

Supporting Teachers to Successfully Implement a Play-based Learning Approach

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ABSTRACT

This research paper focuses on the successful implementation of play-based learning (PBL) environments within the New Zealand mainstream primary school sector. In particular, the focus is on the role of Resource Teachers: Learning and Behaviour (RTLB) in supporting the implementation of PBL within the junior classes of Year 0 to Year 2. A review of the literature on PBL explored the pedagogy of play and the importance of the teacher within this learning environment. Through an anonymous online questionnaire, teachers of students in Years 0 to 2 who are currently implementing PBL, shared their experiences of the barriers and enablers towards the successful implementation of PBL. The research results highlighted that there is a need for sustained professional development on the implementation of PBL and the establishment of a mentoring partnership to further develop the competence and confidence of teachers working within a PBL environment.

Research Paper

Key words:

play-based learning (PBL), Resource Teachers: Learning and Behaviour (RTLB), teacher support

INTRODUCTION

My role as an RTLB is to support students with learning and/or behaviour needs through providing advice and guidance, differentiated programmes and networks of support for school and family. The following theorists are embedded within my teacher practice and influence my teaching methods: Piaget - individualised learning experiences (Cullen, 2001); Vygotsky - social engagement and supporting the child to reach their full potential by providing work which is just above their individual capability

(Cullen, 2001); Bronfenbrenner - child-centred learning approach (Goodley & Runswick-Cole, 2010); development of co-constructed teaching and that there is not one-sided transference of knowledge (Brock, Dodds, Jarvis & Olusoga, 2009); Bandura - explicit and systematic modelling to ensure student success (Bandura, 1999) and Skinner who promotes reflecting on the antecedent prior to behaviour and on the consequence of the action to present all tasks in steps of increasing difficulty to promote growth (Ulman, 1998); and the use of praise of children to bring about desired behaviours (Stipek, 2002).

The aim of this paper was to identify the enablers and barriers pertaining to the successful implementation of PBL within the primary school sector, with a key focus on the potential role of RTLB to support the implementation of PBL within their liaison schools.

Background to the Role of RTLB

The role of a Resource Teacher: Learning and Behaviour (RTLB) can be defined as, “working with teachers and schools to find solutions that support students with substantial barriers to learning, and build teacher and school inclusive practice capability” (Ministry of Education, 2016, p. 5). RTLB work through a collaborative approach with the student, their teacher/s and their family. A key aspect of RTLB support within schools is that of the RTLB liaison¹ role. A RTLB liaison is allocated to each school to provide support to the school’s Special Educational Needs Co-ordinator (SENCO)² and the wider teaching staff. Within this pivotal role, RTLB liaisons provide professional advice and guidance to support the modification of the learning environment to best accommodate the students’ needs (Education Review Office, 2004).

¹ RTLB liaison role is part of the RTLB service which requires RTLB to develop professional relationships, provide ongoing support and to maintain regular communication with schools (ERO, 2016).

² (SENCO) teachers work with teachers, school management and families to identify and organise support for students with additional education needs (Ministry of Education, 2015).

The professional advice and guidance by RTLB liaisons can also be given at the systems-level within the school structure, which includes focusing on aspects such as class size, identification of students requiring support, teacher experience and areas of development. Therefore, utilising evidence-based research to ensure that the intervention practice strategies which are recommended and implemented within the school system is a crucial role within the RTLB scope of support (Ministry of Education, 2016).

Evidence-based research which combines the three lenses of research/tika, practitioner knowledge/pono and family values/aroha (Bourke, Holden & Curzon, 2005; Macfarlane, 2012) has become more widely used within the educational sector. RTLB explore intervention models through these three circles of evidence to ensure they are implementing intervention practices which have a solid research-base. By providing professional development within schools, RTLB assist and support teachers to become informed practitioners through reflective practice. This, in turn, promotes decisions based on the best-evidence as teachers have a pivotal role in student outcomes (Alton-Lee, 2003). Therefore, both RTLB and teachers have a commitment to demonstrate the synthesis of best-evidence within their practice (Ministry of Education, 2018).

By developing evidence-based practice as outlined in the RTLB Professional Practice Toolkit (Ministry of Education, 2016), RTLB are ensuring that their advice and guidance is grounded in research and reflective of their practitioner knowledge (Macfarlane, 2012). The Ministry of Education *Best Evidence Synthesis Programme (BES)* is “a collaborative knowledge building strategy designed to strengthen the evidence base that informs education policy and practice in New Zealand” (Ministry of Education, 2018, p. 1). All teachers are expected to be utilising this resource within their practice. However, anecdotal evidence suggests time constraints and workload issues can restrict a teacher’s ability to engage with new learning. By working collaboratively, RTLB can support teachers to enhance their understanding and implementation of evidence-based practices which will have a positive and ongoing impact by raising teacher capability through a trusting and respectful mentoring partnership (Korthagen, 2004).

