Simmons, B. (2022) Social embodiment in early childhood education for children with PMLD. In Conn, C. and Murphy, A. (eds.) *Inclusive pedagogies for early childhood education: respecting and responding to differences in learning*. Routledge.

Abstract

There is on-going debate about the extent to which mainstream education is appropriate for children with profound and multiple learning difficulties (PMLD). Whilst the United Nations (2006) has declared that 'inclusive education' is a fundamental human right, proponents of special education have argued that the severe learning impairments of children with PMLD preclude them from meaningful participation in mainstream schools (Imray and Colley 2017). Despite strong views for and against the inclusion of children with PMLD in mainstream schools, there is very little research on the topic and there are no published studies that focus on early childhood education. This chapter addresses the status quo by presenting a project that explored how mainstream and specialist early years settings supported the social interaction of children with PMLD. The findings suggest that there can be parity between mainstream and specialist settings in terms of how staff support children with PMLD. The findings also suggest that peer interaction is not a given in either setting, and may require support from teaching staff. An enactivist lens (Fuchs and De Jaegher 2009, Kyselo 2014) is applied to the findings which illuminates who leads social interaction, and how this shapes the social identity of children with PMLD.

Introduction

The extent to which every child could (and should) be educated in a mainstream school is a contentious issue, with debates taking place on a national and international level. Recent criticism of the United Kingdom's disability rights record offers a clear example of such tension. The *Conventions on The Rights of Persons with Disabilities* states that all children should 'access an inclusive, quality, free primary and secondary education on an equal basis with others in the communities in which they live' (UN 2006, Article 24). However, despite ratifying the CRPD in 2009, the United Kingdom's government continues to support the view that some children are best educated in special schools, and that an education system can be considered 'inclusive' as long as children receive some form of education – regardless of whether the setting is mainstream or special (Armstrong, Armstrong and Spandagou 2010, Alliance for Inclusive Education 2021). The United Nations (2017) has expressed disapproval of this dual education system, claiming that it has led to a rise in the number of disabled children being segregated. It has also criticised insufficient teacher education in the field of inclusion, and recommended that the government take concrete steps to realise the rights of disabled children to an inclusive education (EHRC 2017).

Children with profound and multiple learning difficulties (PMLD) form part of the group for whom inclusive education is deemed unrealistic, and debates in academia mirror those taking place between nation states and intergovernmental organisations. Proponents of

segregated education have argued that children with PMLD experience global developmental delay, function at the preverbal stages of representation, and require developmental pedagogy and curricular that contrasts sharply to the subject-based education offered by mainstream schools (Imray and Colley 2017). By contrast, mainstream schools have been described as spaces that offer children with PMLD the opportunity to participate in the global project of 'inclusive education', with the promise that mainstream education leads to social cohesion and, ultimately, more inclusive societies (Lacey and Scull 2015).

Whilst there is strong sentiment on both sides of the debate, a key problem is that there is very little research evidence on which to draw, meaning that the perspectives of children, their parents/carers and teaching staff have been ignored. This leads to detached and abstract commentary where appeals are made either to human rights or common sense without any real understandings shown about what actually happens when children with PMLD attend mainstream schools. Hence, debates lack substance – they are ignorant of the concrete realities of classroom practice and associated lived experiences - and can be considered unethical from a disability rights perspective insofar as commentators and policy makers fail to listen to the voices of children with PMLD and those involved with their education and care (Oliver 1992). This leads to questions not just about the value of such debate, but whose interests are being served by the silencing.

This chapter contributes to the debate by presenting the findings of a project that examined how different educational settings (mainstream, special, nursery, primary and secondary) provide social interaction opportunities for children with PMLD. Whilst some of the findings have been described elsewhere (e.g., Simmons 2021a, 2021b), this chapter presents the first detailed analysis of data that relates to early childhood education, and is the first published study involving children with PMLD in mainstream early years settings. The study makes no pretence about its methodological nature – the aim and design of the research was researcher-led and therefore not consistent with emancipatory approaches to disability research (Oliver 1992). However, it provides a novel and concrete description about what mainstream early childhood education for children with PMLD can look like, and involves the experiences of children with PMLD in the inclusion debate. What emerges from this description is the view that mainstream education can be consistent with special education in terms of how children are supported by staff. It also raises awareness of the importance and complexities of supporting peer interaction.

Finally, whereas the PMLD field has been heavily influenced by psychological theory when developing intervention strategies, this chapter employs an enactivist theory (Varela, Thompson and Rosch 1991) to guide analysis of how different educational milieus support the social engagement of children with PMLD. Rather than assuming that children with PMLD lack the behavioural and cognitive abilities to meaningfully engage with mainstream settings, an enactivist account holds that diverse settings are central to the enrichment of our conscious awareness and abilities. These themes are explored in more detail later in the chapter.

