An inquiry into teachers' implementation of play-based learning aligned approaches within senior primary classes

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ABSTRACT

The national increase in schools implementing play-based learning (PBL) has highlighted a need for Resource Teachers: Learning & Behaviour (RTLB) and others to develop a thorough understanding of the pedagogies that align with PBL to ensure they are well placed to fulfil a key element of their role and support teachers to grow their capability. This inquiry aimed to harness the experience and knowledge of teachers working within PBL settings in a senior primary context. This involved conducting semi-structured interviews with five participating teachers to capture their perceptions on how and why PBL should be successfully delivered for senior primary students, while also identifying any potential enablers and barriers. There were some contrasting views on the specific delivery approaches between the different participants. However, all interviewees shared a belief that there are substantial benefits for older students to learn through PBL, teachers need to be willing and feel safe to relinquish some of their control, and shared values and philosophy need to be established to ensure continuity and authenticity.

KEYWORDS

Play-based learning, resource teachers, pedagogy

Introduction

With the growing evidence base around the benefits of play-based learning (PBL) and with the Ministry of Education endorsing the approach (see Ministry of Education, 2019), there has been an ongoing rise in its popularity across New Zealand schools. This trend can also be seen across the schools within the Tauranga Moana region, resulting in more requests for RTLB support within these PBL spaces. However, my RTLB colleagues and I have recognised the early stages of PBL implementation can create learning environments that are distinctly different for RTLB and teachers to work in. In addition, many of the schools have not yet implemented PBL within their senior primary classrooms, highlighting a potential learning opportunity to support the practice of RTLB and the teachers adopting PBL for senior primary students. Therefore, the purpose of this inquiry was to

examine the implementation of PBL-aligned pedagogies within senior primary classrooms. This involved conducting a critical summary of the literature and gathering teacher perceptions on play-based learning, focusing on what PBL is; why and how it is being implemented within schools; what this implementation might look like for older students; and any potential barriers to its implementation.

Literature review

What is play-based learning (PBL) and why are schools applying it?

Play is a term that is hard to truly define. In a wider context, play is deemed to provide young animals with opportunities to practice key skills to support their survival in adulthood (Gray, 2017). However, the complexity of human lives separates our play from that of animals as the play of young humans will often mirror the dominant activities of the adults around them, which will differ from culture to culture (Gray, 2013). From an Aotearoa perspective, the Ministry of Education (2020) highlights the importance of utilising natural resources gifted by Papatūānuku (Mother Earth) to provide learning through play opportunities for children with an approach that honours Te Ao Māori. The idea of play being a tool for learning was supported by Lev Vygotsky in 1933, who suggested that play is the main source of development in the early years of a child (Vygotsky, 2016).

The view that play is integral to the development of intelligence in children was further advocated by Jean Piaget. His theory of play suggested that as children mature, their environment and play should encourage further cognitive and language development (Piaget, 1962). In addition, Vygotsky (2016) believed that through appropriate adult guidance of children in the zone of proximal development (the need for an individual to receive support from others to increase their development level), a child will achieve the task. These concepts have strongly influenced the development and implementation of PBL within early childhood and school settings.

The idea of adults being directly involved in assisting a child's learning and achievement through play aligns with the guidance from New Zealand's Ministry of Education which states "Teachers can support children in play-based learning by providing an enabling environment and sensitive interaction. There is a role for the teacher to discuss, embed and extend the learning with students" (Ministry of Education, 2019, para. 3). However, this notion is in conflict with many definitions of play which highlight that it must be voluntary, self-chosen and self-directed (Elkind, 2008; Gray, 2017; Piaget, 1962; Vygotsky, 2016). Furthermore, Gray (2017, p. 220) states "if a coach, teacher or anyone other than the players themselves is directing the action, it is not play, or at least not fully play". This view that play is something that is not to be interfered with by adults/teachers is opposed by Pyle and Danniels (2017). They suggest that play should be seen as a chance for children to internalise and explore academic concepts, in which teacher involvement is critical in furthering the children's learning. This potentially highlights an important distinction between PBL and play in its purest form.

Subsequently, PBL may require an approach where teachers provide students with individualised open-ended and purposefully framed opportunities to play so they can respond accordingly and teach within the play (Edwards, 2017). It is also suggested that the adult becomes a 'co-player' within

PBL and takes the children's lead but guides the learning through cultivating ideas and building vocabulary. This notion is further supported by defining PBL as "learning through discovery and exploration; at times, this learning may be mediated through interactions with others, both adults and other children" (Ebbeck & Waniganayaki, 2010, cited in Milne & McLaughlin, 2018, p. 45).