The foundation of RTLB practice then provides a platform for the development of teacher knowledge and skills which has a long-term effect and raises the capability of the teacher and the school (Garet, Porter, Desimone, Birman & Yoon, 2001; Learning Forward, 2011; Zepeda, 2013). Bruns, Costa and Cunha (2018) state that “the quality of teachers’ classroom practice,

as measured through classroom observations, is important for student learning and other key outcomes, such as development of students’ socio-economical skills” (p. 214). RTLB use several methods of providing support to classroom teachers. These methods include mentoring, modelling and observational feedback. “Like students, teachers want supervisors who are supportive of the work they do and the challenges they face; however, teachers need and want leaders who are insistent about leading with a vision focused on learning and development” (Zepeda, 2013, p. 3). By developing a respectful and supportive relationship with a teacher, the RTLB becomes a mentor to guide teacher practice in order to influence a positive change in the classroom environment.

CONTEXT

Within my RTLB role, I am currently working in primary schools to provide support for students with learning and/or behaviour difficulties. This support has the student at the centre with support layered around them. An area of new development is the implementation of PBL within the junior classrooms.

This new pedagogy within the primary school sector is challenging the traditional teaching method of some teachers who have shared their concerns with me as they try to find the balance between child-led and teacher-directed learning. The context for this professional inquiry is within the Years 0–2 in mainstream primary school classrooms within New Zealand, where a PBL environment has been developed and implemented. The transition into a PBL environment has created some confusion about the role of the teacher and the inclusion of teacher-directed instruction within this pedagogy (Aiono, 2017). Therefore, the challenge for me is the disparity between the PBL pedagogy and current teacher practice within my liaison schools.

The support of teachers through professional development within the RTLB role also takes the form of modelling in which RTLB demonstrate new educational practices within the classroom context. The act of providing in-service support through modelled practical application has a greater effect on teacher practice than the attendance of conference-style professional development (Showers & Joyce, 1996; Timperley, Wilson, Barrar & Fung, 2007; Weidenseld & Bashevis, 2013). This is due to the interpersonal and interprofessional nature of the in-service support. The use of constructive feedback and participation in regular professional conversations are deemed to be the key aspects for providing meaningful and effective professional learning opportunities for

teachers (Golja & Schaverien, 2007; Joyce & Showers, 2002; Timperley, 2008; Zepeda, 2013). Therefore, the teacher relationships which RTLB develop through their RTLB liaison role are an important and valuable way of providing professional development for teachers within each of their liaison schools.

RATIONALE FOR THE INQUIRY

As an RTLB liaison, I wanted to inquire into my role of supporting teachers to successfully implement a PBL environment. This inquiry supports my practice as an RTLB liaison through improving my knowledge of how best to support teachers within the Years 0-2 to implement PBL following best practice. This relates to the planning, resourcing, facilitation and deliberate acts of teaching within the pedagogy of play. The role of the teacher in the PBL environment requires a level of professional expertise which allows the teacher to move seamlessly between teacher-directed tasks and child-led learning (Aiono, 2017). Therefore, by developing an understanding of what is required for the successful implementation of PBL within the New Zealand primary school context, I will be more able to provide advice and guidance within my RTLB liaison role.

LITERATURE REVIEW

The purpose of this literature review was to develop an understanding of what PBL is and the theory which underpins the practice. There was also a focus on the role of the teacher and within the PBL environment.

What is Play-Based Learning?

The PBL environment is a child-centred pedagogy which promotes the development of children by following their natural inquisitive and explorative disposition. "Young children are naturally predisposed to exploring that which draws their interest and engages them. In order for them to continue to grow this disposition, they must feel connected to their learning environment and confident in their abilities as a learner" (Aiono, 2015, p.2). The power of play as a pivotal precursor to formalised instruction is well documented within educational research (Bergen, 2009; Canning, 2007; Mastrangelo, 2009; Nolan & Paatsch, 2018; Piaget, 1936; Vygotsky, 1978). The PBL environment consists of a child-directed exploration of phenomena through the method of play (Aiono, 2015, 2017; Alfieri, Brooks, Aldrich & Tenenbaum, 2011; Pyle & Danniels, 2017).

The pedagogy of exploration, to make sense of the objects in the world around them, has been the focus of early childhood education for many decades (Bergen, 2009; Briggs, 2012; McInerney & McInerney, 2002; Piaget, 1936; Vygotsky, 1978). In recent years, the environment of the primary classroom has changed from a teacher-led curriculum to a more child-centred approach, causing great debate in regards to what is deemed to be pre-school education/learning pedagogy versus that of the mainstream primary classroom (Aiono, 2015, 2017; Alfieri, Brooks, Aldrich & Tenenbaum, 2011; Pyle & Danniels, 2017). Pyle and Danniels (2017) state "the purpose of play-based learning is inherent in its name: to learn while at play" (p. 285).