The next section will briefly describe the history of behaviourism and cognitivism, and the influence it has had on PMLD research. This paves the way for discussion of enactivism and its significance for the PMLD field. After describing the aims and methodology, the findings of the research will be described, and the discussion will apply the enactivist lens to help illuminate the findings in more detail. The conclusion will offer further refection about inclusion debates in light of the presented evidence.

Traditional theory in the PMLD field: behaviourism and cognitivism

Educational research involving children with PMLD has traditionally been informed by behaviourism and cognitivism. This section will briefly outline these approaches before exploring enactivism as an alternative way of thinking.

Behaviourism, as the name suggests, is a branch of research concerned with the scientific study of behaviour. In its classical form (e.g., Watson 1913, Skinner 1986), behaviour is conceptualised as a reflex response that is caused by (or is under the control of) environmental stimuli. Rather than theorising behaviour in terms of agency (free will), behaviourists examine the relation between a stimulus and a response in order to discover laws that allow researchers and practitioners to shape or control the behaviour of others. In the PMLD field behaviourism underpins interventions such as applied behaviour analysis (ABA) whereby researchers attempt to teach children through positive reinforcement. This involves children being 'rewarded' with access to 'preferred stimuli' (e.g., toys, food, music and film) if they behave in a manner that the researcher/practitioner would like to see repeated (Simmons and Watson 2014).

Whilst behaviourism still informs research in the PMLD field, some academics (particularly in the UK) have drawn conceptual resources from cognitivism to develop intervention strategies and assessment tools that address the emerging communication skills and social awareness of children with PMLD (e.g. Goldbart and Ware 2015). The roots of cognitivism can be traced back to the 1950s 'cognitive revolution'. Inspired by technological advances such as the invention of the microprocessor, cognitive scientists began to develop a computational model of the mind that viewed cognition in terms of 'software' that runs on the 'hardware' of the brain. The computational model drew attention to the complex information processing that mediates the relationship between environmental stimulus and behavioural response (Thompson 2007) and in doing so, began to investigate how cognition involves re-presenting the pregiven world symbolically in the mind prior to action (Varela Thompson and Rosch 1991)

Researchers in the PMLD field who have been influenced by cognitivism draw heavily from developmental studies that examine how cognitive representations emerge from birth onwards (e.g., Piaget 1952, Schaffer 1971). This has led to a shift in focus away from experimental approaches that emphasise controlling or shaping children's behaviours, to exploring how practitioners can support the emerging cognitive representations of children who are deemed to be 'stuck' at the preverbal stages of development (the pre-symbolic stages of representation). Hence, the language of 'stimulus' and 'response' has been gradually replaced with a language of 'object permanence' (the ability to represent that

objects continue to exist even when they are out-of-sight) and 'contingency awareness' (the ability to represent cause-effect relations) etc. (Simmons and Watson 2014).

Enactivism: a third way

Enactivism provides an alternative way of thinking about cognition and behaviour that has so far been overlooked by researchers in the PMLD field. Enactivism is a theory of cognition that emphasises its situated and embodied nature, and draws influence from a range of disciplines including cognitive science, biology, phenomenology and Buddhist philosophy. The approach was first popularised by Varela, Thompson and Rosch (1991) in their seminal text *The Embodied Mind: Cognitive Science and Human Experience*. Whilst cognitivism has been celebrated for legitimising the scientific study of mind through the introduction of computational models and associated metaphors (e.g., 'information processing') (Baars 1986), it has been criticised for downplaying the role of the body, or reducing the 'hardware' of cognition to neural processes, thus ignoring the importance of the body in its broadest sense. Furthermore, both scientists and philosophers have questioned the value of studying cognition in artificial contexts (e.g., computer simulations of cognition in laboratories) as this ignores debates about the nature of the world that is supposedly represented, and whether diverse groups experience the world in exactly the same way (Thompson 2007, de Bruin and de Haan 2013). Enactivism emerged out of the growing unrest with cognitivism's narrow focus. Instead of thinking about cognition in terms of building internal representation of a pregiven external world, enactivism examines how cognitive structures emerge through interactions with the world, how these interactions can be socially, historically and culturally contingent, and how the history of our interaction leads to the development of a perceiver-relative world:

> …human cognition is not the grasping of an independent, outside world by a separate mind or self, but instead the bringing forth of or enacting of a dependent world of relevance in and through embodied action. Cognition as the enaction of a world means that cognition has no ground or foundation beyond its own history (Thompson 2016: xvii).

