drum beat
Little melody motif could be extended when the track repeats
just make it go on for longer!
Maybe adding another melodic line using a simple raag scale to go in between the sitar sounds would enhance that feeling of joy.

Track 4
Maybe quieter dynamics would make it more mysterious and rubato might make it even more wandering
I wonder if the high pitched content of track 4 might irritate some people with auditory oversensitivity and it might be lost on others (without linking middle range content).
Would like to hear a harmony to the clarinet line.
Slowing it down gradually would enhance that feeling of getting ready to stop.

APPENDIX 3 Ethical review application and ethical approval letter

Long Title: Exploring the impact of music on the play experiences of children and young people with profound and multiple learning disabilities (PMLD) and their supportive play-partners

Short Title: Musical Play and PMLD

Version: 0.3 03/08/2021

Research reference numbers

IRAS Number	300007
Sponsor reference number	RG_21-071
ISRCTN number	
REC reference number	

This protocol has regard for the HRA guidance

Signature page

The undersigned confirm that the following protocol has been agreed and accepted and that the Chief Investigator agrees to adhere to the signed University of Birmingham's Sponsorship CI declaration.

I agree to ensure that the confidential information contained in this document will not be used for any other purpose other than the evaluation or conduct of the investigation without the prior written consent of the Sponsor.

I also confirm that I will make the findings of the study publicly available through publication or other dissemination tools without any unnecessary delay and that an honest accurate and transparent account of the study will be given; and that any discrepancies from the study as planned in this protocol will be explained.

Chief Investigator:



Signature: Date: 21/06/2021

Name: (please print):.....Dr Aglaia Lila Kossyvakis.....

Sponsor statement:

Where the University of Birmingham takes on the sponsor role for protocol development oversight, the signing of the IRAS form by the sponsor will serve as confirmation of approval of this protocol

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Key study contacts

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Joint-sponsor(s)/co-sponsor(s)

Funder: Economic and Social Research Council 3+1 Doctoral training grant

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[REDACTED]

Study summary

Study Title: Exploring the impact of music on the play experiences of children and young people with profound and multiple learning disabilities and their supportive play-partners

Internal ref. no. (or short title): RG_21-071 Musical Play and PMLD

Study Design: Mixed Methods Design

Study Participants:

Phase 1: Children and young people with PMLD and their parent/guardian.

Phase 2: Children and young people (5-25 years) with PMLD and supporting school staff (i.e. learning support assistants). For more details see Section 5.

Planned Size of recruitment target (if applicable)

Phase 1:

Participants with PMLD Phase 1: n=40-50

Parents/guardians of people with PMLD Phase 1: n=40-50

Phase 2:

Participants with PMLD Phase 2: n= 12-16

Supporting staff participants Phase 2: n= -12-16

Follow up duration (if applicable): **Phase 2:** 3 months.

Planned Study Period:

Phase 1: 4-week online questionnaire

Phase 2: 12 weeks + 3 month follow-up

Research Question/Aim(s):

Phase 1: How do the musical characteristics of pre-recorded music affect the playful behaviours and responses of people with PMLD?

Phase 2:

1. Does using pre-recorded music and musical instruments through the Musical Play intervention effect the play experiences of children and young people with profound and multiple learning disabilities?
2. Does the Musical Play intervention impact on peer awareness and peer-play for children and young people with profound and multiple learning disabilities?
3. What effect does the use of the Musical Play intervention have on staff experiences of facilitating play for children and young people with profound and multiple learning disabilities?

Funding and support in kind

FUNDER(S)	FINANCIAL AND NON FINANCIALSUPPORT GIVEN
Economic and Social Research Council	3+1 Doctoral Training Grant

Role of study sponsor and funder

The ESRC are funding this study as part of the Doctoral Training Programme for Rosie Rushton. The funder has no control over any phase of the study and will not influence in any way the outcomes. The only responsibility we have to the funder is to acknowledge them in any publication (paper, conference) and try our best to stick as close as possible to the research proposal which was funded.

Roles and responsibilities of study management committees/groups and individuals

Patient & Public Involvement Group:

The study will involve end users, people with PMLD and school staff.

It is designed as a two-phase study in order that the Musical Play intervention may be co-designed with the information collected in Phase 1 of the study from individuals with PMLD and their caregivers. It builds on previous design of the Musical Play intervention with Special School Staff (Rushton and Kossyvaki, 2020).

Phase 1: Will include people with PMLD in developing the Musical Play intervention. This consultation phase will aim to gather the views and preferences of people with PMLD which will impact on design of the intervention in Phase 2. The pre-recorded musical content of the Musical Play intervention used in Phase 2 will be influenced by the findings of Phase 1.

Dissemination of the findings will involve the public in the research. Findings will be presented to non-specialist audiences through professional journals, conferences, and training.

Protocol contributors

Contributors to the protocol include: Rosie Rushton, Study Co-ordinator, PhD student

Dr Lila Kossyvaki, Chief Investigator and Lead Supervisor

Dr Emmanouela Terlektsi, Joint Supervisor

The Musical Play intervention was designed, trailed, and refined with staff participants of a previous study (Rushton and Kossyvaki, 2020).

KEY WORDS: PMLD, Music, Play, profound disability, playfulness.

Study flow chart (see Appendix 2)

Study protocol

Exploring the impact of music on the play experiences of children and young people with profound and multiple learning disabilities and their supportive play-partners.

Background

Background: 'Every child has the right to engage in play,' (UNCRC: Article 31, 1989). Play is regarded as fundamental to healthy development and acknowledged for its valuable role as a tool for learning, creativity, and self-expression. However, the play experiences for children and young people (CYP) with profound and multiple learning disabilities (PMLD) are often compromised. With the pressures of increasingly stretched educational timetables, complex care routines and limited staff resources, play opportunities are often neglected within the school day. Further, due to the complex needs of people with PMLD, conventional means of play are often inaccessible and irrelevant. There is currently a lack of research and evidence into play and play interventions for learners with PMLD. This research aims to being to address this deficit. Acknowledging that music is noted to be a highly motivating, engaging, and accessible tool for people with PMLD. This research will explore the impact of using music to facilitate playful experiences for CYP with PMLD and their support staff.

The study: The study will use a two-phase design. To reduce the power imbalance between the researcher and researched, and to include the voices of people with PMLD in the intervention design, Phase 1 will be a consultation phase, in which the views of people with PMLD on musical listening experiences will be collected by

their parent/guardian and relayed to the researcher. The findings from Phase 1 could influence the musical material used in the Musical Play intervention during Phase 2.

Phase 2 will use a mixed method design to collect evidence on the impact of the Musical Play intervention on the play experiences of people with PMLD and supporting school staff. The study will be based in two locations. A primary aged (5-11 years) and college setting (19-25 years) for people with PMLD. Staff will be trained to deliver the Musical Play intervention. A multiple baseline design and video observations will be used to record the impact of the intervention on participants with PMLD. Focus-group interviews will be used to collect attitudinal data from staff participants. This study builds on the positive findings of previous research and the development of the Musical Play intervention. Previous research on this subject: Investigating the impact of Musical Play on play experiences for children with PMLD and their supporting play-partnerships: *British Journal of Special Education* (Rushton & Kossovaki, 2020) and, The role of music within the home-lives of young people with profound and multiple learning disabilities: Parental perspectives (Rushton & Kossovaki, 2021).

Population: Music has been recorded as being highly motivational for children and young people with profound and multiple learning disabilities (PMLD) (Corke, 2012; Ockelford, 2008). Whilst there is not a universally agreed definition of the characteristics of people with PMLD (Nind and Strnadová, 2020), this heterogenous population have a profound intellectual disability often combined with physical disabilities, sensory impairments, and complex medical needs (Doukas et al., 2017). This population may otherwise be described within literature as people with profound intellectual and multiple disabilities (PIMD), profound and multiple intellectual disabilities (PMID), or individuals with complex and/or profound needs.

Rationale

As a result of better healthcare and increased survival rates the population of people with PMLD is increasing yearly. Simultaneously an ever-growing importance on academic attainments dictate the school day, and the current trend within educational settings seems to devalue the importance of play. Marginalised, and undervalued within post-early years educational settings the role of play within school continues to be a contentious issue. Research reveals that the trend of reduced play opportunities in post-primary settings also impacts on children with learning difficulties (Papoudi and Kossovaki, 2018). Meaningful play experiences are known to enhance individual wellbeing and resilience and are fundamental to early stages of learning and development (Ginsburg, 2007). The EQUALS Play Curriculum aims to address issues of supporting play for learners with Severe Learning Difficulties (SLD), however research and resources which address play for learners with PMLD are extremely limited. Alongside this, there is significantly less research into children's musical play, comparatively to other areas of child musical development (Young, 2016); and research into musical play for children with PMLD is further limited. Although musical inclusion and music and disability is currently climbing the agenda for music educators (Fautley and Daubney, 2018) and there is a growing evidence-base of the value of music for people with PMLD (Ockelford, 2008) it seems that music educators do not research play, and play researchers fail to include music.

To improve the well-being and quality of life for learners with PMLD we must equip teaching staff with the skills needed to facilitate access to meaningful and engaging play opportunities. Outcomes of this research may reframe perceptions of, and access to, play for learners with PMLD. Considering also whether the universality of music can transcend barriers of age-appropriation and language and enhance relationships between peers and staff. The outcomes of this study will inform the practice of all those working with, or supporting, individuals with PMLD of all ages, and has the potential to be relevant to practice and influence policies on a global scale.

Theoretical framework

The study is conducted using a pragmatic philosophy and method to research. In that, the study considers the practicalities of how to conduct research to best answer the research questions. It also addresses why the

research should be designed and conducted this way (Morgan, 2014). The practicalities of how best to answer these questions in real-world research is fundamental to the design of the study. Whilst researching in a real-world setting may compromise the external validity of a study (Harackiewicz and Barron, 2004) it is likely to increase its ecological validity. When developing and investigating the effects of an intervention, such as Musical Play, which is designed to be delivered in real-world settings, the ecological validity of the research should be given high priority.

The researcher adopts the biopsychosocial model of disability when approaching the study. This model views disability as a combination of the state of an individual's physical and mental health, and the impact of the society, social experiences, and opportunities, in which they live (Bath et al., 2014). The biopsychosocial model of disability acknowledges that disabilities are caused by biological or physical impairments which require medical treatment. This model recognises the complex medical needs of people with PMLD, which often require ongoing medical treatment, from a wide range of specialists to support quality of life, and in some instances sustain life (Rees, 2017). It is necessary to acknowledge these complex health needs, to ensure vital services and resources are available to this population (Nind and Strnadová, 2020). Still, this philosophical viewpoint also recognises the compounding disabling barriers present within society.

This study was undertaken from the perspective that people with PMLD are disabled due to their profound intellectual impairment, often combined with complex medical needs and/or sensory impairments (Mansell, 2010; Doukas et al., 2017). They are also people with the same rights as all humans, to live a high-quality life, to experience, participate, and engage with society. People with PMLD are 'playful, resilient and loved' (Vorhaus, 2014), they are active in developing interactions and relationships (Watson, 2020), and are unique individuals with preferences and interests (Rushton and Kossyvak, 2021).

Research question/aims

The research questions are the following:

Phase 1:

How do the musical characteristics of pre-recorded music affect the playful behaviours and responses of people with PMLD?

Phase 2:

1. What is the effect of Musical Play on the play-activity of children and young people with PMLD?
2. Does Musical Play impact on peer awareness and peer-play for children and young people with PMLD?
3. What effect does the use of Musical Play have on staff experiences of facilitating play for children and young people with PMLD?

Objectives

To better understand the effect of using pre-recorded music and musical instruments through the Musical Play intervention on the play experiences of children and young people with profound and multiple learning disabilities.

To better understand the effect of the Musical Play intervention, have on staff experiences of facilitating play for children and young people with profound and multiple learning disabilities.

Outcome

Further understanding of the role of music in the play experiences of children and young people with PMLD.

Understanding of staff attitudes and experiences towards play with children and young people with PMLD.

Support staff in their role to create play experiences.

Study design and methods of data collection and data analysis

Phase 1: Online survey and listening experience

Data collected from a self-selected non-probability convenience sample; generated from a targeted online population. Primarily close-ended questions.

Data collection period: Four-weeks.

Number of expected participants: 40-50 children and young people with PMLD

40-50 parents/guardians of child/young person with PMLD

Data analysis: Quantitative data visually inspected by Rosie Rushton.

Qualitative data abductive thematic analysis Rosie Rushton.

Online survey provides anonymity for the participant. No identifiable data will be requested.

Data will be stored on a password protected device.