There are several benefits of PBL: the development of student social and emotional skills in addition to improved well-being (Blucher et al., 2018; Gray, 2017; Pyle & Danniels, 2017), raising academic performance, increased enthusiasm, independence and problem solving (Martlew et al., 2011; Pyle & Danniels, 2017; Resnick & Robinson, 2017), and greater inclusiveness (Bell, 2010; Martlew et al., 2011). In addition, Te Whāriki (Ministry of Education, 2017) outlines the cultural importance of learning through play as it supports ākonga (student) empowerment, which aligns with the Māori perspective that the inherited mana all children possess from their tīpuna should be upheld and grown. This extensive list of benefits highlights the potential value of PBL for students but there are many factors that influence these benefits. Therefore, identifying effective implementation is critical to ensure the potential of PBL is accomplished.

Implementing PBL and potential challenges

In an attempt to formulate where teacher involvement fits within play, Briggs and Hansen (2012) created the Play and Power Continuum (Figure 1). The continuum suggests a power balance between the child and adult can be achieved through guided activities, with the power of the child or adult increasing on each corresponding side as you move away from the balanced centre.

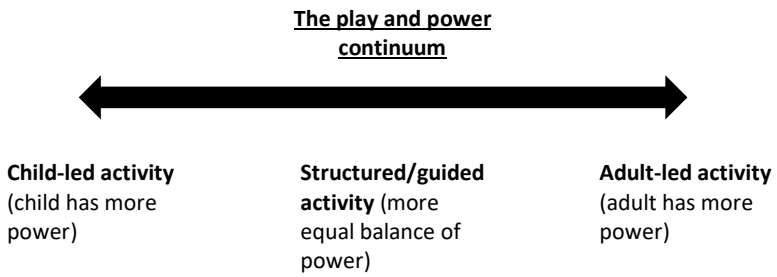

Figure 1. The play and power continuum (Briggs & Hansen, 2012)

The concept of mapping PBL on a continuum is extended further by Pyle and Danniels (2017). Their model, the Continuum of Play-based Learning (Figure 2), maintains the premise that power moves across the continuum depending on the nature of the activity. However, the Continuum of PBL identifies five types of play that are compatible with the shifting levels of power along the continuum. This model is further endorsed by Paterson (2020), who proposes that the optimal learning environment may be one where there is a range of play-based activities which are both teacher-directed and child-directed.

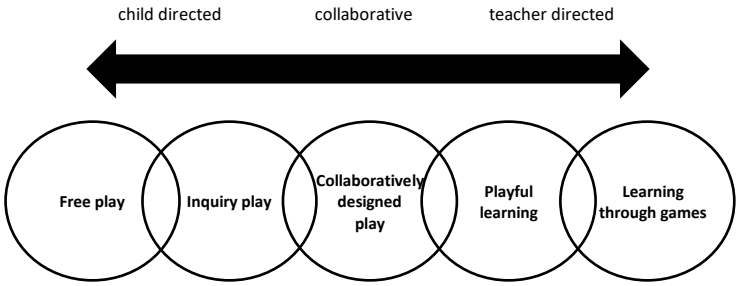

Figure 2. Continuum of play-based learning (Pyle & Danniels, 2017)

Another approach to PBL is offered by Elkind (2008), who identifies three basic drives that power human thought and action. These are play, love and work. It is suggested that these three drives function most effectively when they operate together. However, the industrialised and standardised structure of education has traditionally separated work and play. This has resulted in significant challenges for teachers to both engage students while also ensuring they make progress against a set of curricula and assessment goals (Van Oers, 2015). Furthermore, Pyle and Danniels (2017, p. 277), state "the perspective of play and learning as distinct constructs in the classroom setting, compounds the challenges faced by teachers who report conflicts between mandated curricula and preferred instructional practices".