Enactivist accounts of social cognition: participatory sense-making and social needful freedom

The different interpretations of 'cognition' offered by cognitivists and enactivists have implications not just for how we think about individual cognition, but also *social* cognition. Social cognition concerns 'the ability to cognize the mental states of other agents: To understand how they feel, what they think, expect or are up to' (Satne 2021: S509). Discussions of social cognition have been dominated by cognitivism and often framed in terms of 'theory of mind' (Premack and Woodruff 1978), i.e., the capacity to attribute mental states to others, which in turn allows the observer to interpret, predict and explain observed behaviour (Sante 2021). Theory of mind presupposes a passive, third-person observational stance and relies on the competency of the individual observer to impute the mental state of the other. By contrast, enactivists understand social cognition as an intercorporeal process where concrete interaction plays a constitutive role in the

emergence of social awareness. Two theories help illuminate the role of interaction in social cognition: participatory sense-making (Fuchs and De Jaeger 2009) and social needful freedom (Kyselo 2014). Each will be discussed in turn.

Participatory sense-making (Fuchs and De Jaeger 2009) refers to the ways in which two people unconsciously synchronise their behaviours during social interaction. During face-to-face conversations there is a reciprocal, subtle, and rhythmic coordination of micro-behaviours such as changes in posture, eye gaze, hand gestures, facial expressions, vocal intonation, etc., and this on-going exchange of gestures is said to sustain the interaction and allow one person's body to 'read' the other. The coordination is not always symmetrical, however, and there can be changes in who leads the exchange. Fuchs and De Jaegher (2009) use the terms 'coordination to', and 'coordination with' to describe this. 'Coordination to' means that the exchange is one-sided with one person following the lead of another. 'Coordination with' implies co-regulation where two people jointly influence the interaction.

Kyselo's (2014) theory of 'social needful freedom' also illuminates how interaction is at the heart of the enactivist account of social cognition. Needful freedom is a biological term that refers to how an individual organism creates an identity by negotiating an on-going and permanent tension between a need for resources from the world, and a drive to emancipate or free itself from such materials so it can exist as an independent entity (Jonas 1966). Kyselo (2014) applies this concept to help explain how the self emerges from a social context – from 'a sea of social relational, not merely bodily processes' (9). *Social* needful freedom describes how the self depends on social relations, but also has to resist and free itself from such relations to be an individual. Kyselo (2014) uses the term 'distinction' to capture the emancipation of the self from social relations, and 'participation' to denote the opposite side of social needful freedom: the reliance on others. Distinction means that a person experiences herself as emancipated or distinguished from social interactions and relations, leading to a sense of separation and individuality. A range of self-conscious experiences fit Kyselo's (2014) concept of distinction: practising yoga, feeling nervous when presenting in front of an audience, feeling distant from a partner, being proud of an individual achievement, not knowing anybody at a party, and also the joy of being alone after spending a day working with others. By contrast, participation refers to the experience of feeling connected and open to others, our 'readiness to affect and to be affected by the other' (ibid.) Experiential examples include the pull we feel when we are attracted to others, the feeling of letting go while dancing with a partner, being one with the crowd at a concert or sport events, etc. 'Such experiences refer to the basic structure of social autonomy as striving to remain connected and open to particular types of social interactions and relations' (11). The examples above describe experiences where either distinction or participation is more prominent. However, Kyselo (2014) explains, the experience of self as separate from, or willing to engage with others, can precede or follow each other, and even overlap.

What participatory sense-making (Fuchs and De Jaegher 2009) and social needful freedom (Kyselo 2014) suggest then, is that communication and social awareness are embodied and interactive, not passive and observational, that the individual subject emerges through

social interaction and as such is always dependent on others to some degree, that interactions can be understood in terms of power dynamics (i.e., who is taking the lead), and that the more diverse our opportunities to interact, the richer our sense of self and other becomes. These themes will guide discussion of research findings later in the chapter. The next section will report the research aims and findings,

The Study

This chapter reports the findings of a three-year project, funded by the British Academy, which examined how different kinds of school settings (special, mainstream, nursery, primary and secondary) provide alternative social interaction opportunities for children with PMLD. The study explored how children with PMLD respond to different opportunities, and the impact of these opportunities on children's communication skills. Whilst some of the findings have been described elsewhere (e.g., Simmons 2021a, 2021b), this chapter presents the first detailed analysis of data related to early childhood eduation contexts.