The online questionnaire and listening experience is convenient, it has minimal disruption on participants, which is particularly relevant when working with people with PMLD and their families. The online self-select sampling means that a wide range of participants can be included in the consultation phase of the study and as a result contribute to the design of the Musical Play intervention. Potential participants will be reached using specific targeting of social platforms, pre-established networks, and gatekeepers (e.g., PMLD Link, SLD Forum). The sample size will be 40-50 participants with PMLD. Parents/primary carers will be recruited as co-researchers to report on the behavioural/mood responses of their CYP when listening to a range of music with distinct musical features. Parents/primary carers of CYP and CYP with PMLD will be invited to take part in an online questionnaire and listening experience. This experience will last no longer than 30 minutes.

Phase 2: Intervention mixed-methods

Purposive sampling- contact will be made with members of Senior Leadership at potential specialist educational settings in the West Midlands. The researcher has established previous relationships with a number of these settings as an external music facilitator. If interest is shown, contact will be made with relevant class staff supporting CYP with PMLD within the setting (staff participants). If interest is shown, participant information sheets will be given to all staff working within the class/setting. Participant information sheets will also be sent to all parents/primary carers of CYP who have PMLD within the class/setting (student participants).

Data collection period: Intervention period: 12 weeks (or one school term)

Follow-up focus group: 3 months after the end of the intervention period.

Number of expected participants: Staff participants (n= 16)

Adults working with people with PMLD with the capacity to give informed consent. The number of staff participants will be dependent on the staffing structures of the settings, and the day/times that the Musical Play intervention is delivered. Staff participants working in two educational settings, with people with PMLD, will be trained to deliver the Musical Play sessions.

Staff will deliver the Musical Play intervention for up to 30 minutes per session, twice-a-week for a period of 12-weeks (or one academic term). Sessions will include pre-recorded music, musical instruments, and vocal play. Staff will use the Principles of Musical Play and The Role of Adults in Play guidelines to support their practice.

Staff participants will be videoed in each session. Staff will be asked to complete a fidelity checklist after each session.

Staff participants will take part in no more than 3 focus-group interviews each lasting no longer than 60 minutes which will take place in their work setting to minimise disruption. The focus-group interviews will be pre-intervention, postintervention and follow up (approximately 3 months after the intervention period). These focus-

groups will be led by Rosie Rushton. Data from the focus-groups will be transcribed and analysed using abductive thematic analysis and NVivo software.

Participants with PMLD (n=16):

Children (under 16 yrs.) and young people (16-25 yrs.) without the mental capacity to give informed consent. Participants across two educational settings with profound and multiple learning disabilities (PMLD)

The intervention will use a multiple-baseline design.

A baseline will be generated from a minimum of five data points, or until there is a sufficiently consistent pattern of behaviours or responses recorded to facilitate a predictability of future responses by the child/YP.

Video recordings of a typically occurring play activity- two children/YP and one member of setting staff will be analysed, and the frequency of behaviours/responses displayed by the child/YP will be quantified.

Multiple entry points mean the number of times student participants take part in the intervention will vary. Participants with PMLD will take part in the intervention for up to 30 minutes per session, twice-a-week for a period of 12-weeks (or one academic term).

Sessions will include pre-recorded music, musical instruments, and vocal play.

Each participant with PMLD will take part in the intervention for a minimum of six-weeks.

Participants with PMLD will be video recorded.

Video recording is used to capture the subtle changes in expression, movement, posture, and vocalisations of the participants. For participants with PMLD these subtle changes and non-verbal cues are essential to capture to evidence the potential impact of the Musical Play sessions. For participants who do not use formalised language these behavioural responses are fundamental methods of communication and contributions to research.

Video data will be analysed, and the frequency of behaviours/responses displayed by the student participants will be quantified by Rosie Rushton.

Study setting

Phase 1: data will be collected using an online secure survey platform such as Qualtrics.

Phase 2: data will be collected at two educational sites in the West Midlands, including Birmingham and Sandwell Local Authorities.

The study co-ordinator has existing connections with several special educational sites in the West Midlands due to her role working as a visiting music specialist.

Participant recruitment

Eligibility Criteria

- Child or young adult identified as having profound and multiple learning disabilities. A profound intellectual disability combined with a physical disability, sensory impairment, or complex medical needs. (Phase 1 & 2)
- Parent/guardian of child/young person with PMLD (Phase 1)
- Supporting staff of children and young people with PMLD. (Phase 2)

Inclusion criteria

Phase 1:

Parent/Guardian:

- Parent or guardian with a child with PMLD aged between 5 and 25 years old, who is willing to participate in the study, and has provided written consent for participation.

Participants with PMLD:

- Child or young person aged 5-25 years with a profound intellectual impairment combined with physical disabilities and/or sensory impairments.
- Child or young person whose parent/guardian/consultee has provided written consent.

Phase 2:

Participants with PMLD:

- Child or young person aged 5-25 years with a profound intellectual impairment combined with physical disabilities and/or sensory impairments.
- Child or young person who has regular attendance (> 70%) at the research sites based on their records from the previous term.
- Child or young person whose parent/guardian/consultee has provided written consent.

Staff Participants:

- Staff who work regularly with participants with PMLD (at least 3 days per week).
- Staff who provide written informed consent.
- Staff who work regularly at the research sites (at least 3 days per week).

Exclusion criteria

- Child or young person with PMLD who has irregular attendance at the setting (less than 70% attendance) based on their records from the previous term.
- Child/young person with PMLD who does not engage in musical activities due to religious, cultural, or personal reasons.
- Child/young person with PMLD for whom musical activity is known to trigger increased seizure activity or other adverse physical responses (such as tachycardia).
- Child/young person with severe to mild or no learning disabilities.
- Child/young person with profound physical disabilities but not profound intellectual disabilities.
- Child/young person who does not attend one of the research sites.
- Staff participants who do not work with someone with profound and multiple learning disabilities at least 3 days per week.
- Staff participants who do not work at one of the research sites at least 3 days per week.

Recruitment target

Phase 1: Self-selected non-probability convenience sample from a targeted population.

n= 40-50 parents/primary caregivers and n=40-50 children and young people with PMLD

Phase 2: Purposive sampling

n= 6-8 children with PMLD n=6-8 young people with PMLD n=12-16 staff participants

Participants from Phase 1 and 2 will be from different samples.

There is a small possibility that some participants contributing to Phase 1 of the study will be participants in the Phase 2 settings however this should not impact the results.

Size of recruitment target

The sampling methods described above will be used to include people with profound and multiple learning disabilities and those supporting them. Due to the time-heavy mixed-method design of the research, which includes training, intervention and focus-group interviews the sample size is small. This sample size is typical when working with the population of people with PMLD, who account for around 0.1% of the UK population. The sample size is reflective of the limited capacity of a doctoral researcher.

Recruitment technique

Phase 1: Self-selected non-probability convenience sample from a targeted population.

n= 40-50 parents/primary caregivers and n=40-50 children and young people with PMLD.

Links to the participant information sheet and the online questionnaire will be shared with potential participants via:

- Pre-established social media networks, for parents/carers of CYP with PMLD.
- Gatekeepers such as PMLD Link, PAMIS, Mencap.
- Specialist school/community organisations working with families.

These individuals/organisations will share the link to the online questionnaire with potential participants. Here the participant information sheet and consent form will be available.

Phase 2: Purposive sampling

Contact will be made with members of Senior Leadership at potential specialist educational settings in the West Midlands. The researcher has established previous relationships with a number of these settings as an external music facilitator.

If interest is shown, contact will be made with relevant class staff supporting CYP with PMLD within the setting. This initial approach will be made by school leaders/class teachers. If interest is shown, paper copies of participant information sheets will be given to all staff working within the class/setting.

Paper copies of the participant information sheets will be sent to all parents/guardians/consultees of CYP who have PMLD within the class/setting through school leaders/class teachers.

Potential participants will have the opportunity to contact the researcher if they have any questions regarding involvement in the study. If participants have no further questions, they will complete and return the consent forms to each educational setting, these will be stored securely with the receptionist.

Due to the time-heavy mixed-method design of the research, which includes training, intervention and focus-group interviews the sample size is small.

Recruitment

Phase 1: Questionnaire

Links to the participant information sheet and the online questionnaire will be shared with potential participants via:

- Pre-established social media networks, for parents/carers of CYP with PMLD.
- Gatekeepers such as PMLD Link, PAMIS, Mencap.
- Specialist school/community organisations working with families with children/young people with PMLD.
- University of Birmingham SPMLD Masters programme

Phase 2: Intervention

Step 1: Contact will be made with members of Senior Leadership at potential specialist educational settings in the West Midlands. The researcher has established previous relationships with a number of these settings as an external music facilitator.

Step 2: If interest is shown, contact will be made with relevant class staff supporting CYP with PMLD within the setting.

Step 3: If interest is shown, participant information sheets will be given to all staff working within the class/setting. Participant information sheets will be sent to all parents/guardians/consultees of CYP who have PMLD within the class/setting.

Participant identification

Phase 1: Parent/guardian of the child/young person will review their suitability for participation in the study. No identifiable personal information will be required.

Phase 2: School staff who have access to the personal information of the participants with PMLD will review their suitability for participation in the study.

No participant or setting from either phase of the study will be identifiable in any report or publication produced as a result of the study. Only the study co-ordinator will have access to this information.

Consent

Phase 1: Consultation

Before starting the online questionnaire parents/guardians will be shown an electronic copy of the information sheet explaining the purpose of the study and what will happen to their data. This will also include contact details of the lead researcher, and the chief officer for the study. Participants can use these details to ask the research team any questions they have prior to completing the questionnaire. Electronic written consent will then be obtained from the participants before beginning the online questionnaire and listening experience. There will also be a short video explanation and demonstration of the listening experience available for participants to watch prior to taking part.

The questionnaire and listening experience will be available online for a period of at least four weeks for potential participants to decide whether to take part.

Withdrawal: Participants will be informed of their right to withdraw or skip any of the questions on the online questionnaire and listening experience at any point during answering. Due to the anonymity of the online questionnaire, retrieval and withdrawal of individual data will be limited. Participants who provided their email address to receive a summary of the study findings will do this after the end of the questionnaire, these will be collected and stored separately to the participant data.

Phase 2: Intervention

The Headteacher, Senior Leadership Team in each setting will be made aware of the study and written support will be obtained.

Staff participants: Participants will be given a paper copy of the information sheet explaining the purpose of the study and what will happen to their data. This will also include contact details of the lead researcher, and the chief officer for the study. They can take this information away to ensure they have time to consider the information (approximately a week), during this time they can ask the research team any questions they have prior to returning the consent form (using the contact details provided on the form).

Potential participants will have the opportunity to contact the researcher if they have any questions regarding involvement in the study. If participants have no further questions, they will complete and return the consent forms to each educational setting, these will be stored securely with the receptionist.

A clear written explanation of the use of video footage will be provided to all staff; staff will be assured of their anonymity within the written report.

Participants will provide their voluntary written consent to participate before beginning the study. Participants will provide their voluntary written consent to be filmed before beginning the study.

Participants with PMLD do not have the capacity to provide informed consent due to their profound intellectual impairment (Mental Health Act, 2004).

Child participants with PMLD: Participant information and consent forms will be sent to parents of children with PMLD. A clear written explanation of the purpose of the research and the intervention will be provided for parent/guardians. This will also include contact details of the lead researcher, and the chief officer for the study. Parents/guardians can take this information away to ensure they have time to consider the information (approximately a week), during this time they can ask the research team any questions they have prior to returning the consent form (using the contact details provided on the form). Parent/guardians will need to acknowledge they have received this information and provide their voluntary written consent for their child to participate in the study.

Participants who show signs of unhappiness/distress during an intervention session will be withdrawn from the session immediately. Participants who show signs of unhappiness/distress as a result of involvement within the study on more than one occasion will be withdrawn from the study.

Data collected from participants who are withdrawn from the intervention, on or before 4-weeks of intervention sessions, due to distress will be destroyed. If a participant is withdrawn from the intervention after this point previously collected data may still be used within the study.

Whenever a child participant is able, ongoing consent will be sought before beginning each intervention session. The process of ongoing consent is described below.

Adult participants with PMLD (16+ years): Participation and consent forms will be sent to the consultee. A clear written explanation of the purpose of the research and the intervention will be provided for the consultee. This will also include contact details of the lead researcher, and the chief officer for the study. Consultees can take this information away to ensure they have time to consider the information (approximately a week), during this time they can ask the research team any questions they have prior to returning the consent form (using the contact details provided on the form). Consultees will need to acknowledge they have received this information and provide their voluntary written consent for the participant to be involved in the study. It is likely that consultees will be the parent or primary care-giver of the participant with PMLD.