A potential consequence of this professional dilemma facing teachers is that while students are involved in free play, too often teachers "continue to engage in instructional teaching to small groups rather than adopting intentional approaches to play in school" (Aiono et al., 2019, p. 60), preventing teachers from undertaking some of the critical components of PBL. Furthermore, a concern raised by Gray (2017) suggests when the focus of learning is outcomes and results, learners will often seek the shortest and easiest path to achieve the intended outcomes. Alternatively, when play becomes the focus, the means is the driver so learners are more absorbed within the learning process. In addition, Pyle and Danniels (2017) identify there is significant uncertainty by teachers as to when they should intervene in play, which often results in many teachers almost exclusively offering only free play. Therefore, even those teachers who recognise the multi-layered roles of the adult within PBL face difficulties knowing how to execute them, which further highlights the challenges for teachers that have not yet reached the required level of understanding about PBL. However, it is worth noting that Aiono et al. (2019) suggest these issues are often not due to teachers undervaluing the benefits of PBL, but rather are a result of a limited understanding of how play and intentional teaching can be used together.

Understanding the role of the teacher in PBL is pivotal for ensuring its effectiveness. Intentional teaching has been proposed as a way to support teachers in delivering this approach successfully (Milne & McLaughlin, 2018). There are four areas for teachers to consider when adopting intentional teaching practices. These include establishing clear and informed learning goals, providing authentic contexts, applying effective and appropriate teaching strategies, and undertaking continual assessment of student learning (Epstein, 2014). The use of intentional teaching strategies within PBL is further endorsed by Blucher et al. (2018, p. 57), who state "an understanding of intentional

teaching in supporting and enhancing learning within play experiences appears critical to successful implementation". However, intentional teaching where teachers and learners are engaged in "shared thinking and problem solving to build learning outcomes" (Edwards, 2017), may not be a practice familiar to some teachers, generating further challenges when delivering PBL.

To alleviate the pressure on teachers facing the challenge of implementing PBL, it's important to recognise that play and teaching should not be seen as opposing one another. Instead, teachers should look to teach within the play through adopting varying levels of activity structure which are informed by their personalised knowledge of their learners (Edwards, 2017). This approach has been present within early childhood education (ECE) for a long time. In fact, Blucher et al. (2018) recommend that schools introducing PBL investigate and adopt effective ECE pedagogies to support implementation and provide greater continuity for students transitioning into school. However, PBL should not be considered as merely a vehicle to support students' transition to formal learning, as play is relevant throughout life (Briggs & Hansen, 2012). These considerations indicate both the need for PBL to be delivered beyond the junior primary classrooms but also the complexity of its implementation from early childhood to more formal settings. One aspect of this is highlighted by Martlew et al. (2011), who identify that many schools do not fully recognise the practical pedagogical realities of larger class sizes and higher adult-to-student ratios within a school setting in comparison to an ECE environment.

The critical element of the teacher playing an active and responsive role within PBL is further advocated by Van Oers and Duijkers (2013), suggesting a PBL curriculum should be constructed by the teacher in close interaction with the students, informed by their interests, the mandatory goals set by the school, and the teacher's desired outcomes for their students. In addition, Milne and McLaughlin (2018) endorse the importance of teachers knowing the specific learning needs of their students, allowing them to 'purposefully partner' with their learners in play, while being guided by the New Zealand Curriculum to formulate goals with their students. These two theories both recognise the importance of empowering the students and the teacher through PBL. However, the unfamiliarity of this approach for many teachers means becoming proficient practitioners of PBL requires longer periods of teacher learning than that of more traditional pedagogies and ongoing support through sharing practice with colleagues, professional education, and access to exemplary pedagogy (Van Oers & Duijkers, 2013). Subsequently, finding this exemplary practice may prove difficult and if it is sourced, it could potentially be within a context significantly different from that of the school undertaking the PBL implementation.

Gray and Robinson (2015, 5:43), state "play isn't something you do when the work stops, it's something that increases your capacity to work". This quote aligns with Elkind's (2008) theory on play, love and work. The influence on how these terms are used within the classroom is outlined by Claxton (2013), who refers to a study which discovered that for every one hundred times teachers used one or other of the words 'learning' or 'work' to their students, 98 were 'work'. This reinforces a message of drudgery and a focus on product rather than process. However, it could also be suggested that this study further highlights the challenges teachers face in shifting their perceptions and philosophy on learning when adopting PBL.

A study conducted by Blucher et al. (2018) identified that teachers could be significantly supported to run and fully embed PBL if they felt their school leadership team prioritised the use of a child-centred approach. However, this requires the leaders to have a solid understanding of PBL and the associated challenges for teachers in implementing it. Another important consideration that could be reinforced by the school leadership is the importance of additional resourcing and training for teachers to ensure the responsiveness and interactive nature of PBL is achieved (Martlew et al., 2011). Claxton (2013) outlines the benefit of teachers sharing and modelling their own open-ended and critical learning projects to support students in building skills associated with PBL. This theory may be merited but could present further challenges for teachers that are not familiar with modelling in this way and could require additional professional support in developing this practice. Overall, for these considerations to achieve the desired impacts, a shared philosophy between key stakeholders (teachers, school leaders and parents) on the importance of play in learning will need to be established.