Three children from early years settings participated in the study: Emma, Felix and Ruby. Emma attended a reception class in a special school class four days a week, and a reception class in a neighbouring primary school one day a week. There were approximately 15 students in her special school class, and 40 in her mainstream school class. Felix and Ruby attended an integrated nursery five days a week. The nursery was based in a mainstream school and consisted of two classrooms interconnected by a short corridor. One classroom was run by a team who had specialist training, expertise and resources to support a group of eight children who had special educational needs, including children with severe to profound learning difficulties. The other classroom was run by early years staff with more conventional mainstream training, and this team supported approximately 30 children. For most of the day the two classrooms functioned as one continuous space since children were free to move from one class to another, and each day there would be whole class routines, such as register, singing and lunch.

Methodology

Children with PMLD can embody unique or individualized communication repertoires which can be overlooked or misinterpreted by researchers who are unfamiliar with the children they are researching. Given this, this research design drew on participatory and interpretivist approaches in order to support the co-construction of knowledge regarding children's actions in context. This involved working closely with children and school staff whilst also seeking the wisdom of parents. This approach was developed to guide the researcher in developing interpretations of the meaning of participants actions and involved three methods: focus groups and interviews, participatory approaches, and vignette-writing (Simmons and Watson 2015).

Before undertaking fieldwork, the research consulted significant others who knew the participants well and could inform the researcher's initial interpretive lens. This consultation took place via pre-observation focus groups where teaching staff would share insights into each child's communicative abilities, e.g., how each child expressed happiness or distress, how they demonstrated interest and possible examples of communicative intent. For

example, Emma's staff described how she would 'pretend to be asleep' if she did not want to participate (she would close her eyes in order to 'opt out' of social interaction). However, staff also explained that Emma was capable of tilting her head back and opening her eyes slightly to peek at others and observe her surroundings, meaning that she was interested in others but was not ready to interact (something her parents confirmed). These subtle descriptions guided the researcher's understanding during observation.

The researcher's understanding of each child's actions was further developed through participatory observation (by supporting children in class). Participatory observation helped develop rapport with children and also led to informal discussions with staff in real time over the meaning of children's behaviours. Staff would suggest what children were thinking and feeling, and propose interaction strategies. Emma was observed twenty days in total (ten days of observation in a mainstream school and ten days of observation in a special school). Ruby and Felix were observed eight days each in the integrated nursery.

The main source of data consisted of writing live observational fieldnotes or "vignettes". Vignettes are prosaic fieldnotes about children's social interactions. They have a story-like structure and a chronological flow. Vignettes describe the location, time, actor(s), sequence of events etc. and can vary from a few lines of descriptions to several paragraphs. When opportunities emerged for the participants to engage with others, the researcher wrote detailed notes of the observed opportunity as it unfolded, paying particular attention to who initiated the interaction and how, the responses, how the event developed over time, and contextual information such as location (e.g. carpet or corridor), context of the interaction (e.g. planned teaching session or outdoor play), and the materials that were involved (e.g. toys, balls, paintbrushes). The vignettes were shared or discussed with teaching staff who observed or participated in the event, allowing staff to offer their own interpretations. The vignette data was analysed using an inductive thematic approach.

Findings

Emma in the special school

Specialist interactions

Emma experienced very little peer interaction in her special school beyond the occasional greeting in the playground, or during whole class singing routines (e.g., where staff and students would sing good morning songs to each other in the morning). Emma's main communication partners were members of staff who embodied a specialist 'style' of interaction. The interaction was typically timetabled, dyadic (one-to-one), face-to-face, and developmentally functional insofar as staff interacted with Emma to support her emerging social awareness and communication skills. Emma was regularly asked to make a choice between two objects (e.g., drink or food), or ask for more access to an object (e.g., more drink, more music, more time playing with a toy) by looking at the desired object (or a symbolic representation of the object), vocalising and/or reaching out to the object. Staff would begin by asking a question verbally whilst signing, present Emma with the actual objects being offered, or a symbolic representation (a picture of a yogurt, or a spoon to signify a yogurt option). If Emma did not respond as intended, staff would offer a range of

prompts including verbal prompts (repeating the question, perhaps in a more dramatic tone), gestural and visual prompts (pointing at the object or showing a symbolic representation of the object), followed by a physical prompt (e.g., turning Emma's head to face the object, rubbing her arms to arouse her, or place her hand between the two objects on offer). Emma's actions were commented upon and celebrated, including unprompted responses to environmental changes (e.g., if Emma turned to see who was entering the classroom she would be praised: 'Good looking, Emma! You being nosey and checking out who's at the door?').