Participants who show signs of unhappiness/distress during an intervention session will be withdrawn from the session immediately. Participants who show signs of unhappiness/distress as a result of involvement within the study on more than one occasion will be withdrawn from the study.

Data collected from participants who are withdrawn from the intervention, on or before 4-weeks of intervention sessions, due to distress will be destroyed. If a participant is withdrawn from the intervention after this point previously collected data may still be used within the study.

Whenever the participant is able, ongoing consent will be sought before beginning each intervention session. The process of ongoing consent is described below.

Ongoing consent: is the process in which the researcher and/or supporting staff, and/or the parent, guardian or consultee continually assess participants' behaviours and responses in relation to the task or situation (Cameron and Murphy, 2007). Changes in behaviours or responses can be recognised as a participants' expression to withdraw from the study. Those observing these behaviours can then advocate for the participant to be withdrawn from the study where they may not have the ability to explicitly do so themselves. Ongoing consent is used to preserve participants rights to withdraw from a study, and for participants to have an active choice to remain involved in the research process (Bourke and Loveridge, 2014). It is important therefore that the researcher and those involved in implementing the Musical Play sessions prioritise the participants' right to withdraw and remain alert to this being expressed through changes in participant body language, disposition, or behaviours (Bourke and Loveridge, 2014). The process of ongoing consent is outlined in the participant information letters.

Paper copies of the Participant Information Sheet and consent form will be used. Potential participants will have the opportunity to contact the researcher if they have any questions regarding involvement in the study. An email contact is provided on the Participant Information Sheet. At each stage of deciding whether to take part in the research potential participants will be given a period of no less than seven days. If participants have no further questions, they will complete and return the consent forms to each educational setting, these will be stored securely with the receptionist.

Withdrawal:

Phase 1: Participants will be informed of their right to withdraw or skip any of the questions on the online questionnaire and listening experience at any point during answering. Due to the anonymity of the online questionnaire, retrieval and withdrawal of individual data will be limited. Therefore, once submitted it will only be possible to identify and withdraw data for participants who provided their email address to receive a summary of the study findings.

Phase 2: Participants will be informed of their right to withdraw from the study. Staff participants can withdraw from the study at any point until the final follow-up focus group; 3 months after the end of intervention period. After which point it will not be possible to withdraw the data.

Parents/guardians and consultees can withdraw their child/young person with PMLD from the study at any point until the data analysis starts; 3 months after the end of the intervention period. After which point it will not be possible to withdraw the data.

Safety reporting

It is not anticipated that there will be any adverse events or reactions to the research in both Phases. However, in the unlikely event that an adverse event or reaction takes place in Phase 2 of the study the main researcher (Rosie Rushton) will report any illegal or harmful behaviour in accordance with the procedures followed by the appropriate Local Authority Safeguarding Children Board using their Multi-Agency Safeguarding Hub. The researcher will also inform the Chief Investigator and sponsor at the University of Birmingham.

Ethical and regulatory considerations

Phase 1

Ethical considerations for Phase 1 of the study, the online survey and listening experience included two groups, parents, and caregivers of people with PMLD and individuals with PMLD. Parents/caregivers will be provided with

a participant information sheet which included a description of the possible risks of taking part in the study, a privacy statement, and an indication of the time commitment of the listening experience. Consent for participants with PMLD will be obtained by proxy, in that their parent/primary caregiver will give consent for them to be involved in the study. Whilst this poses some ethical issues, parental consent is an established means in which children (under the age of 16 years) can be included in research (BERA, 2018). Since parents/caregivers are likely to be responsible for the auditory and musical home environment of people with PMLD (Rushton and Kossyvaki, 2021) it was felt that participation in the listening experience was unlikely to cause any harm. Further, to avoid any potential psychological harm parents/caregivers will be informed of their rights to skip any question or musical stimuli, particularly if their child or young person appeared distressed by the musical stimuli; or leave the listening experience at any point. After this all participants will be required to give informed consent before proceeding with the online survey and listening experience.

To ensure participant confidentiality no identifiable information will be requested in the survey. Any identifiable information participants provided within the data which could result in a breach of confidentiality will be anonymised (UK Data Service, n.d). Participants will be given the option to have access to a summary of the findings after the end of the study. To disseminate the findings participants will be requested to provide their email address, these will be stored according to the UK Data Protection Act (1998) and the General Data Protection Regulations (2018) and in a separate file to the survey results.

Phase 2

Ethical considerations for Phase 2 of the study involves three groups of participants; vulnerable children with PMLD, under the age of 16, for whom parental consent can be sought (BERA, 2018), vulnerable adults (16+ years) with PMLD who do not have the capacity to consent (Mental Capacity Act, 2005) and teaching staff, adults with the capacity to consent.

Consent

Voluntary informed consent will be sought from supporting school staff through written consent forms. Gaining freely informed consent requires potential participants to have sufficient information about the research, adequate time to make an informed decision and the opportunity to ask further questions, all without coercion or pressure (UKRI, n.d). An ongoing right to withdraw from the study will also be highlighted to school staff participants.

Ongoing consent

Due to the profound intellectual disability of people with PMLD it was felt that gaining informed consent (Mental Capacity Act, 2005) from the participants with PMLD was not possible. Relaying abstract concepts of the Musical Play sessions would have been a tokenistic process. Instead, ongoing consent was sought throughout the study. Ongoing consent is the process in which the researcher and/or supporting staff, and/or the parent, guardian or consultee continually assess participants' behaviours and responses in relation to the task or situation (Cameron and Murphy, 2007). Changes in behaviours or responses can be recognised as a participants' expression to withdraw from the study. Those observing these behaviours can then advocate for the participant to be withdrawn from the study where they may not have the ability to explicitly do so themselves. Ongoing consent is used to preserve participants rights to withdraw from a study, and for participants to have an active choice to remain involved in the research process (Bourke and Loveridge, 2014). It is important therefore that the researcher and those involved in implementing the Musical Play sessions prioritise the participants' right to withdraw and remain alert to this being expressed through changes in participant body language, disposition, or behaviours (Bourke and Loveridge, 2014). The process of ongoing consent is outlined in the participant information letters.

Participants with PMLD may show signs of unhappiness, distress, or other behaviours which are not typical for the individual, because of the disruption to routine experienced from involvement within the sessions, or because of the session content. If these behaviours were to occur during an intervention session participants would be withdrawn from the session immediately. Participants with PMLD who showed signs of unhappiness/distress

because of involvement within the study on more than one occasion would be withdrawn from the study. As highlighted within the process of ongoing consent, withdrawal from the study may be suggested by the researcher, supporting school staff, parent, guardian, or consultee. Participants who are not at the point of arousal or who were asleep, where ongoing consent cannot be obtained, will not attend the Musical Play session.

Video data collection

Collecting, storing, and transferring video data of participants poses ethical dilemmas surrounding participant confidentiality, participant rights, and misuse of the video footage (Jewitt, 2012). All participants will be given a video consent statement within the participant information and consent forms. Video data collected in both educational settings will be securely stored on-site. Video data transferred from the site for analysis and coding will use an encrypted, password protected memory stick. Videos will be stored separately to any participant information data. No visual data will be used in the reporting of the study.

Collecting video data allows participants with PMLD to be active contributors to the research. The behaviours, responses, and vocalisations of participants with PMLD are all forms of communication, these are often subtle and idiosyncratic. Using video recording allows the researcher to capture these subtle changes in behaviour, giving the participants an active and dignified voice within research.

Storage and transfer of video recordings:

Videos will be recorded using a password protected device, such as a camera or iPad. Recording equipment will be securely stored at each site, and recordings will be securely stored on the site servers. Once transferred to the server the recordings will be deleted from the device in accordance with each sites data protection policy.

The researcher will move the recordings from site servers to the University of Birmingham Data Store BEAR and delete the recordings from the site server at regular intervals throughout the intervention period.

The project will establish a system for protecting data while it is being processed, including use of passwords and safe back-up hardware.

Video footage will be stored on the BEAR Research data store at the University of Birmingham. Lila Kosyvakaki and Rosie Rushton will have access to this store. A sample of videos will be securely shared, in line with the University of Birmingham policy, using One Drive for secure data sharing with the fidelity checker. Data will be securely shared. This will allow for the fidelity of the intervention to be checked and establish inter-rater reliability. All video footage will be deleted once it has been analysed and coded by the researcher.

Assessment and management of risk

Participants with PMLD: It is predicted that there will be minimal detrimental effects to participants with PMLD involved in the study. However, participants with PMLD may show signs of unhappiness/distress because of the disruption to routine experienced from involvement within the sessions. If this occurs during an intervention session participants will be withdrawn from the session immediately. Participants with PMLD who show signs of unhappiness/distress because of involvement within the study on more than one occasion will be withdrawn from the study. Withdrawal from the study may be suggested by the researcher, parent/guardian, or supporting school staff.

Staff Participant risks: Intrusion, there may be some psychological effects on staff participating in this study. Staff may feel pressure from the additional time required to partake in the study, training, and focus-group interviews. This will be reduced by considerate timings of the researcher, for example focus-groups will be held at the most convenient time for participants. Staff may feel pressured into giving 'the right' answer during the focus-group

interviews. The researcher will work to promote an inclusive and supportive environment for staff participants. Staff will be supported throughout the intervention period by the researcher. Staff will be encouraged to have regular email contact with the researcher. The researcher will regularly visit the settings during the period of the Musical Play intervention to answer any questions or concerns that staff participants may have. Staff will be reminded of their right to withdraw from the study at the start of each focus-group interview, and at regular intervals during the intervention period.

Safeguarding: The researcher will have an enhanced DBS and be familiar with the settings safeguarding procedures. Any illegal or harmful behaviour will be reported in accordance to the procedures followed by the appropriate Local Authority Safeguarding Children Board using their Multi-Agency Safeguarding Hub. The researcher will also inform the Chief Investigator and sponsor at the University of Birmingham.

A risk assessment for the researcher to mitigate harm has also been completed.

Research Ethics Committee (REC) and other Regulatory review & reports

Before the start of the study, a favourable opinion will be sought from the REC for the study protocol, informed consent forms and other relevant documents.

Regulatory Review & Compliance

Before the researcher can begin to recruit participants for the study, the Principal Investigator or designee will ensure that appropriate approvals from participating organisations are in place.

For any amendment to the study, the Chief Investigator or designee, in agreement with the sponsor will submit information to the appropriate body for them to issue approval for the amendment. The Chief Investigator or designee (Rosie Rushton) will work with sites, and site staff, so they can put the necessary arrangements in place to implement the amendment to confirm their support for the study as amended.

Amendments

It is not anticipated that there will be any significant amendments to the project as described in this protocol. However, if there will be a need for amendments because of the first phase, personal circumstance, or external circumstances, such as the Covid-19 pandemic, these will first be agreed with both supervisors, Dr Lila Kossyvakis and Dr Maria Emmanouela Terlektsi.

The study co-ordinator, Rosie Rushton, will then submit an amendments application to both the University of Birmingham and through IRAS.

Peer review

This study is funded by the ESRC 1+3 scholarship and as a result has been blind peer-reviewed following the ESRC standards.

Patient & Public Involvement

The study will involve end users, people with PMLD and school staff.

Phase 1: Will include people with PMLD in developing the Musical Play intervention. This consultation phase will aim to gather the views and preferences of people with PMLD which will impact on design of the intervention in

Phase 2. The pre-recorded musical content of the Musical Play intervention used in Phase 2 will be influenced by the findings of Phase 1.

Dissemination of the findings will involve the public in the research. Findings will be presented to non-specialist audiences through professional journals, conferences, and training.

Protocol compliance

Accidental protocol deviations can happen at any time. They must be adequately documented on the relevant forms and reported to the Chief Investigator and Sponsor immediately.

Deviations from the protocol which are found to frequently recur are not acceptable, will require immediate action and could potentially be classified as a serious breach.

Protocol compliance, and the quality of the study will be monitored through monthly meetings with the lead supervisor, bi-monthly meetings with both supervisors and termly meetings with the external adviser to ensure the protocol outline here is being followed.

Data protection and participant confidentiality

All electronic data will be stored on the University of Birmingham Research Data Store.

Paper copies of the consent forms will be securely stored on site. These will then be securely transferred and stored using a secure locked file cabinet at the end of the intervention period. Participant consent forms will be stored for 10 years in line with the University of Birmingham policies.

All investigators and study site staff must comply with the requirements of the Data Protection Act 1998 with regards to the collection, storage, processing, and disclosure of personal information and will uphold the Act's core principles.

Secure maintenance of the data and the linking code in separate locations using encrypted digital files within password protected folders will be used to store all data.

An encrypted audio recording will be used to record data from the focus group interviews. The recordings will be transferred securely from the recording device to the University of Birmingham secure server. Once transferred to the Research Data store they will be deleted from the device.