Thus, the research above can be used to establish a definition of PBL:

Play-based learning (PBL) is an inclusive approach to learning that provides all students with opportunities to agentically direct and engage in their learning through play and exploration, while also being supported by their teachers through intentional teaching and scaffolding the processes of inquiry, curiosity, and reflection.

PBL for older learners

Much of the research around PBL has been conducted within early childhood and junior primary settings and there appears to be a lack of specific evidence around its implementation and impacts in a senior primary and secondary context. However, it could be argued that the research and associated concepts developed from the junior primary and early childhood settings can potentially be applied to the classrooms of older students. In fact, there are approaches being delivered to senior primary and secondary students which do align with many of the characteristics of PBL but are given different names including inquiry-based learning, constructivist learning, and project-based learning.

Inquiry-based learning

Inquiry-based learning is one of these approaches as it places the student at the centre, actively engages them, and emphasises their role in the learning process (Ministry of Education, n.d.b). The benefits of inquiry-based learning are highlighted by Dobber et al. (2017), noting it as more effective than traditional, teacher-directed learning as it leads to increased critical thinking skills, engagement and higher levels of motivation. Inquiry-based learning is a significant part of the New Zealand Curriculum so is adopted across both junior and senior primary classrooms. However, the richness and depth of its delivery is questioned by Bolstad et al. (2012), who acknowledge that students are participating in real-world projects or engaging with authentic contexts. Therefore, the nature of the learning approach, the time frames and the curriculum content covered have the potential to still be largely determined by the teacher, which outlines the role of the teacher as a critical component as also identified in PBL. Furthermore, inquiry-based learning is also referred to as a continuum which is

influenced by the amount of teacher guidance or student control (Fitzgerald et al., 2020), highlighting more parallels and shared tensions with PBL.

The close compatibility between inquiry-based learning and PBL is further highlighted by Resnick and Robinson (2017), who endorse an inquiry-based approach and advocate the use of a 'Creative Learning Spiral' (Figure 3). They regard this as the 'engine of creative thinking', allowing students to develop and refine their abilities as creative thinkers. However, this is not how the vast majority of students learn beyond ECE and junior primary, where the focus is often results and content driven. Nevertheless, Resnick and Robinson (2017) oppose this and highlight the learning benefits for their university students within the Media Lab programme at the Massachusetts Institute of Technology (MIT), where they have adopted an inquiry-based learning approach. This reinforces the premise that students of all ages benefit from some of the pedagogies that underpin PBL.

Figure 3. Continuum of creative learning spiral (Resnick & Robinson, 2017)

Constructivist learning

Another approach which encompasses many of the characteristics of PBL and fits within the 'continuum of play' is constructivist learning theory. The premise of this theory is that learning takes place through the process in which knowledge is built upon prior knowledge so learning is constructed from experiences and ideas (Krahenbuhl, 2016). The concept that a constructivist classroom keeps students actively engaged through discovery, inquiry and collaboration is well recognised. However, it is important for educators to not misinterpret constructivist pedagogy as merely making learning fun and active, by implementing an approach where students are observably engaged and receiving information.

This type of approach, along with other student-directed learning pedagogies, are challenged by Kirschner et al. (2006), who argue that guided instruction is far more successful for students' learning. This notion is further supported by Willingham (2021), highlighting that these approaches to learning can result in many misconceptions being forged by students working without teacher guidance and once these are learnt they are hard to unlearn. However, the importance of striking the correct balance between student-directed learning and teacher instruction should be very carefully and intentionally considered by the teacher, to limit these potential concerns (Krahenbuhl, 2016).

This key role of the teacher correlates with what has been identified within PBL, further reinforcing how these approaches are aligned.

Project-based learning

A further approach which aligns with PBL is project-based learning, where "learners should engage in an extended process of asking questions, finding resources, and applying information. Learners should have (some) control over the questions that are asked, the resources that are used, and the outcomes that are developed as a result" (Ministry of Education, n.d.a, section 3.3). This encourages students to be active learners through pursuing their interests, providing a real-world context to their learning, while also providing intrinsic motivation and increased engagement. An additional benefit of this type of learning is that it enables students to further develop critical thinking and problem-solving skills which are more transferable to their future needs than traditional content-focused approaches (Bell, 2010). These identified advantages align closely with a PBL approach.