Care-based interactions

A similar dyadic style was observed during care-based routines (coded as 'care-based pedagogy') whereby Emma was asked to indicate if she wanted more hugs, etc. However, not all dyadic interaction was designed to teach. Sometimes staff worked one-to-one with Emma trying to rouse her by wiggling her arms, talking loudly, and shaking her wheelchair. Emma would sometimes rub her nose and pull her hair over and over, and staff would hold her arms, sing to her, and put splints on her arms to stop what was perceived to be self-harming behaviour. Staff would also perform physiotherapy, stretching her legs and massaging her arms after sitting for a long time in her wheelchair, sometimes talking to her. Emma was largely passive or frustrated during these exchanges.

Emma in the mainstream school

Narrated bodily appropriation

Whilst staff embodied a specialist style of interaction towards Emma in the special school, Emma's TA adapted how she engaged with Emma when supporting her in the mainstream school. The mainstream style, referred to in terms of 'narrated bodily appropriation' still had a normative dimension. However, rather than trying to develop Emma's symbolic communication skills, the TA would move or control Emma's body according to the contextual demands of the situation. For example, during whole class phonics or numeracy, Emma would be sat upright, and the TA would turn her head so that she faced the interactive whiteboard. When the teacher asked a question (e.g., "Who would like to do some painting before lunch?") the TA would raise Emma's hand, and the TA would help Emma write a number on a mini whiteboard using a hand-over-hand technique. This appropriation of Emma's body involved the TA making Emma mimic the actions of children around her, and was often accompanied by narration, e.g., the TA would explain to Emma why she was turning her head, what she had to write on the whiteboard, and that 'Painting would be fun, so let's volunteer'.

Group-based attraction: co-presence and group affect

Emma experienced lots of peer interaction in her foundation class. Whilst interaction in her special school was dyadic in nature and adult-led, interaction between Emma and her mainstream peers was typically group-based or plural. Initially, large groups of up to twelve children would flock towards Emma during playtime, greet her (say hello, hold her hand, wave), before running away again and returning several minutes later. During these

moments, Emma appeared shy and tried to disengage (e.g., by closing her eyes, turning her head away, and – according to her TA – 'pretending to be asleep'). However, Emma soon began to feel more comfortable in the presence of large groups and was increasingly excited when they ran over to greet her, or was sat beside other children during carpet time. Emma's happiness in the presence of groups was evident in her squeals of excitement, smiles. Emma would laugh when children were told off, watch them intensely as they ran around the playground, turn to see groups of children shouting and playing, and observe as children played with toys, painted, or used musical instruments. Emma's TA noticed that her ticks would reduce in intensity whilst she was observing others (e.g., her face rubbing, hair pulling, and teeth grinding would slow or stop). The TA also admitted that Emma's growing interest in other children made it difficult to get her on task (e.g., Emma would not show interest in painting when other children sat near her).

Staff-supported peer interaction

Sustained direct engagement between Emma and children in her mainstream school was initially supported by Emma's TA. The TA would move Emma to spaces where groups were playing or working together (e.g., playing with musical instruments, making jigsaws, painting, playing with toys, dressing up). The TA would celebrate children's activities with Emma ('That's a lovely drawing!' 'Emma likes your costume!'), sometimes raising Emma's hands in the air and cheering when children completed a task (e.g., finished a jigsaw puzzle or finished telling a story). Children would be invited to interact with Emma, and given strategies to follow ('Tell her your name.' 'Could you roll the ball to Emma?' 'Emma likes to have her hands held'. 'Could you read her a story?'). The TA would model how to interact, and help peers 'read' Emma's body language ('She's opening her eyes! She likes that. Look, she can see what you're holding. See her smile? She likes your painting!'). The TA would also provide physical support, such as raising Emma's hand in the air so others could high-five her. The TA answered lots of questions from the children ('Why can't she talk?' 'Where does she live'? 'What's her favourite colour?'). Children who interacted with Emma received praise from the TA. Sometimes the TA would play games with Emma that attracted the attention of others, such as blowing bubbles above Emma which children tried to pop.

Independent peer interaction

As the project progressed, children began to initiate interactions themselves without the support of the TA. Whilst some children mimicked the TA whilst interacting with Emma (e.g., providing hand-on-hand support to draw a picture with a crayon), most interactions appeared to be spontaneous and playful. For example, children would choose to sit next to Emma (e.g., drink milk beside her during snack time, sit on the carpet with her during register). They would greet her without being prompted and say farewell when they moved away. They would perform for her (e.g., by singing, dancing, acting out a scene, pulling funny faces to make her laugh, and dress her in fancy dress clothes, including hats, crowns and feather boas). In addition to such performances, children would interact using everyday classroom objects and toys. For example, they would show her what they have made using Lego or Playdough, give her objects to play with (e.g., put a wooden figure in her hand, or a ball at her feet), show her how objects work (e.g., whoopie cushions), and give her objects

of affection (daisy chains, and party invitations). Children invited Emma to play with them (join them at the water table, computer, or dollhouse), and were given permission by the TA to wheel Emma to where they wanted to play, or push her around the playground. During these exchanges Emma would become more awake, active and alert, and turn to look at children gathered around her and the objects on display. If Emma appeared drowsy the children would still interact with her, e.g., give her playdough to squeeze, or shake her arms). Children's interaction was sometimes intimate, and involved hugging, kissing her on the cheek, stroking her arms and hair, holding her hand, rubbing her shoulders and tucking her in with a blanket if she appeared cold. During these activities Emma would typically smile, make happy vocalisations, and engage in prolonged looking.