The recordings will be transcribed by Rosie Rushton, the transcriptions will be stripped of identifiable data. Once transcribed the audio recordings will be deleted.

Phase 1:

In collecting the online data complete anonymity is not guaranteed, although participants will not be asked to provide their name, IP addresses could be used to identify the individual.

Participation online will be treated as 'confidential.' The researcher will understand the policies on data collection using third-party data collection site Qualtrics and will be aware of how the information may be stored and collated.

To ensure participants are aware of this the following informative statement will be included at the beginning of the online questionnaire: 'We believe there are no known risks associated with this research study; however, as with any online related activity the risk of a breach is always a possibility. To the best of our ability answers within this study will remain confidential.'

All participants will be anonymised within any written report using pseudonym names.

Phase 2: All participants will be given a pseudonym name.

Identifying features of the student participants will be removed from the data during the coding process. Focus-group interviews will not be anonymous as the participants will be known by the researcher. As soon as the data is transcribed all identifying features will be removed and data will be given a pseudonym. If participants mention any other people during the interview e.g., colleagues/student participants then this information will also be stripped out if it would render anyone identifiable. Participants of the focus-group interviews will be encouraged to keep the information from the discussions confidential.

Storage:

Data will be organised depending on type; survey, focus-group, video. Data will be organised with a good-structured and well-organised data files.

Phase 1 data: Each survey will be stored with a unique identifier. Pseudonyms will be used to anonymise any personal identifying information. Data extracted from the survey will be stored in clearly labelled and well organised files. Copies of the data will be stored using University of Birmingham BEAR and using a password protected external drive (One Drive, provided by University of Birmingham).

Phase 2 data:

Focus group transcripts: Qualitative data will be stored with a unique identifier. Transcripts will have a document header with interview details including date, place, duration, and interviewee details. Detailed data descriptions will be created alongside the raw data, this will include non-verbal descriptions of the focus group settings. Headings will be used to indicate the question/answer sequence or turn-taking in a conversation. Pseudonyms will be used to anonymise any personal identifying information. All pages will be numbered.

Video footage: Participants will be given a unique identifier. Video footage will be stored with this identifier, date, time, and duration. Quantitative data generated from the video footage will be stored with this identifier. Clear descriptions of the key information regarding the video footage, such as participant arousal level, positioning of camera etc. when generating data from the video footage will also be included.

Personal data may be securely stored for up to 3 years in line with the University of Birmingham GDPR Policy. Copies of the data will be stored using University of Birmingham BEAR and using a password protected external drive, provided by University of Birmingham, One Drive.

Anonymised data will be stored for 10 years in line with the University of Birmingham policies.

Consent forms will also be stored for 10 years in line with the University of Birmingham policies.

Indemnity

The University of Birmingham have in force a Public Liability Policy and/or Clinical Trials policy which provides cover for claims for “negligent harm” and the activities here are included within that coverage.

End of study and archiving

The end of the study will be 31st August 2023. This is the end of the minimum period of Doctoral study for Rosie Rushton.

The end of the data collection period will fall no longer than 9 months after the start of data collection.

Data will be stored for 10 years. This is in accordance with the University of Birmingham’s policy on academic integrity.

Access to the final study dataset

The study co-ordinator Rosie Rushton will have access to the full data set. If necessary, the Chief Investigator Dr Lila Kossyvaki and supervisor Dr Maria Emmanouela Terlektsi will also have access to the full data set.

It is not envisaged that the data set will be used for secondary analysis.

Dissemination policy

Dissemination policy

Copyright is an intellectual property right assigned automatically to the creator. Rosie Rushton will own the copyright and IPR of any new data generated from this study.

Reporting results to participants:

Phase 1: Parents/guardians will have the option to provide their email address at the end of the online questioning if they wish to be informed of the study results. Participants who provide this information will be informed of the study results through a short, written report no later 12 months after their participation in the study.

Phase 2: Staff participants will be informed of the study results through a short, written report, sent to them electronically and available in print within their work setting. A short video presentation will also be available to present the findings in an accessible format. Results will be shared with participants no later than 18 months after the end of their participation in the study. Parents/guardians will be informed of the study results through a short, written report available to them online or a printed copy on request from the school/college. A short video presentation will also be available to present the findings in an accessible format. Results will be shared with participants no later than 18 months after the end of their participation in the study.

Acknowledgements: The ESRC needs to be acknowledged as the funding body within any publications produced as a result of this study.

The Final Study Report will be the Doctoral thesis submission of Rosie Rushton. Before the thesis is submitted there are plans for a number of journal and conference papers to be submitted for publication presenting different elements of the study.

Authorship eligibility guidelines and any intended use of professional writers

The Final Study Report will be the Doctoral thesis submission of Rosie Rushton. All other publications resulting from this study (journal and conference papers) will be authored by Rosie Rushton. There will be intellectual outputs for which her two supervisors, Drs Lila Kossyvakis and Emmanouela Terlektsi and/or the academic advisor, Dr Sara Curran, will be part of the authorship team. However, for all immediate outputs resulting from the study Rosie Rushton should be the first author.

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Appendices

Appendix 1- Required documentation

- Participant information sheets Phase 1
- Participant consent forms Phase 1
- Recruitment materials Phase 1
- Participant information sheets Phase 2
- Participant consent forms Phase 2
- Consultee information sheet and consent form
- Focus group interview schedule
- Outline of Musical Play Principles and Framework
- Summary CV of the Chief Investigator
- Summary CV of study co-ordinator

Appendix 2 – Schedule of Procedures

Appendix 3 – Amendment History

Amendment No.	Protocol version no.	Date issued	Author(s) of changes	Details of changes made
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List details of all protocol amendments here whenever a new version of the protocol is produced.

Protocol amendments must be submitted to the Sponsor for approval prior to submission to the REC.

APPENDIX 4 Musical Play Framework: General Principles of Musical Play

PRINCIPLE	DEFINITION	EXAMPLE
An invitation to play.	The environment is free from external noise pollution and is appropriately lit. Playful (up-tempo and major) music is used (live or as a recording) to create a positive environment. Play-partners are free from distractions or other tasks and show availability to play. They are appropriately positioned to best support the child.	Musical play occurs in the drama room. Upbeat happy instrumental music is playing. The play-partner is positioned at the same level as the participant, in close proximity. The play partner sits to the left of the participant as this is where vision is best for the participant.
Follow the child's lead/focus of attention:	The play-partner presents instrument/instruments which may stimulate interest. These may or may not form the focus for play. The play-partner remains engaged in the activity/interest of the learner. Interests may vary in duration; they may be fleeting/sustained or delayed.	The play-partner may follow the learner physically or via eye contact, commenting on what the learner is doing etc. The participant is engaged with throwing the bells from the tray; the play-partner returns the bells each time in an excited playful manner. The game lasts for 10-12 mins. The play-partner remains engaged.
Respond to all communication attempts:	Pre-intentional communication is assigned meaning and intentional communication gets a response. The learner gets to know that their action gets a result. Actions, movements or vocalisations are used as the stimulus to develop a playful musical exchange.	Participant vocalises- adult may imitate/play instrument. Participant throws instrument, adult may pretend to chase/throw instrument.

Use exaggerated gestures, facial expressions, and tone	Play-partner uses a playful and animated pitch (e.g. Oooooooooh! Ah! Wow!)	The play-partner makes an 'Ooooooh' raises her arms dramatically before playing the drum to heighten
Explore objects playfully:	The play-partner supports the child to explore ways of producing sounds from/with the instrument, these may be non-conventional. This may include throwing/banging instruments and non-functional ways of creating sounds.	The participant puts their arm in and out of the bottom of a large drum. Each time their arm goes into the drum the play-partner bangs the drum.
Minimise speech:	Use minimal speech. The play-partner uses speech to motivate the child/ create a playful atmosphere which do not exceed 3-4 words mapped onto what exactly the learner is doing. Where possible avoid instructive and negative language. Playfully use vocalisations/voice play to explore intention and interaction.	'Hurray Sam!' 'Sam, hit the drum' 'Don't throw' 'Stop now!' The play-partner may buzz/hum, use high to low sounds as well as open vowel sounds, 'eeeeeeee' or 'oooooooooh' playfully.

Support peer play:	Play-partners work to scaffold and support peer-play, they are careful not to dominate it. Play-partners draw attention to peer through verbal encouragement, non-verbal signs and supporting turn-taking activities.	The play-partner says 'Ooooh, listen!' whilst pointing and looking towards the peer.
Share:	In group Musical Play, the play-partner promotes peer interaction through exaggerated sharing of instrument/stimuli.	The play-partner passes the drum to the peer; she is slow in doing so, playing a drum roll as she exaggerates the lifting and putting down of the drum. The participants anticipate the bang which will come when it arrives at the next person.

APPENDIX 5 Musical Play Training materials

Slide 1

Musical Play Framework

Framework n t a n t r o d u c t i o n a n d t r a n n g e o n



January 2022

The session



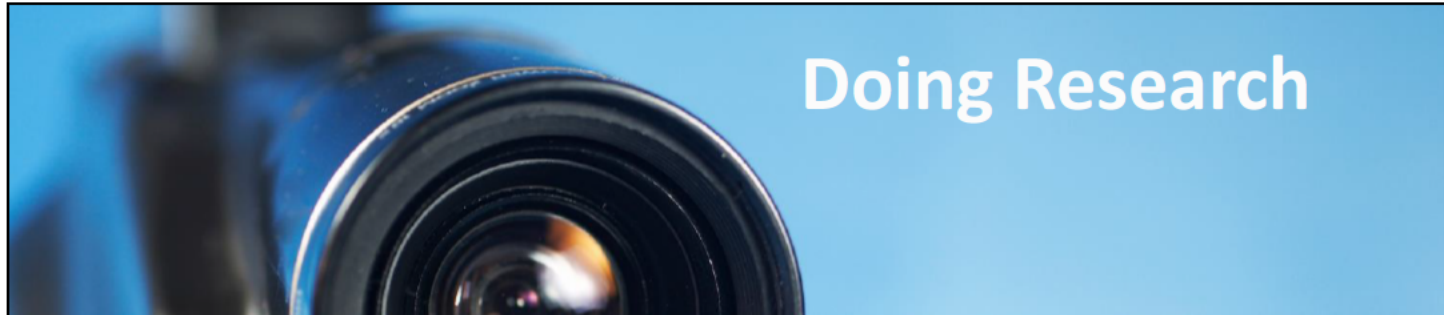
Introduction

Doing Research

Musical Play

Principles

Practicalities



Doing Research

Thorough and rigorous

Transparent

Honest

Musical Play Framework

Intensive Interaction



Nind and Hewitt
(2001)

Responsive Environment



Ware
(2003)

Adult Interactive Style



Kossyvaki
(2017)



Playfulness

An observable behaviour and/or an internal state.

Intrinsic, in the moment, process not outcome focused.

Without goal or intention, other than to support feelings of playfulness.

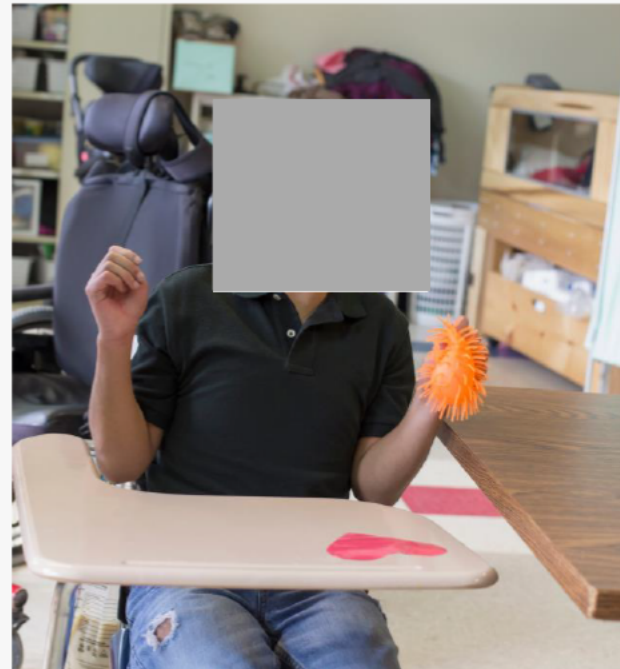
Slide 6

The signs of playfulness will be very individual to each child or young person

Role of the adult in play activities is particular importance for people with PMLD

Activity:

What does playfulness look like for an individual you work with?