The importance of developing the skills associated with project-based learning is also endorsed by Thomas and Brown (2012), who raise the idea that too much focus within classrooms is given to answers rather than developing questions. This premise suggests there should be a reversal, where questions are posed and the answers can help generate better questions for further learning. By adopting this approach, students are able to develop their imagination, creativity and critical thinking. This notion is supported by Claxton (2013, p. 155), who states "students need to become good learners, not secure knowers".

Holloway (2018) suggests that providing students with more opportunities to interact with problems or questions kinesthetically can increase their ability to grasp more abstract concepts. Nevertheless, the success of these ideas rely heavily on the students having previously developed a set of skills enabling them to successfully tackle the provocations and problems presented to them. Subsequently, it is essential for students to be supported by their teachers to build curiosity, resilience and independence by designing an overarching culture within the classroom that fosters and cultivates these dispositions (Claxton, 2018).

Other factors for consideration

The implementation of a PBL or PBL-aligned approach is both questioned and challenged by a recognised lack of appropriate professional development provided to teachers (Aiono et al., 2019; Blucher et al., 2018; Martlew et al., 2011; Van Oers & Duijkers, 2013). This research suggests that these concerns are not due to a lack of desire and ambition from teachers but are perhaps rather influenced by limited knowledge and experience. When implementing PBL, teachers are given a directive to create learning environments which promote student agency, intrinsic motivation, engagement, critical thinking and collaboration (Briggs & Hansen, 2012; Elkind, 2008; Gray, 2017). However, many teachers may not have experienced this educational approach themselves as students so could be developing their proficiency in many of these same skills as adults/teachers. Subsequently, this can present them with significant challenges and require them to rethink their role as teachers and their pedagogical practice (Claxton, 2013; Martlew et al., 2011). This may be particularly difficult for practitioners within senior primary classrooms such as intermediate schools, where their students may have varying experiences of PBL-aligned approaches from their previous

school. The idea that teachers' personal experiences can limit changes in practice is outlined by Mezirow (2000), who identifies that 'transformative learning' among adults is harder to achieve due to the influence of in-grained assumptions, beliefs, and values. This notion is supported by Cranton (2016), who also proposes that these habitual features in adults can be adjusted by following a process of critical examination and reflection.

In addition, the recognised importance of developing the attributes associated with PBL for students of all ages are almost in conflict with the ongoing priority of evidencing and assessing student progress against more traditional parameters. This conflict appears to magnify as students get older, potentially leaving teachers confused and confronted with a pedagogical and professional dilemma. However, senior leadership within schools can play a critical role in mitigating these challenges.

Methodology

Inquiry question

The primary goal of this inquiry was to collect and consider the perceptions of teachers regarding the implementation of learning through play within senior primary classrooms. This research was conducted in two contrasting local primary schools where PBL had been embedded for several years. Therefore, the participating teachers were experienced in the delivery of PBL, allowing informed and professionally referenced perspectives to be collected and develop an understanding of how and why PBL can be delivered to senior primary students.

The question for this inquiry was:

"What are senior primary teachers' perceptions of successful ways of implementing pedagogy that align with a play-based learning approach?"

Inquiry context

The two schools that participated were similar in size with between 400 and 500 students. They were also following an Innovative Learning Environment approach with a philosophy of collaborative teaching. However, the demography of the schools was significantly different. School A was decile 2 with a roll ethnicity composition of 39% NZ European/Pākehā, 31% Māori, 18% Asian, 11% Pasifika and 1% other. School B was decile 9 with a roll ethnicity composition of 73% NZ European/Pākehā, 11% Māori, 8% Asian, 1% Pasifika and 7% Other. Furthermore, my professional experience of and exposure to the two schools was different as I had previously undertaken RTLB work within one school, but I had never worked in the other.

Data collection

The data collected for this inquiry was qualitative as the focus was to obtain teacher perceptions on PBL implementation. Subsequently, a qualitative approach was followed, enabling me to develop an increased understanding of the thoughts and experiences of the participating teachers. This approach also allowed me to gather in-depth insights into the implementation of PBL for older

students. The research tool selected for this inquiry was to conduct semi-structured interviews. These interviews covered questions on the benefits, characteristics, challenges, and supports for implementing PBL for senior primary students.