Felix and Ruby in the integrated nursery

Whilst Emma was afforded a range of opportunities to engage with peers in her mainstream school, Felix and Ruby experienced very little peer engagement in the integrated nursery, and the majority of data describes Felix/Ruby interacting with members of staff. Interactions with staff resembled a combination of the specialist style and mainstream style described above. Staff typically embodied a dyadic and developmentally-normative approach whilst also utilising narrated bodily appropriation and whole class instruction.

Specialist interactions

Felix's interactions often revolved around intimate and physical exchanges with members of staff on the classroom carpet. Felix sometimes initiated social exchanges. For example, whilst laying on his tummy he would touch staff hands and play with their fingers, climb on staff laps (with staff support), and grasp their ears and nose if he could reach. He would happily lean back on TAs and let them support his weight, and enjoyed staff whispering in his ears. Staff would hold on to Felix so he could sit upright, hug him, rock and bounce him, dance with him, pat his back and shoulders, massage his hands, mimic his actions and playfully move his limbs (e.g., holding his arms out wide like a plane, or move his arms to pretend that he was driving car). These interactions took place several times a day (e.g., on the classroom carpet or in the multisensory room) and were joyous, with Felix smiling, vocalising, making eye contact, and returning the gestures such as hugging staff back and bouncing on their laps. Through these exchanges staff attempted to develop Felix's emerging communication skills. For example, they would stop hugging or bouncing him then ask him to signal that he wanted more hugs/bounces (e.g., they asked him to vocalise, use sign-language, or use his arms to gesture). If Felix did not respond then staff would employ a series of prompts, such as verbally repeating a question whilst simultaneously using sign language ('Does Felix want more?') and use physical prompts (e.g., helping Felix to sign 'more' using a hand-over-hand strategy).

Whilst intimate physical exchanges were unique to Felix, staff often interacted with Ruby through the exchange of objects in order to develop her joint attention skills. To these ends, staff requested that Ruby pass objects to staff (e.g., books, switches, food, flowers), and also invited Ruby to request objects (e.g., toys, spoons, symbols) that were in her line of sight. Staff would sometimes explain why Ruby had to give an object to another person (e.g., it

was another child's turn to play with a toy, or it was time to pack away). Ruby would sometimes reach for objects on the table in front of her which were slightly too far away. These actions were interpreted by staff as 'reach for signal' behaviours, and Ruby was praised by staff whilst also being encouraged to vocalise before they gave her the desired object.

In addition to intimate physical interaction and the exchanging of objects, both Felix and Ruby experienced traditional approaches to teaching symbolic communication, such as using symbol systems and switch technology. Both children were regularly asked to make a choice between two or more objects by looking at, pointing to, or reaching towards a picture of what was desired (e.g., the picture of the banana or the picture of a drink). Sometimes images were attached to switches, and Ruby/Felix were asked to tap a switch to indicate a preference. Ruby would typically hit both switches or grasp all of the pictures at once, whilst Felix would bypass the symbols altogether and reach for the desired object if it was nearby. Such formal communication approaches were used during breaktime and playtime when the classroom was quiet. These kinds of strategies were similar to those used by Emma's staff in the special school.

Narrated bodily appropriation and whole class activities

Similar to Emma's experience of staff support in the mainstream school, both Felix and Ruby were involved in narrated bodily appropriation and whole class activities, often at the same time. For example, children would be encouraged to sit down on the carpet quietly while the teacher explained the day's activities. Felix and Ruby would sit on staff laps, and supported to sit upright by being held by staff. During whole class singing activities, staff would help Ruby and Felix performing the actions to songs, waving their arms in the air, stomping their feet on the floor, and clapping their hands together. Felix found these daily routines particularly exciting - he smiled, squealed, shook with excitement, and sometimes continued to clap after the TA had let go of his hands. He was also encouraged to use switches during morning register but never pressed a switched independently so was helped hand-over-hand. Teaching staff helped Ruby write, draw, cut paper, paint, and colour using hand-over-hand support (e.g., whilst making a Father's Day card or classroom decorations).