Signs of playfulness

Watson (2014)

Physical

Subtle changes in facial expression, stilling, increased movement of body and eyes, finger flexing, relaxing, flapping, postural change

Emotional

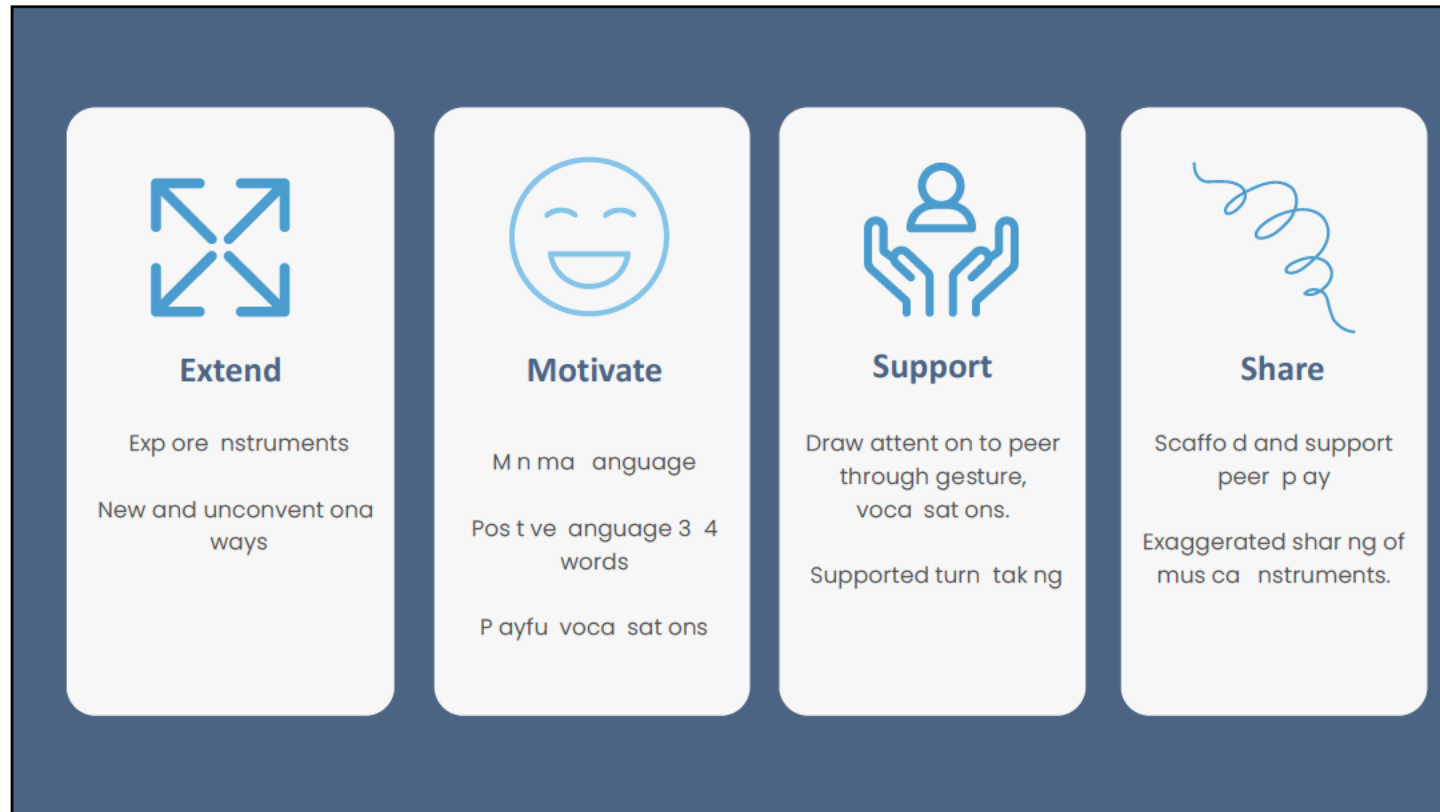
Open wide eye gaze, smiling, laughing, raised eyebrows, open mouth, tongue out, increased expressive vocalisation, happy sounds

Social

Moving nearer, reaching out, increased eye contact, leaning towards, touching, imitating.









Paired Activity (5 minutes)

Person 1:

Chose an instrument

Have fun using the MPF

Person 2: Feedback on the MPF
principles you think your partner
used, and how it felt.

Swap roles and repeat



Practicalities

Two sessions per week
up to 30 minutes in length
Two students per session
Each session video recorded

Positive playlist
Selection of instruments

Staggered start dates

Checklist for each session

How the Musical Play sessions are being delivered

What you perceived to have happened?



Your Role

Familiarise yourself with the MPF

Deliver the MPF twice each week to two participants

Consider what playfulness might look like for them

Complete the Checklist at each session

You could also: add to the playful music playlist, add some other musical instruments, feedback any issues, ideas etc.





Doing Research

Thorough and rigorous

Transparent

Honest

Questions?

Email Rosie:

Email my supervisor

Hours I'll be at XXX:

Monday 9.30-12pm

Wednesday 9.30-12pm

Thursday 9.30-10.45am

APPENDIX 6 Fidelity Checklist Staff

Musical Play Fidelity Checklist

Session Information

Staff member delivering the session:	Student participant/s (please include only initials):
Date:	Start Time: End Time:

To be completed before the session: ()

The student/s are awake and at the point of arousal.	Yes	No
The environment is free from external noise pollution.	Yes	No
The environment is appropriately lit.	Yes	No
Pre-recorded music is playing to create a positive environment.	Yes	No
Your positioning, and the positioning of the students enables engagement.	Yes	No

Please describe the how the young people in the session appear in terms of general mood and wellness.

How are you feeling today?	1 2 3 4 5
----------------------------	-------------------

--	--

*1-5 with 5 being a positive and good working mood.

To be completed after the session:

How do you feel you used the following Musical Play principles during the session today?

Musical Play Principles	Frequency	Confidence
Following the students lead/focus of attention	0 1 2 3	0 1 2 3
Responding to all communication attempts	0 1 2 3	0 1 2 3
Using exaggerated gestures, facial expressions, and tone of voice	0 1 2 3	0 1 2 3
Exploring objects playfully	0 1 2 3	0 1 2 3
Minimising speech	0 1 2 3	0 1 2 3
Avoiding instructive and negative language	0 1 2 3	0 1 2 3
Promoting peer interaction through exaggerated sharing of instrument/stimuli.	0 1 2 3	0 1 2 3
Drawing attention to peer through verbal encouragement and non-verbal signs or gestures.	0 1 2 3	0 1 2 3

Frequency: 0 = not at all, 1= rarely, 2=sometimes, 3= frequently

Confidence: 0=not used, 1= little confidence, 2=some confidence, 3=confidently

Role of the Adult Play Partner

How did you use the following principles during the session today?

Role of the Adult Play Partner	Frequency	Confidence
Observe: Watch the student interact with the object/instrument or other student.	0 1 2 3	0 1 2 3
Participate: Share and enjoy the music and play, imitate feelings of joy and delight.	0 1 2 3	0 1 2 3
Extend: Enhance the exploration of a musical object. Extend the play activity by adding an object/movement or response.	0 1 2 3	0 1 2 3
Model: Join in, model new behaviours or play alongside showing new ideas	0 1 2 3	0 1 2 3
Motivate: Encourage student to take part. This may be verbal prompting or through physical, tangible support (introducing or re-introducing an object for play).	0 1 2 3	0 1 2 3

Frequency: 0 = not at all, 1= rarely, 2=sometimes, 3= frequently

Confidence: 0=not used, 1= little confidence, 2=some confidence, 3=confidently

Was there anything different, new, or unusual about the session today?

APPENDIX 7 Observer Fidelity Checklist

Musical Play Observer Fidelity Checklist

Session Information

Staff member delivering the session:	Student participant/s (please include only initials):
Date:	Start Time: End Time:
Observer:	Period of observation:

Pre-Session Environmental Checklist:

	Yes	No
The student/s are awake and at the point of arousal.		
The environment is free from external noise pollution.		
The environment is appropriately lit.		

The musical instruments are available and accessible.		
Pre-recorded music is playing to create a positive environment.		
The positioning of the students and the play partner is adequate.		
The play partner appears available and attentive.		

Quality of delivery of Musical Play Principles:

	3 (High Quality)	2 (Adequate Quality)	1 (Poor Quality)
Play-partners are free from distractions or other tasks and show availability to play.	There are no external distractions for the play partner throughout the session. The play partner is attentive and alert.	There are few external distractions for the play partner throughout the session. The play partner is mostly attentive and alert.	There are numerous distractions for the play partner throughout the session. The focus of attention is elsewhere.
Follows the students lead/focus of attention.	The play partner responds to and follows the students focus. The play partners focus remains shared with that of the students.	The play partner responds to and follows the students focus on most occasions. The play partners focus mostly remains shared with that of the students.	Most activities are adult led. The play partner shows little, or no awareness of the students focus of attention.
Responds to all communication attempts.	The play partner is aware of and responds to all communication attempts.	The play partner is aware of and responds to most communication attempts.	The play partner shows little or no awareness of or response to communication attempts.

Uses exaggerated gestures, facial expressions, and tone of voice.	The play partner uses exaggerated facial expressions and tone of voice in appropriate response to the student throughout.	The play partner sometimes uses exaggerated facial expressions and tone of voice.	There is no/limited use of exaggerated facial expressions and tone of voice.
Explores objects playfully.	The play partner supports the student to explore ways of producing novel and interesting sounds from/with the instrument, these may be non-conventional.	The play partner supports the student to explore some novel and interesting sounds from/with the instrument.	There is no/limited exploration of the instruments.
Minimises speech.	There is minimal use of language throughout the session.	Language is significantly reduced with occasional periods of talking or narration.	The play partner narrates the session throughout.
Avoids instructive and negative language.	There is no use of negative or instructive language throughout the session.	There is minimal use of negative or instructive language throughout the session.	Negative or instructive language is used throughout the session.
Promotes peer interaction through exaggerated sharing of instrument/stimuli.	The play partner encourages peer awareness of one another and guides the interactions as appropriate.	The play partner encourages some peer awareness of one another and guides some interactions.	No/limited encouragement for peer interactions.
Draws attention to peer through verbal encouragement and non-verbal signs or gestures.	The play partner draws attention to the peer through appropriate verbal encouragement and gesture.	The play partner draws some attention to the peer through some verbal encouragement and gesture.	No/limited verbal and gestural encouragement for peer interactions.

Frequency and competency of Adult role adopted:

Role of Adult in Musical Play	Frequency	Competence
Observe: Watches the student interact with the object/instrument or other student.	0 1 2 3	0 1 2 3
Participate: Shares and enjoys the music and play, imitates feelings of joy and delight.	0 1 2 3	0 1 2 3
Extend: Enhances the exploration of a musical object. Extends the play activity by adding an object/movement or response.	0 1 2 3	0 1 2 3
Model: Joins in, models new behaviours, or plays alongside showing new ideas	0 1 2 3	0 1 2 3
Motivate: Encourages student/s to take part. This may be verbal prompting or through physical, tangible support (introducing or re-introducing an object for play).	0 1 2 3	0 1 2 3

0 = not at all, 1= rarely, 2=sometimes, 3= frequently

0= no evidence, 1=little competence or confidence, 2=some competence and confidence, 3=appropriately and confidently

APPENDIX 8 Staff focus-group interview schedules

Focus Group Interview 1: Pre-intervention

Check audio recording equipment is working. Thank participants for agreeing to interview; remind them that it is being audio recorded, re-check permission verbally, and if they want/need to stop at any time that is fine. It is possible to withdraw from the study at any point, until after the last focus group interview. Explain the general purpose of the discussion, explain that the focus-group is a confidential space and that the group will last no longer than one hour.

Topic 1: PLAY EXPERIENCES

- ? Can you tell me about some of your own experiences of play?

Prompt: When, where, who, how, why?

- ? What does play for people with PMLD mean to you?

Prompt: Importance, value

- ? What do you think your role is in supporting play for people with PMLD?
- ? How confident do you feel about this role?

Prompt: Confidence, experience, training, what is important

Topic 2: PEER PLAY

- ? Can you tell me about some of your own experiences about peer-play?

Prompt: When, where, who, how, why?

- ? How confident do you feel about this role?

Prompt: Confidence, experience, training

Topic 3: MUSIC AND PLAY

- ? Have you used music to support play at work before?

Prompt: When, where, who, how, why?

- ? How do you feel about using music to support play?

Prompt: Confidence, experience, training

Focus Group Interview 2: Post-intervention

Check audio recording equipment is working. Thank participants for agreeing to interview; remind them that it is being audio recorded, re-check permission verbally, and if they want/need to stop at any time that is fine. It is possible to withdraw your contribution from the study at any point, until after the last focus group interview. Explain the general purpose of the discussion, explain that the focus-group is a confidential space and that the group will last no longer than one hour.