To access and select the interview participants, I made the initial contact to each of the two principals with a request to approach any appropriate teachers within their schools. This process was supported with the creation and distribution of a detailed information sheet outlining my inquiry topic and the commitment requirements for potential interviewees. The teachers that voluntarily participated in the interviews were all fully qualified and had a mixed range of experience in PBL. In total five teachers were interviewed, three from School A and two from School B.

Data analysis

The processing and analysis of the data involved the production of transcripts from the interview recordings, using a programme called Otter AI. This significantly reduced the time spent on this process but did require considerable editing and amendments as the auto transcript feature resulted in many errors. Once the transcripts were corrected and completed, they were read and reread to find the information that was most relevant to the inquiry question, using techniques such as coding (generating labels to highlight the key points from the data set), highlighting and rearranging. This process enabled the main themes of the inquiry to be determined and connections to the literature identified, informing the overall findings and conclusions. The advantage of following a thematic analysis approach for this inquiry was that it assisted me in finding the views, opinions, knowledge and experiences of the interviewees so that their perceptions of PBL implementation could be established (Braun & Clarke, 2006).

Ethical considerations

During the planning phase of the inquiry a detailed evaluation of the ethical considerations was conducted to ensure the research project complied with key ethical principles, including informed consent, confidentiality, and right of withdrawal. This process supported the completion of an ethical approval request in accordance with Massey University's Code of Ethical Conduct (2017) requirements. The outcome of this submission was classified as low-risk, allowing the inquiry and associated data collection to be undertaken.

Results

The findings of this inquiry enabled several key themes to be identified in relation to the successful implementation of PBL in senior primary classrooms. These themes and the corresponding perceptions gathered from the teachers are described below.

Teachers' perceptions of why PBL pedagogies should be delivered to senior primary students

All interviewees identified that PBL-aligned approaches were beneficial for older students. The reasons and comments that were shared by the participants ranged from increased student

engagement and agency to social and emotional development. Some of the teachers mentioned their experiences of seeing older students excited about their learning and actively seeking opportunities to explore and extend their understanding through play and self-directed activities. The importance of transitioning and evolving students' play as they progress through school was highlighted by one interviewee who stated "we shouldn't be limiting play to students 7 and under. This creates a sudden cliff for students which is hard for them to climb" (Teacher E).

Another element that all the interviewees identified as beneficial for themselves as teachers was by following PBL pedagogy, they were able to build stronger relationships with their students. They felt this supported them to be more responsive to the individual needs and interests of their students.

However, the key factor that appeared to underpin the teachers' perception of why PBL should be implemented in senior primary classroom was inclusion. It allowed for a strengths-based approach to learning and enabled "students to experience a sense of success and empowerment in school when they may find traditional subjects and learning difficult" (Teacher C). This was true for Teacher D as well:

> Some of our Y5 students come to us feeling 'dumb' after having a lack of success from reading, writing and maths so we've almost had to beat the traditional model out of them at the start of the year. By Term 3 they are the first kids in class every morning ready to go and are also more engaged in their learning of reading writing and maths.

What teachers believe PBL should look like in a senior primary classroom

There was an overarching acceptance from the participants that the delivery and approach to PBL should be different as students progress through school and the types of skills to target and develop change. However, the inclusiveness and responsiveness of PBL again underpinned many of these comments, identifying that learning can occur "in line with the child's development and curriculum skills" (Teacher B) and "you need to respond to their development needs" (Teacher C).

In addition, this theme highlighted some contrasting opinions, with some endorsing the idea that "play needs to be preserved so that you don't fall into the inquiry learning approach which is quite different to play" (Teacher C), while another believed that it is through "purposeful projects that older students should be learning through play" (Teacher A).

The role of the teacher within play was also mentioned by all the interviewees but with some different perspectives shared. Some of the teachers believed that to be authentic to PBL the students "need to drive their own learning through their passions and interests, whereas project-based learning can lead to the teacher taking too much control and choice away from the students" (Teacher D). However, another teacher felt that purposeful project-based learning was the best approach for senior primary students but "it is the teacher's role to develop the students' ability to find the purpose for themselves" (Teacher A). Despite this difference of opinion, all the teachers believed it was important for senior primary students to be given opportunities to participate in free play and that teachers should spend time observing and noticing students during play.