Peer interaction

Despite Felix showing interest in peers and vice versa, there is very little evidence to suggest that Felix interacted with his classmates. Felix's teacher agreed that more work was needed to help him make friends, and suggested that other children lacked the confidence and skills to interact. The lack of engagement between Felix and peers may also stem from his limited opportunities to play alongside other children. During breaktime and lunchtime Felix would remain in the classroom with the teaching staff whilst other children went out to play. By contrast, Ruby experienced some (albeit limited) peer interaction opportunities. She had more freedom to crawl around the carpet space during indoor play, and was supported by a TA each breaktime and lunchtime. Occasionally a TA would help Ruby play with others by turning her around to face children close by, and help her via hand-over-hand support (e.g.,

helping her to roll balls or push toy cars to other children, or sign 'hello' to others). Staff would explain the rules of play to Ruby such as the need to take turns ("It's time to pass the ball, Ruby") and asking her not to throw toys. During breaktime and lunchtime a TA would help Ruby outside, and this primarily led to Ruby watching other children run around and play. Ruby appeared to be attuned to children's emotions, smiling and laughing in excitement as children laughed, or frowned and looked concerned when other children were upset. Sometimes children mimicked staff (e.g., repeating staff praise for Ruby – "Fab painting!"). When Ruby was free from staff support other children approached her and initiated interaction by patting her on the head, sitting beside her, smiling at her, holding her hand, and pressing their nose against Ruby's nose. Ruby found these moments exciting and reciprocated by smiling back, making prolonged eye-contact, and grasping the hands of children attempting to hold her hand. On one occasion Ruby reached to and held the hand of one of her classmates. However, these moments were rare, brief and sometimes interrupted by a TA or cut short because the session had ended.

Discussion

Debate about inclusive education for children with PMLD has focused on the extent to which segregated education violates the human rights of children with PMLD, and whether mainstream provision (e.g. its subject-based curriculum) is appropriate for children described (by some) as functioning at the earliest stages of development. The research presented in this chapter suggests that a more nuanced understanding is required. As demonstrated in the findings, mainstream provision (such as the integrated nursery) can appear socially inclusive in the sense that children with PMLD can be observed learning alongside mainstream peers. However, in the case of Felix and Ruby, there was limited peer interaction. Felix's and Ruby's main communication partners in the integrated nursery were members of staff who engaged in a similar style to Emma's special school staff. Emma also experienced limited peer interaction in her special school, and her staff engaged with her via a specialist style defined in this chapter as being functional, developmental, dyadic, and aimed to teach her how to communicate. Hence, despite the heavy presence of mainstream peers in the integrated nursery, concrete social interactions resembled the kind illuminated in the special school.

The data described in the findings section can be theorised with reference to participatory sense-making (Fuchs and De Jaeger 2009). Participatory sense-making draws attention to the implicit, intercorporeal exchanges that accompany intentional face-to-face interaction. It also highlights the ways in which interaction can be shared (actors can coordinate 'with' one another), and how one actor can take the lead whilst the other follows (one actor can coordinate 'to' the other). Emma commonly experienced teaching staff take the lead during social interactions in the special school (coordination 'to'). Staff attempted to develop Emma's ability to coordinate 'with' others by teaching her how to interact through models of symbolic communication (e.g., choose between two photographs through prolonged looking). However, the process of teaching Emma how to coordinate 'with' others resulted in staff dominating the interaction and thus expecting Emma to coordinate 'to' staff requests. Similarly, Ruby and Felix experienced a specialist style of interaction that was

dyadic and developmentally-normative which can be interpreted as Ruby and Felix being asked to coordinate 'to' staff. Arguably, it was Felix's determination to engage in intercorporeal exchanges that allowed him to move away from 'coordination to' towards 'coordination with'. He initiated intercorporeal exchanges, sometimes appeared to lead them (by getting what he wanted – climbing on staff and grabbing their ears and noses), and commanding cuddles through reaching behaviour. Staff were skilled at transforming these situations into 'coordination to' contexts whereby they attempted to teach Felix how to communicate using more conventional symbolic gestures (e.g. to request 'more' through sign language). Whilst Felix did not acquire the skills that staff aimed to teach, the data can be read in terms of an oscillation between Felix and his staff's intentions for interaction (coordination 'with' and coordination 'to'), and this dialogue (or perhaps negotiation) is what allowed Felix to stand out, resist fixed regimes of PMLD communication intervention, and be understood as a communicative agent with his own intentional forms of communication that should be identified and respected.