Topic 1: MUSICAL PLAY TOOL

- ? How did you feel using the Musical Play tool?

Prompts: Why? Could you expand on that a little more? Confidence?

Have you felt like this on other occasions with the students?

- ? Do you feel it effected the play experiences for you?
- ? And how about for the children/young people you were working with?

Prompt: How, why? Could you expand on that a little more?

Topic 2: PLAY EXPERIENCES

- ? What were your previous experiences of play with people with PMLD?
- ? How do the Musical Play sessions differ from this?

Topic 3: PEER PLAY

- ? Do you feel the Musical Play sessions effected peer-play or awareness?

Prompt: How, why do you feel this way? Could you expand on that a little more?

- ? Does it differ from other experiences you have had with the students?

Topic 4: MUSIC AND PLAY

- ? How did you feel about the musical element of the Musical Play sessions?

Prompt: How about the use of instruments?

- ? Do you feel the music effected the play experience for you?
- ? And how about for the children/young people you were working with?

Topic 5: REVIEW AND IMPACT

- ? What do you feel worked well about the Musical Play sessions?
- ? Are there things you would change about the sessions?

Prompt: How, why do you feel this way?

- ? Do you think you will use anything from the Musical Play sessions in the future?

Prompt: How, when, why do you feel this way?

- ? Is there anything else you would like to acknowledge about your experiences with the Musical Play sessions?

Focus Group Interview 3: Follow-up

Check audio recording equipment is working. Thank participants for agreeing to interview; remind them that it is being audio recorded, re-check permission verbally, and if they want/need to stop at any time that is fine. It has been possible to withdraw from the study at any point until now, after this interview you will have a week to withdraw your contribution to the study, until everything is anonymised and the analysis begins. After this point it will not be possible to withdraw your contributions. Explain the general purpose of the discussion, explain that the focus-group is a confidential space and that the group will last no longer than one hour.

Topic 1: IMPACT OF MUSICAL PLAY

- ? Looking back at the Musical Play sessions, what were the main things that stood out to you?

Prompt: How, why do you feel this way? Could you expand on that a little more?

- ? Is there anything you have used from the sessions since the project collection ended?
- ? Have you done any more Musical Play sessions since the project collection ended?

Prompt: If not, why do you think this is? If yes, when, how and why?

Topic 2: PLAY EXPERIENCES

- ? Since taking part in the study what does play for people with PMLD mean to you?

Prompt: Importance, value, has this changed, why?

- ? Since taking part in the study what do you consider as important in your role supporting play for people with PMLD?

Prompt: Why, has this changed? Could you expand on that a little more?

- ? How do confident do you feel about this role?
- ? Do you feel the Musical Play sessions has affected your relationship with the students?

Prompt: How, why do you feel this way? Could you expand on that a little more?

Topic 3: IMPACT ON YOUNG PEOPLE

- ? Thinking about the students, do you think there is any lasting impact of the sessions on them?

Prompt: How, why do you feel this way? Could you expand on that a little more?

- ? How about their relationships with their peers, has there been and impact on those relationships?

Prompt: How, why do you feel this way? Could you expand on that a little more?

Topic 4: MUSIC AND PLAY

- ? Has anything changed about the way you use music in school changed since the study?

Prompt: If yes, could you give an example of this? How and why?

Topic 5: REVIEW

- ? Reflecting on the study is there anything you would have changed or done differently?

Prompt: What, why, what made you think this?

- ? Is there anything else you would like to acknowledge about your experiences with the Musical Play sessions?

APPENDIX 9 Results for Jack (Setting 1)

Potential expressions of playfulness: Reactive Play Jack

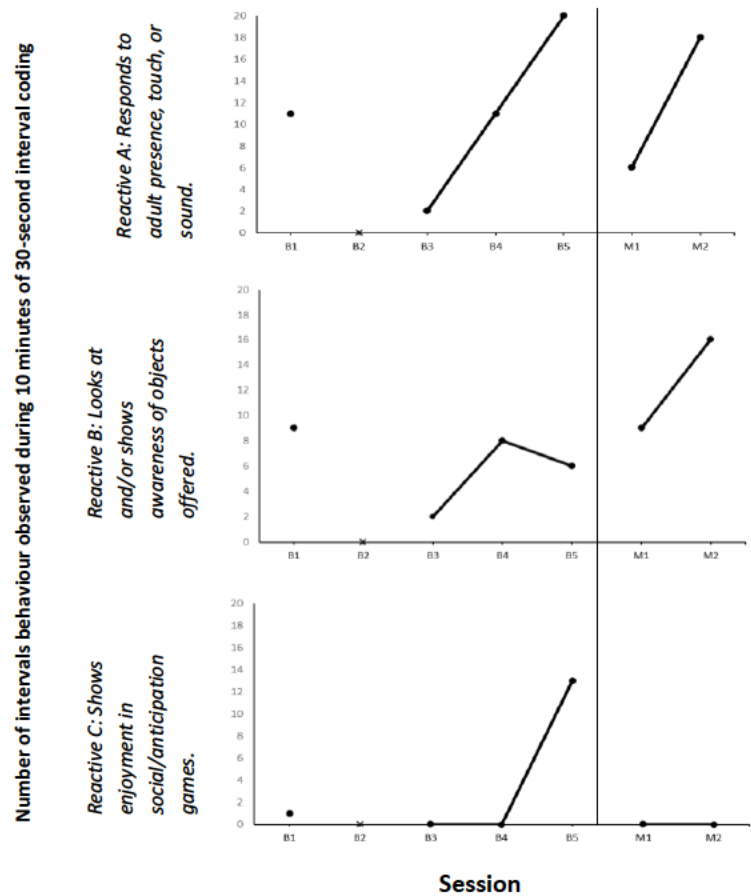
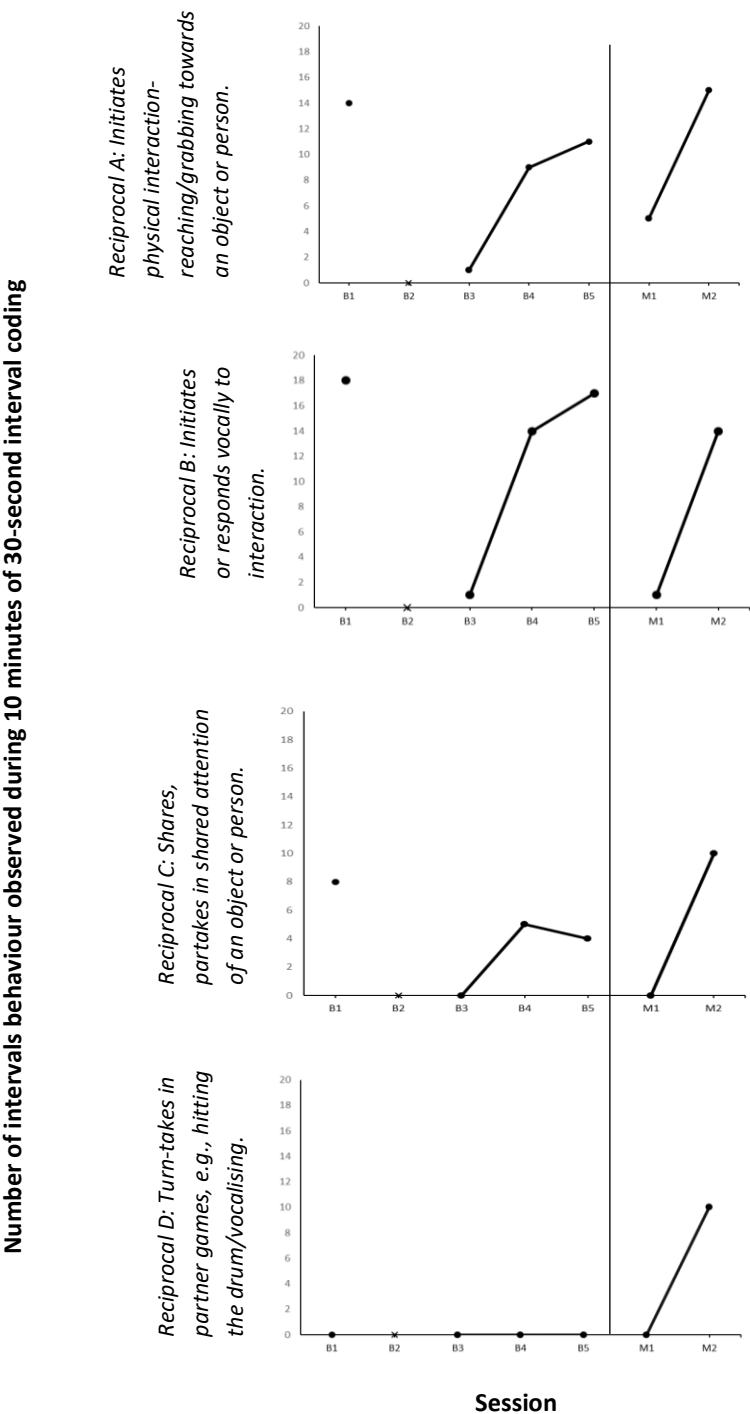


Figure N: Potential expressions of playfulness: Reciprocal Play Jack



APPENDIX 10 Inter-observer scores

Inter-observer 1; Setting 1

Session	Inter-coder 1	Researcher	Agreement
45a	15	3	0
45b	15	6	0
45c	10	0	0
45a	8	1	0
45b	14	0	0
45c	11	3	0
45d	9	0	0
45a	15	12	0
45b	0	1	1
45c	0	0	1
23a	1	5	1
23b	6	8	1
23c	0	0	1
23a	1	0	1
23b	3	3	1
23c	0	4	1
23d	0	0	1
23a	0	6	0
23b	0	0	1
23c	0	0	1
52a	7	5	0
52b	17	12	0
52c	3	2	1
52a	9	11	1
52b	6	6	1
52c	5	7	0
52d	1	2	1
52a	5	7	0
52b	0	0	1
52c	0	0	1
22a	0	1	1
22b	1	6	1
22c	0	0	1
22a	0	0	1
22b	0	0	1
22c	0	0	1

22d	0	0	1
22a	0	0	1
22b	0	0	1
22c	0	0	1
16a	17	19	1
16b	17	17	1
16c	0	0	1
16a	4	14	0
16b	6	6	1
16c	15	5	0
16d	0	0	1
16a	0	1	1
16b	0	0	1
16c	0	0	1
66a	1	6	1
66b	4	9	0
66c	0	0	1
66a	1	5	1
66b	0	1	1
66c	0	0	1
66d	0	0	1
66a	0	0	1
66b	0	0	1
66c	0	0	1

Inter-observer 1; Setting 2

Session	Inter-coder 1	Researcher	Agreement
81a	8	19	0
81b	4	11	0
81c	0	10	0
81a	1	5	1
81b	0	12	0
81c	2	18	0
81d	0	0	1
81a	1	17	0
81b	0	4	1
81c	0	2	1
76a	1	17	0
76b	6	11	0
76c	0	10	0

76a	1	12	0
76b	0	4	1
76c	4	12	0
76d	0	0	1
76a	1	14	0
76b	0	4	1
76c	0	1	1
151a	0	3	1
151b	0	0	1
151c	0	0	1
151a	0	0	1
151b	0	0	1
151c	0	0	1
151d	0	0	1
151a	0	4	1
151b	0	0	1
151c	0	0	1
108a	20	20	1
108b	17	18	1
108c	7	4	0
108a	11	10	1
108b	4	8	0
108c	17	14	1
108d	0	0	1
108a	16	15	1
108b	1	2	1
108c	0	2	1
109a	20	18	1
109b	14	18	1
109c	0	3	1
109a	12	8	1
109b	2	10	0
109c	16	15	1
109d	1	0	1
109a	11	19	0
109b	1	3	1
109c	2	0	1
161a	1	0	1
161b	7	8	1
161c	0	0	1
161a	0	1	1

161b	0	2	1
161c	0	0	1
161d	0	0	1
161a	3	4	1
161b	0	0	1
161c	0	0	1
121a	0	2	1
121b	0	0	1
121c	0	0	1
121a	0	0	1
121b	0	3	1
121c	0	0	1
121d	0	0	1
121a	0	4	1
121b	0	0	1
121c	0	0	1
152a	3	5	1
152b	1	0	1
152c	0	0	1
152a	1	1	1
152b	1	1	1
152c	1	0	1
152d	0	0	1
152a	0	0	1
152b	0	0	1
152c	0	0	1
90a	20	20	1
90b	19	20	1
90c	2	5	1
90a	19	20	1
90b	9	14	0
90c	19	20	1
90d	19	2	0
90a	14	16	1
90b	3	8	0
90c	3	4	1
181a	11	11	1
181b	19	17	1
181c	1	0	1
181a	10	15	0
181b	1	2	1