Teachers' perceived barriers and challenges to implementing PBL to senior primary students

There was a consensus across the teachers that there are several barriers and challenges in implementing PBL that they have all experienced. One of these was the difficultly for teachers not feeling in control when following a PBL approach in their classrooms. This factor related to other challenges that were shared by all interviewees, including shifting from a traditional educational approach and philosophy, and finding the time required to implement play authentically. Some of the participants elaborated on these barriers further and raised concerns over many teachers' perceptions of limiting play to "being something small children do" (Teacher B), that there was a "false dichotomy of either play or academics, and they can't exist in the same space" (Teacher D) because "not all kaiako believe in the benefits of PBL" (Teacher C). In addition, some of the interviewees identified that these misconceptions could also create an "ongoing battle with the parents" (Teacher D), especially those with students in senior primary classes. The difficulty of "producing traditional numeric evidence of student progress" (Teacher E) was also identified as a barrier to providing those that are sceptical of PBL with enough justification for its implementation. Furthermore, some of the participants also identified challenges with the resourcing of PBL, as "getting hold of loose parts and things for students to explore" (Teacher B) can be very time consuming and is often reliant on community support to donate materials.

Teachers' perceptions of what has assisted them in implementing PBL

Interviewees emphasised the importance of accessing professional development to improve their knowledge of implementing PBL. However, it was suggested by several of the participants that "building an increased understanding of the broader curriculum" (Teacher D) beyond literacy and numeracy would enhance the confidence of teachers delivering PBL. The benefit of visiting other schools delivering PBL to help gain a greater understanding of what it can look like in the classroom and some of the approaches to support its implementation was also highlighted by all participants. However, one interviewee identified a lack of exposure to "observing play in senior classes" (Teacher A) during these school visits and another teacher highlighted that the "different context of their school will make it look different" (Teacher E).

Several of the teachers also mentioned the importance of recognising that the shift in practice can take time, so it was important to follow a "less is more approach and don't try too much too quickly" (Teacher C). The design and application of a play rubric had assisted the teachers (in School A) to plan and track student progress within PBL. In addition, to support the implementation and acceptance of PBL within the context of senior primary classrooms, both schools renamed the teaching and learning approach to Student Directed Learning (School A) and Experiential Learning (School B). However, according to one of the interviewees this name change was not enough to adjust some misconceptions from staff and parents. Subsequently, the most constructive and liberating change for this teacher's implementation of PBL was to "move back to teaching Year 1 and Year 2" (Teacher D), where there is greater acceptance of PBL strategies.

In relation to the previously identified challenge of resourcing PBL, the teachers from School A all highlighted the benefit of the school establishing a specific PBL budget for each team of teachers.

This supported the collaborative teams of teachers to "plan for provocations and invitations so that students can build on prior knowledge, learn new skills or be exposed to something completely new" (Teacher C).

Teachers' perceptions of how the implementation of PBL can be further supported and improved in senior primary classrooms

There was an overall consensus that there was an ongoing need for accessing regular professional development and visits to other schools to further support the implementation of PBL. This was seen as important for all teachers but particularly for new members of staff who need to "feel part of the play journey" (Teacher B) being undertaken by the school.

However, there were numerous comments throughout the majority of the interviews which highlighted another key aspect that needed to be addressed for significant change in practice and the successful implementation of PBL to be achieved. A shared philosophy of PBL should be developed so that there is a "deep understanding of the why and value of play" (Teacher D), where teachers are both given permission to experiment and try new things but also accept that there will be failures along the way. Therefore without establishing this bedrock understanding of play and "creating a give-it-a-go attitude across the school, many of the teachers will be too overwhelmed by the scale of change needed" (Teacher E) to implement PBL successfully.

General discussion of findings

This inquiry intended to establish the key considerations and factors that teachers believe are instrumental in successfully implementing approaches that align with PBL within senior primary classrooms. The importance and value of play for senior students underpinned many of the interview discussions, so it was evident that the participants were all advocates for PBL. This aligns with Aiono et al.'s (2019) view that teachers delivering PBL do not undervalue its benefits. Throughout the interview conversations, inclusion and relationships shone through as both benefits of and requirements for successful implementation. Many of the teachers' responses echoed a number of the advantages identified by Bell (2010), Blucher et al. (2018), Gray (2017), Martlew et al. (2011), Pyle and Danniels (2017), and Resnick and Robinson (2017), including the development of student social and emotional skills in addition to improved well-being, increased enthusiasm, independence, problem solving and greater inclusiveness.