Furthermore, whilst Felix and Ruby experienced little peer interaction in the integrated nursery, Emma found her mainstream school a space that afforded a range of opportunities to make friends and engage in new forms of social interaction that were rarely observed in the special school. Arguably, her TA in the mainstream school still engaged in a normative style of interaction whereby Emma was expected to coordinate or conform to the expectations of the mainstream environment (writing, watching phonics videos, raising hands to ask questions, etc. during whole class activities). However, the TA was also radical in breaking away from such expectations and supported mainstream peers in developing confidence and awareness regarding how to interact with Emma. This eventually led to a rich social milieu with diverse forms of participatory sensemaking where Emma's social agency emerged in her willingness to be open to peer interaction, her invitations to interact through eye contact, excited screaming and laughter, and her expressions of interest tracking peers. Whilst this may appear mundane and trivial to those who do not know Emma, these pro-social behaviours can be understood as her moving from 'coordination to' peer expectation, to an emerging 'coordination with'. In the field of participatory sense-making, sharing communicative intent is not simply an intellectual act underpinned by symbolic forms of communication, but an intercorporeal, affective, and pre-reflective form of social participation.

The social needful freedom lens (Kyselo 2014) extends analysis further, by providing an account as to why peer interaction emerged in some contexts but not in others. Social needful freedom holds that the self emerges from a sea of social relational processes. 'Distinction' refers to the emancipation of the individual self from social relations. Without distinction the individual subject is at risk of being limited to a basic set of social interactions that are determined by others. However, without 'participation' and being open to others, the individual risks isolation. These classifications (distinction and participation) can help illuminate why Felix and Ruby experienced little peer interaction, whilst Emma experienced rich and diverse peer interaction opportunities in the mainstream. Felix rarely went outside to play during break and lunchtime and his main communication partners were members of staff. Furthermore, whilst Ruby experienced more freedom to engage with peers insofar as

she was present during whole class indoor and outdoor play, she rarely interacted with peers and staff failed to be proactive in supporting peer interaction. Because of a lack of peer participation there was a lack of opportunities for Felix and Ruby to achieve 'distinction' against a peer backdrop.

By contrast, Emma experienced an abundance of participation with mainstream peers during her placement in a reception class. Through the careful guidance of Emma's TA, peers appeared to develop confidence around Emma and approached her more and initiated interaction and play. The TA's lead was central in shaping the early interaction experiences of Emma and her peers, and in doing so created contexts for Emma to not only participate (follow), but also express keenness to be with peers, an openness to their interactions, and excitement in the presence of others. Through the lens of social needful freedom, Emma's peer participation was reliant upon (needful of) the support of the TA, and her distinction as a socially-open and excited peer emerged through this interaction. Furthermore, Emma's mainstream peers did not simply learn interaction strategies from the TA, but also experimented with and deployed a diverse range of alternative communication strategies, defined in terms of plurality, intercorporeality, play, object-sharing or gift-giving, showing off and performing for Emma. These strategies emerged over time and correlated with Emma appearing to come out of her shell and show increasing interest in peers, e.g., demonstrating anticipation such as laughing and squealing with excitement when children approached her, as well as tracking peers in the playground, locating the sound of familiar peer voices, and what the TA felt was a reduction of her ticks (her teeth grinding, hair-pulling, and nose rubbing) and avoidance behaviours (pretending to be asleep). Extending analysis of social needful freedom, it could be argued that the peer group itself moved away from participating in the received wisdom of the TA in order to develop a distinct peer group identity in terms of interaction strategies, which in turn provided a backdrop for Emma to further emerge as a distinct individual.

Conclusion and key points

This chapter presents the first study that examined the experiences of children with PMLD who attended mainstream early childhood education settings. In doing so, it moves beyond abstract discussion by grounding the inclusion debate in the concrete realities of day-to-day mainstream practice. To date, the inclusion debate has been polemic - it revolves around a binary whereby mainstream schools and specials schools are seen as polar opposites that afford alternative kinds of support and resources. The research presented in this chapter suggests that mainstream schools and special schools are not always distinct in terms of the opportunities they provide for children with PMLD. If there can be congruence in practice between mainstream and segregated settings then debates about which setting is most appropriate seems misplaced. As this chapter has highlighted, children with PMLD can be at risk of being socially-isolated from peers in both mainstream schools and special schools. Researchers must highlight the extent to which such isolation takes place, and suggest strategies to support practitioners so they are not just aware that isolation takes place, but have the skills and resources to tackle this. Whilst this chapter does not aim to create a user-guide to inclusion it does suggest that TAs can play a central role by giving children

confidence, advice and strategies, as well create opportunities for groups to come together and learn from each other. This is difficult to achieve in spaces where adults dominate the interaction, and where children are afforded little chance to interact with one another.

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