181c	2	13	0
181d	0	0	1
181a	3	7	0
181b	0	0	1
181c	0	3	1

Inter-observer 2; Setting 1

Session	Inter-observer 2	Researcher	Agreement
67a	20	18	1
67b	17	16	1
67c	13	0	0
67a	17	15	1
67b	16	14	1
67c	0	10	0
67d	10	10	1
14a	15	18	1
14b	20	15	1
14c	6	0	1
14a	17	12	0
14b	10	3	0
14c	0	3	1
14d	0	0	1
14a	1	1	1
14b	3	0	1
14c	1	0	1
18a	20	1	0
18b	16	0	0
18c	0	0	1
18a	1	0	1
18b	18	0	0
18c	0	0	1
18d	0	0	1
44a	4	3	1
44b	12	8	1
44c	0	0	1
44a	9	3	0
44b	2	0	1
44c	0	2	1
44d	0	0	1
44a	9	4	0

44b	6	0	1
44c	0	0	1

Inter-observer 2; Setting 2

Session	Inter-observer 2	Researcher	Agreement
99a	18	15	1
99b	12	2	0
99c	10	0	0
99a	1	2	1
99b	4	3	1
99c	0	2	1
99d	0	0	1
99a	10	4	0
99b	5	0	1
99c	0	0	1
173a	19	8	0
173b	18	7	0
173c	0	0	1
173a	11	4	0
173b	1	0	1
173c	0	1	1
173d	0	0	1
173a	20	3	0
173b	0	0	1
173c	0	0	1
80a	20	19	1
80b	14	8	0
80c	20	7	0
80a	13	1	0
80b	8	12	1
80c	1	11	0
80d	0	0	1
80a	18	8	0
80b	18	3	0
80c	2	2	1
141a	19	10	0
141b	14	0	0
141c	16	0	0
141a	0	0	1
141b	10	5	0

141c	1	0	1
141d	0	0	1
141a	20	7	0
141b	19	0	0
141c	0	0	1
165a	7	8	1
165b	19	18	1
165c	6	0	1
165a	17	11	0
165b	3	3	1
165c	0	0	1
165d	0	0	1
105a	20	20	1
105b	14	19	1
105c	19	12	0
105a	13	15	1
105b	19	19	1
105c	1	18	0
105d	0	0	1
105a	20	18	1
105b	20	7	0
105c	0	5	1
171a	2	1	1
171b	0	0	1
171c	0	0	1
171a	0	0	1
171b	0	1	1
171c	0	0	1
171d	0	0	1
171a	8	8	1
171b	0	0	1
171c	0	0	1
148a	17	10	0
148b	19	11	0
148c	8	0	0
148a	7	4	0
148b	1	1	1
148c	0	4	1
148d	0	0	1
148a	19	10	0
148b	11	0	0

148c	0	0	1
112a	16	8	0
112b	0	0	1
112c	0	0	1
112a	0	0	1
112b	2	1	1
112c	0	0	1
112d	0	0	1

APPENDIX 11 Participant Consent forms

Phase 1

Online Survey and Listening Experience



UNIVERSITY OF
BIRMINGHAM

Exploring the impact of music on the play experiences of children and young people with Profound and Multiple Learning Disabilities

Dear Participant,

Thank you for considering to take part in this online listening experience, which forms part of a study which is ethically approved by the Research Ethics Committee (REC Ref 300007) and overseen by the Department of Disability Inclusion and Special Needs (DISN) at the University of Birmingham, who is the sponsor for the study. <https://www.birmingham.ac.uk/schools/education/departments/disability-inclusion-special-needs/index.aspx>

This study is part of a wider research project taking place at another setting in the West Midlands and is carried out as partial fulfilment of a Doctoral program of study.

What is it about?

We are developing a tool which we hope will support play activities for people with profound and multiple learning disabilities (PMLD). The tool, Musical Play, hopes to use pre-recorded music, instruments, and vocal play to support play activity and feelings of playfulness for people with PMLD and their supporting adults.

This phase of the study aims to look at how different types of music effect the moods and behaviours of children and young people with profound and multiple learning disabilities. We want to know if there are certain musical ingredients which support playful actions or responses so that we can include them in our design of the Musical Play tool.

Can you be involved?

We are looking for parents/carers of children and young people aged 5-25 years, living in **England***, that have profound and multiple learning disabilities to act as co-researchers in collecting this information.

A description of Profound and Multiple learning disabilities is provided from the Core and Essential Service Standards (2017): *“People with Profound and Multiple learning disabilities are a heterogeneous group of people with a profound intellectual disability, often combined with additional disabling conditions such as physical disabilities, sensory impairments and complex medical needs”*.

What does it involve?

Your participation in this study is entirely voluntary, and you may withdraw at any time. Along with providing some basic details, we would like you, as a co-researcher, to listen to the music with your child or young person and record how they respond to it.

The listening experience and questionnaire will take around 30 minutes to fully complete. You will need a way to listen to the music together with your child or young person with PMLD. You can listen to each track for as long as you like and repeat tracks too. You can skip any of the music or questions within the study, particularly if the person you are listening with seems to be distressed by the music.

Please remember there are no right or wrong responses or answers.

What are the possible risks of taking part?

There should be no disadvantages or risks to taking part in this study.

The University has in force a Public Liability Policy and/or Clinical Trials policy which provides cover for claims for "negligent harm" and the activities here are included within that coverage.

What are the possible benefits of taking part?

There are no individual benefits to your child. The main benefit of taking part is to provide information on the effects of listening to music on the behaviours, responses, and mood of young people with PMLD. This whole study will help to provide better understanding of how Musical Play impacts on the play experiences of people with PMLD.

Confidentiality

We will need to use information from you for this research project.

People will use this information to do the research or to check your records to make sure that the research is being done properly.

The listening experience and questionnaire are anonymous, and you can choose to withdraw at any time whilst you are completing it. Once submitted all questionnaires are given codes, meaning that you will not be able to be identified. You can stop being part of the study at any time, without giving a reason, but we will keep information about you that we already have.

We need to manage your records in specific ways for the research to be reliable. This means that we won't be able to let you see or change the data we hold about you.

We believe there are no known risks associated with this research study; however, as with any online related activity the risk of a breach is always a possibility. To the best of our ability answers within this study will remain confidential.

If you provide your email address to receive a report of the findings these will be securely stored in line with the GDPR guidance until the end of this research project (September 2023). This information will not be shared with any third parties. You can find out more about how we use your information by asking one of the research team or by sending an email to dataprotection@contacts.bham.ac.uk.

People who do not need to know who you are will not be able to see your name or contact details. Your data will have a code number instead. We will keep all information about you safe and secure.

Once we have finished the study, we will keep some of the data so we can check the results. We will write our reports in a way that no-one can work out that you took part in the study.

Data generated from the study will be kept securely in paper and digital form for a period of 10 years after the completion of the project. This is in accordance with the University policy on academic integrity. The findings from the study will be used in the researcher's Doctoral thesis. They will also be reported in journal articles and at conferences. You can request a summary of the research findings by providing your email at the end of the questionnaire.

If you have any questions about the research, you can contact Rosie Rushton on RXR565@bham.ac.uk or if you would like to contact someone other than the researcher, you may contact Dr Lila Kossyvaki who is supervising this study: A.Kossyvaki@bham.ac.uk.

* This research is only looking for participants from England as ethical approval has been granted by the Research Ethics Committee, who have approved this project for England based sites.

☐

I confirm that I have read and understand the information above and consent to participate (please tick)



Exploring the impact of music on the play experiences of children and young people with Profound and Multiple Learning Disabilities

PARENT PARTICIPANT INFORMATION SHEET

November 2021

Dear Parents/Guardians,

We are writing to ask for consent for your child to be included in the research study: Exploring the impact of music on the play experiences of children and young people with Profound and Multiple Learning Disabilities which is being carried out at XXX this academic year. This study is part of a wider research project taking place at another setting in the West Midlands and is carried out as partial fulfilment of a Doctoral program of study.

The research has been approved by the Research Ethics Committee (REC Ref: 21/LO/0674) and is sponsored by the University of Birmingham.

We are looking for 6-8 children from XXX to take part in this study.

Purpose: The purpose of the research is to explore play opportunities for children with profound learning disabilities and to consider the role staff have in supporting play. To do this school staff will be delivering Musical Play sessions twice a week for the term. If you are happy for your child to be involved in the project, they will access two Musical Play sessions each week for between 5-10 weeks this term. Children will be supported by their class staff. Each session will last around half an hour and will use a range of pre-recorded music, instruments, and vocal play.

All sessions will be video recorded. To evaluate the impact of the sessions video footage will be analysed for study and data purposes only. All video footage collected during this research will be securely stored and used only for the purposes of this study. Video recordings will be deleted once the data has been coded and analysed.

Benefits and risks: of taking part in this research have been considered and reviewed. We cannot see any risk of being involved in the research, however if your child is not enjoying taking part in a Musical Play session they will be withdrawn from the session. If they seem upset during Musical Play on more than one occasion they will be withdrawn from the study.

It is also possible to withdraw your child from the research at any point, without explanation. However, the write-up from data collected will begin in May 2022, after this point it will no longer be possible to exclude your child's information from the research.

We need to manage your records in specific ways for the research to be reliable. This means that we won't be able to let you see or change the data we hold about you.

Confidentiality:

We will need to use information from you for this research project.

This information will include your name and your child's name and age.

People will use this information to do the research or to check your records to make sure that the research is being done properly.

Your participation in this research is confidential; all names and places will be anonymised. Neither your child nor their educational setting will be identified in the results of the study. People who do not need to know who you or your child is will not be able to see your names or contact details. Your data will have a code number instead. We will keep all information about you safe and secure.

Once we have finished the study, we will keep some of the data so we can check the results. We will write our reports in a way that no-one can work out that you took part in the study.

Data generated from the study will be kept securely in paper and digital form for a period of 10 years after the completion of the project. This is in accordance with the University policy on academic integrity.

You can find out more about how we use your information by asking a member of the research team or by sending an email to dataprotection@contacts.bham.ac.uk.

What will happen to the results of the study?

The findings from the study will be used in the researcher's Doctoral thesis. They will also be reported in journal articles and at conferences. A summary of the research findings will be sent to your child's setting, the school will have the opportunity to pass this summary onto parents.

If you have any questions about the research, you can contact Rosie Rushton on [REDACTED] or if you would like to contact someone other than the researcher, you may contact Dr Lila Kossovaki who is supervising this study: [REDACTED] (DISN, School of Education, University of Birmingham).

If you are happy for your child to be involved in this project, **please complete the forms attached and return the full letter to school as soon as possible.**

Rosie Rushton

Exploring the impact of music on the play experiences of children and young people with Profound and Multiple Learning Disabilities



UNIVERSITY OF
BIRMINGHAM

PARENTAL CONSENT FORM

Name of Researcher: Rosie Rushton

Supervisory team: Dr Lila Kosyvaki and Dr Emmanouela Terlektsi

Please initial each box

1. I..... [name of parent/guardian completing the form]
confirm that I have read the information regarding
.....'s [name of child participant] participation in the above study. I
have had the opportunity to consider the information, ask questions and have had these
answered satisfactorily.

☐

2. I understand that my child's participation is voluntary and that I am free to withdraw my
child at any time without giving any reason, without my child's educational experiences being
affected.

☐

3. I understand that taking part in the study will include my child being video recorded and
consent to my child being video recorded as part of this study.

☐

4. I agree for my child to take part in the above study.

☐

Name of Parent/guardian

Date

Signature

Name of Person
seeking consent (researcher)

Date

Signature



Exploring the impact of music on the play experiences of children and young people with Profound and Multiple Learning Disabilities

INFORMATION FOR CONSULTEE

Introduction

We feel your relative/friend is unable to decide for himself/herself whether to participate in this research.

To help decide if he/she should join the study, we would like to ask your opinion whether they would want to be involved. We would like to ask you to consider what you know of their wishes and feelings, and to consider their interests. Please let us know of any advance decisions they may have made about participating in research. These should take precedence.

If you decide your relative/friend would have no objection to taking part, we will ask you to read and sign the consultee declaration on the last page of this information leaflet. We will then give you a copy to keep. We will keep you fully informed during the study so you can let us know if you have any concerns or you think your relative/friend should be withdrawn.

If you decide that your friend/relative would not wish to take part, it will not affect the experience they receive at college in any way.

If you are unsure about taking the role of consultee you may seek independent advice.

We will understand if you do not want to take on this responsibility.

The following information about the study is the same as would have been provided to your relative/friend.