This shared understanding and endorsement of PBL for senior primary students corroborates the notion that play is relevant for learning throughout life (Briggs & Hanson, 2012) and is encouraging for its implementation. However, beyond these common components, there were some conflicting perceptions on how best to deliver PBL within senior primary classrooms. The opinions of project-based learning and whether it aligns with a PBL approach is a topic that stimulated different views across the participating teachers. These varying beliefs ranged from seeing purposeful project-based learning as the evolved form of PBL for older students, to others perceiving it as something entirely different from PBL. Another interesting element was that some of these contrasting views were

present among participants from the same school. This potentially reinforces the pertinence of other comments that highlighted the importance of creating a school-wide shared philosophy on PBL to ensure greater continuity in its delivery.

Furthermore, establishing consistency and developing pedagogical change across a school was perceived by several of the interviewees as being significantly influenced by the middle management team within a school. This suggests that if leaders do not have a thorough understanding or unified philosophy of PBL then overall buy-in and successful implementation will be impeded. This premise was extended further by many of the participants, who believed teachers also need to feel professionally safe and free to experiment with PBL-aligned approaches while developing their practice in this area, supporting the notion that becoming proficient practitioners of PBL requires ongoing support from colleagues and significant teacher learning (Van Oers & Duijkers, 2013).

Another strong message that came through from all participants was the significance of student choice and agency in ensuring the authentic and successful implementation of PBL in senior primary classrooms. In addition, the acknowledgement that the level of teacher control and direction can shift as and when the teacher deems it necessary, aligns with the premise that PBL falls across a continuum of student/teacher control (Briggs & Hanson, 2012; Pyle & Danniels, 2017). However, the uncertainty created by this approach compared to traditional educational structures also appeared to cause fear and hesitancy among teachers, resulting in a professional paradox. This further supports the shared suggestion that there is a need to cultivate a whole-school buy-in to implementing PBL, where the value is understood and the gradual but progressive growth in its delivery is realised by all so that the fear and hesitancy turns to excitement and enthusiasm.

Conclusions and implications

The findings from this inquiry identified a number of contributing factors that are critical for the successful implementation of PBL-aligned pedagogies within senior primary classrooms. These include recognising and understanding the value of PBL-aligned pedagogies for all students; teachers feeling supported and given license to experiment and embrace the relinquishing of control to empower students to direct their own learning; for teachers to utilise observations of play so they can be highly responsive to the interests and developmental needs of their students; an understanding that the teacher's role shifts based on these developmental needs and the type of learning activity; and the overarching influence of establishing a shared philosophy of learning through play across a school.

Much of this learning will help to inform my practice as an RTLB moving forward. However, this evolved practice and understanding will be applied across a range of settings and scales. From a broader perspective, I will seek opportunities to share this learning with my RTLB colleagues, SENCo across the region, and to whole-school staff. My role will also involve working alongside individual or teams of teachers implementing PBL-aligned pedagogies. Therefore, the approach I take will need to respond to the specific needs and requirements of the situation I am working within. This may at times require support from some of my colleagues to ensure the practices are culturally affirming

and uphold the values of Te Ao Māori. The results of the inquiry suggest that an initial focus on establishing what the shared perspectives and values in relation to PBL are among the teachers, is required to ensure any potential intervention and associated actions are successful and sustained.

How to mitigate any possible inconsistency in PBL philosophy presents a significant challenge for many teachers, schools and RTLB, as a key barrier to the successful implementation of PBL appears to be the juxtaposition between it and more traditional approaches to teaching and learning. Therefore, as suggested by Mezirow (2000), tackling the habitual and in-grained beliefs associated with traditional pedagogies held by many teachers, school leaders, and parents needs to be addressed before the necessary transformative learning for consistent and successful implementation of PBL-aligned pedagogies.

This critical component from the inquiry has raised an area for growth and further learning. Overall, the findings of this inquiry have generated many insights into how PBL-aligned approaches can be implemented in senior primary classrooms. However, without a unified understanding and philosophy being established, the successful implementation of PBL in within these spaces becomes isolated to small silos within schools. Subsequently, I feel it is important to further investigate possible approaches to support this transformative learning process so that PBL becomes fully embedded. One potential method could be to align the critical examination and reflection process as outlined by Cranton (2016) with the Continuum of Play-based Learning (Pyle & Danniels, 2017). This would enable teachers to experiment and move their PBL practice along the continuum at their own pace, where they can gradually relinquish control while also following a process of critical reflection to support and direct their own learning and growth in implementing PBL.

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