Exploring the impact of music on the play experiences of children and young people with Profound and Multiple Learning Disabilities

CONSULTEE PARTICIPANT INFORMATION SHEET

Dear Participant,

Thank you for considering to take part in this research study: Exploring the impact of music on the play experiences of children and young people with Profound and Multiple Learning Disabilities which is being carried out at [setting name] this academic year. This study is part of a wider research project taking place at another setting in the West Midlands and is carried out as partial fulfilment of a Doctoral program of study.

The research has been approved by the Research Ethics Committee (REC Ref 21/LO/0674) and is sponsored by the University of Birmingham.

We are looking for 6-8 participants from XXX to take part in this study.

Purpose: The purpose of the research is to explore play opportunities for children and young people with profound learning disabilities and to consider the role staff have in supporting play. To do this college staff will be delivering Musical Play sessions twice a week for the term. If you are happy to be involved in the project, participants will access two Musical Play sessions each week for between 5-10 weeks next term, as the introduction of the Musical Play sessions is staggered to help us better understand its impact. Participants will be supported by their class staff. Each session will last around half an hour and will use a range of pre-recorded music, instruments, and vocal play.

All sessions will be video recorded. To evaluate the impact of the sessions video footage will be analysed for study and data purposes only. All video footage collected during this research will be securely stored and used only for the purposes of this study. Video recordings will be deleted once the data has been coded and analysed.

Benefits and risks: of taking part in this research have been considered and reviewed. We cannot see any risk of being involved in the research, however if participants are not enjoying taking part in a Musical Play session they will be withdrawn from the session. If participants are upset during Musical Play on more than one occasion they will be withdrawn from the study.

It is also possible to withdraw from the research at any point, without explanation. However, the write-up from data collected will begin in May 2022, after this point it will no longer be possible to exclude participants information from the research.

We need to manage your records in specific ways for the research to be reliable. This means that we won't be able to let you see or change the data we hold about you.

Confidentiality:

We will need to use information from you for this research project.

This information will include your name and age.

People will use this information to do the research or to check your records to make sure that the research is being done properly.

Your participation in this research is confidential; all names and places will be anonymised. Neither participants nor educational setting will be identified in the results of the study. People who do not need to know who you are will not be able to see your names or contact details. Your data will have a code number instead. We will keep all information about you safe and secure.

Once we have finished the study, we will keep some of the data so we can check the results. We will write our reports in a way that no-one can work out that you took part in the study.

Data generated from the study will be kept securely in paper and digital form for a period of 10 years after the completion of the project. This is in accordance with the University policy on academic integrity.

You can find out more about how we use your information by asking one of the research team or sending an email to dataprotection@contacts.bham.ac.uk.

What will happen to the results of the study?

The findings from the study will be used in the researcher's Doctoral thesis. They will also be reported in journal articles and at conferences. A summary of the research findings will be sent to your school/college setting, who will have the opportunity to pass this summary on.

If you have any questions about the research, you can contact Rosie Rushton on [REDACTED] or if you would like to contact someone other than the researcher, you may contact Dr Lila Kossyvaki who is supervising this study: [REDACTED] (DISN, School of Education, University of Birmingham).

If you are happy to be involved in this project, **please complete the forms attached and return the full letter to college as soon as possible.**

Rosie Rushton

Exploring the impact of music on the play experiences of children and young people with Profound and Multiple Learning Disabilities



UNIVERSITY OF
BIRMINGHAM

CONSULTEE DECLARATION FORM

Name of Researcher: Rosie Rushton

Supervisory team: Dr Lila Kossyvakis and Dr Emmanouela Terlektsi

Please initial box

I..... [name of person completing the form]
have been consulted about[name of potential participant]
participation in this research project. I have had the opportunity to ask questions
about the study and understand what is involved.

☐

In my opinion he/she would have no objection to taking part in the above study.

☐

I understand that I can request he/she is withdrawn from the study at anytime,
without giving any reason and without his/her educational care or legal rights being affected.

☐

I understand that taking part in the study will include video recording and, in my opinion,
he/she would consent to being video recorded as part of this study.

☐

Name of Consultee

Date

Signature

Relationship to participant: _____



PHASE 2

Exploring the impact of music on the play experiences of children and young people with Profound and Multiple Learning Disabilities

STAFF PARTICIPANT INFORMATION SHEET

November 2021

Dear Participant,

Thank you for considering to take part in this study, which is sponsored by the University of Birmingham. This study is part of a wider research project taking place at another setting in the West Midlands and is carried out as partial fulfilment of a Doctoral program of study.

The research has been approved by the Research Ethics Committee (REC Ref 21/LO/0674).

What is it about?

The purpose of the research is to explore play opportunities for children and young people with profound learning disabilities and to consider the role staff have in supporting play. The study is looking at how music can be used to support play opportunities for children and young people with PMLD through Musical Play, an approach developed by the researcher and staff in a special school setting in a previous study.

What will happen if you choose to be involved?

To see the effect of Musical Play on the play experiences of students and staff you will be trained to deliver Musical Play sessions to students in your class/setting. The training session will last around 90 minutes.

Before the Musical Play sessions begin, we will consider how the students typically play. This is called a baseline process. We will ask you to video record these sessions. After this you will be asked to deliver Musical Play sessions to students twice a week for the rest of the term. Each Musical Play session will last around half an hour and will include you, and two students.

We will ask you to complete a short checklist every session to see what you did.

We will ask you to video record each session, so that we can collect data on the responses of the participants with PMLD. Video recordings will be deleted once the data has been analysed.

We will ask you to take part in three **focus groups** (group discussions with the researcher and class staff) which will be no more than one hour in length and arranged to be as convenient as possible. The focus

groups will be audio recorded, using an encrypted recording device. Audio recordings will be transcribed by the researcher, and any identifiable information will be removed. Once transcribed audio recordings will be deleted.

Participation and withdrawal: You can choose to take part in as much of the research as you want. You can withdraw from the project at any point, without reason or explanation. However, the write-up from data collected will begin in May 2022 after this point it will no longer be possible to exclude your information from the research.

We need to manage your records in specific ways for the research to be reliable. This means that we won't be able to let you see or change the data we hold about you.

What are the possible disadvantages and risks of taking part?

Taking part in this research requires you to give some of your time, you may feel an increase in workload because of this.

The University has in force a Public Liability Policy and/or Clinical Trials policy which provides cover for claims for "negligent harm" and the activities here are included within that coverage.

What are the possible benefits of taking part?

Taking part in the Musical Play training and sessions is likely to develop your own professional practice. The study, as a whole, will help to provide better understanding of the impact using Musical Play can have on the play experiences of both staff and students with PMLD.

Confidentiality:

We will need to use information from you for this research project.

This information will include your first name and your work email address.

People will use this information to do the research or to check your records to make sure that the research is being done properly. Your participation in this research is confidential; all names and places will be anonymised. Neither you nor your setting will be identified in the results of the study. People who do not need to know who you are will not be able to see your name or contact details. Your data will have a code number instead. We will keep all information about you safe and secure.

Once we have finished the study, we will keep some of the data so we can check the results. We will write our reports in a way that no-one can work out that you took part in the study.

Data generated from the study will be kept securely in paper and digital form for a period of 10 years after the completion of the project. This is in accordance with the University policy on academic integrity.

You can find out more about how we use your information by asking the research team or sending an email to dataprotection@contacts.bham.ac.uk.

Video recording: In order to evaluate the impact of these sessions video footage will be analysed for study and data purposes only. Footage collected during this research will be securely stored and used only for the purposes of this study. It will not be shared with school staff or form part of your appraisal. Video recordings will be deleted once the data has been coded and analysed.

What will happen to the results of the study?

The findings from the study will be used in the researcher's Doctoral thesis. They will also be reported in journal articles and at conferences. A summary of the research findings will be sent to your setting.

If you have any questions about the research, you can contact Rosie Rushton on [REDACTED] or if you would like to contact someone other than the researcher, you may contact Dr Lila Kossyvakis who is supervising this study: [REDACTED]

If you are happy to be involved in this project, **please complete the forms attached and return them to your work setting.**

Rosie Rushton

Exploring the impact of music on the play experiences of children and young people with Profound and Multiple Learning Disabilities

STAFF PARTICIPANT CONSENT FORM



UNIVERSITY OF
BIRMINGHAM

Name of Researcher: Rosie Rushton

Supervisory team: Dr Lila Kossyvaki and Dr Emmanouela Terlektsi

Please initial
box

1. I confirm that I have read the information sheet dated Nov. 2021 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected. ☐
3. I understand that taking part in the project will include being video recorded in the play session and being interviewed in a focus group which will be audio recorded to discuss my perspective with others. ☐
4. I understand that my words may be quoted anonymously in publications, reports, web pages, and other research outputs. ☐
5. I agree to take part in the above study. ☐

Name of Participant

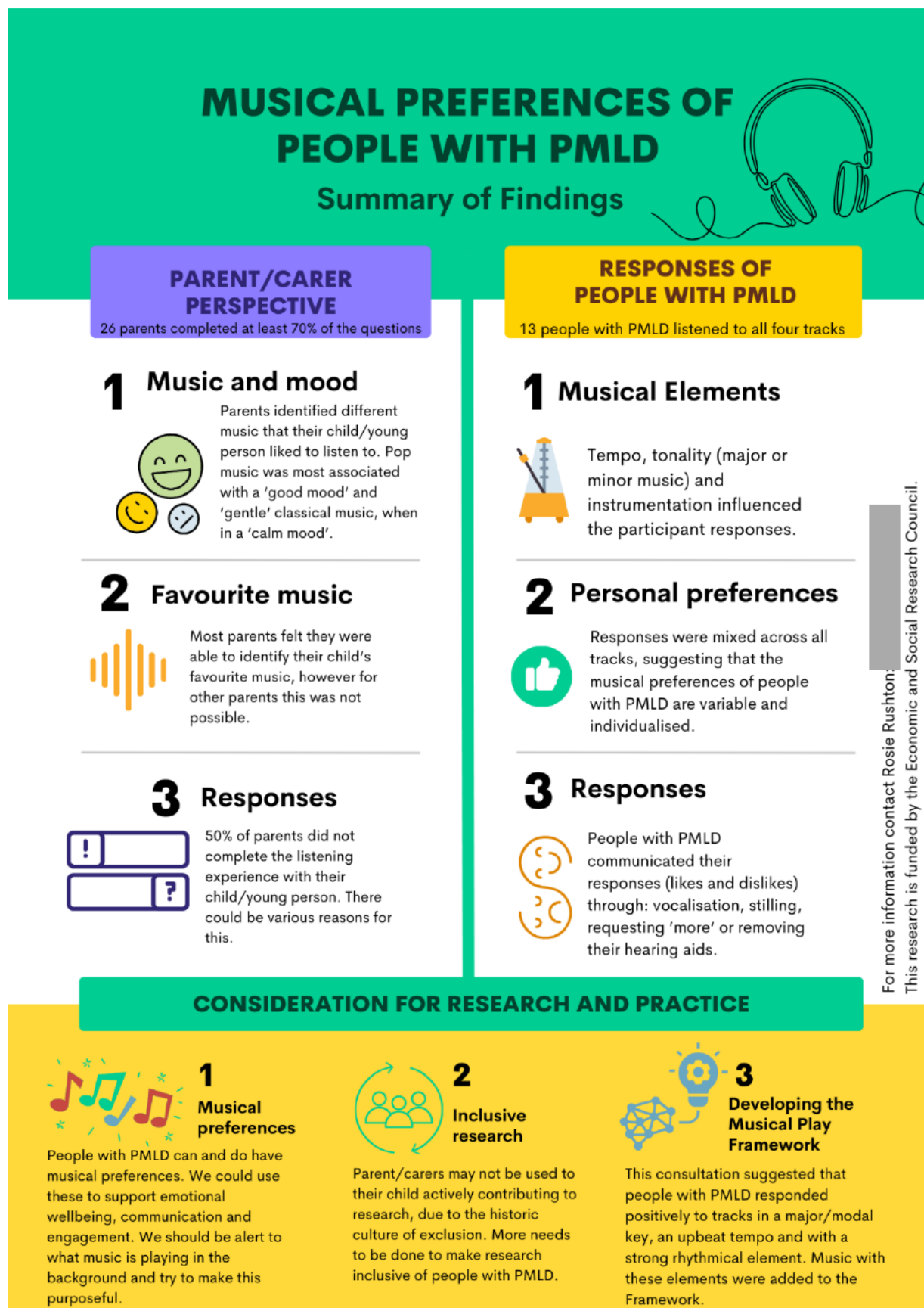
Date

Signature

Person seeking consent

Date

Signature.



For more information contact Rosie Rushton:
This research is funded by the Economic and Social Research Council.