By connecting to their learning environment and feeling confident in their abilities, young children will naturally explore whatever interests them (Aiono, 2015). PBL therefore, within this review, is seen as a child-directed exploration of phenomena through the method of play (Aiono, 2015, 2017; Alfieri, Brooks, Aldrich & Tenenbaum, 2011; Pyle & Danniels, 2017). The concept of discovery-learning challenges the notion within education of the child being an empty vessel needing to be filled with adult knowledge, as was once believed (Bandura, 2001). In contrast to this, constructivist educational theorists such as Piaget and Reggio Emilia believed that the child unlocks their own intelligence through a process of discovery (McNally & Slutsky, 2017). The concept of co-constructed and reciprocal development of knowledge (ako)³ aligns with the culturally-responsive framework of *Ka Hikitia* (Ministry of Education, 2013) which outlines the importance of developing positive relationships which allow for effective teaching through the teacher's ability to engage and motivate the students (Alton-Lee, 2003; Hattie, 2009).

Therefore, the role of the teacher within these philosophies is to support the child to reach their full potential through self-guided discovery. Vygotsky (1978) documented that the role of the teacher is to identify what the child can currently achieve independently and what they can achieve with support or within "the zone of proximal development" (Khaliliaqdam, 2014, p. 891). In the zone of proximal development (ZPD) the role of the teacher is to scaffold the child's abilities to increase their knowledge and understanding (Cullen, 2001; Wasik & Jacobi-Vessels, 2016). This concept of the ZPD aligns with the pedagogy of PBL with its purpose being to allow children to explore through rich and

³ Ako is the term used to describe the culturally responsive teaching and learning relationship in which both the educator and student learn in a two-way process (Ministry of Education, 2013).

engaging experiences (Aiono, 2015; Blucher, 2017; Canning, 2007; Mastrangelo, 2009).

The Role of the Teacher in a Play-Based Learning Environment

Whilst the purpose and pedagogy behind the implementation of a PBL environment is supported by many education theories and associated research (Aiono, 2015; Canning, 2007; Mastrangelo, 2009; Piaget, 1936; Vygotsky, 1978) the best practice in terms of the implementation of a PBL environment and the role of the teacher within the PBL environment is less documented. This uncertainty has led to a variance in practice (Pyle & Danniels, 2017). The New Zealand Curriculum for Early Childhood *Te Whāriki*⁴ (1996) is world-renowned for the way it follows the natural development of the child through learning dispositions (Carr, 2006). *Te Whāriki* (1996) aligns the focus of learning and exploration with the threads of the child's natural developmental stages. A child's stages of development can be explored through both social and cognitive scales. Social development focuses on the child's ability to positively interact with others whilst the cognitive scale relates to the child's academic ability (McInerney & McInerney, 2002; Mastrangelo, 2009; Ministry of Education, 1996).

Following the natural progression of learning, teachers within the early childhood sector promote the teaching approach of child-directed elements with some degree of adult guidance (Pyle & Danniels, 2017). However, there is debate over the level of teacher assistance with a caution for teachers to "support, not disturb" (Pramling Samuelsson & Johansson, 2016, p. 48) as adult interference may influence or hinder play (Pyle & Danniels, 2017). A contrasting viewpoint describes teacher involvement as being important to further children's learning (Pyle & Danniels, 2017). This perspective is supported by Alfieri, Brooks, Aldrich and Tenenbaum (2011) who state that "unassisted discovery generally does not benefit learning" (p. 12). Therefore, it is the way in which educators craft the learning environment and learning experience that will have the greatest impact on the way a child learns (Alton-Lee, 2003; Hedges, 2000; McLaughlin & Cherrington, 2018).

The way in which a teacher orchestrates the PBL environment "requires skill and professional expertise often underutilised in our classroom teachers ... teachers working within these environments must skilfully walk a fine line between teacher-directed activities and child-directed learning" (Aiono, 2017, p.1). Epstein (2007) referred to this careful and

purposeful balance of child versus teacher-directed learning as intentional teaching whereby the teacher is thinking about "how it will foster children's development and produce real and lasting learning" (p.10). The importance of intentional teaching is also outlined within the revised version of *Te Whāriki* (Ministry of Education, 2017) which refers to the use of 'intentional pedagogy' (p.59) to enhance children's learning and development.

The actions of the teacher within the PBL environment have a major impact on the successful learning achievement of the students (Alton-Lee, 2003; Nolan & Paatsch, 2018; NZC Online, 2019; Pyle & Danniels, 2017). The key practices to support effective play-based learning include:

- Creating a classroom to meet the diverse needs and interest areas of the students (NZC Online, 2019; Terpstra, Higgins & Pierce, 2002).
- Using curriculum knowledge to notice and recognise the learning within the play experiences (Nolan & Paatsch, 2018; NZC Online, 2019).
- Building on the prior knowledge of the students (NZC Online, 2019).
- Participating in purposeful conversations to broaden the students' ideas (Education Review Office, 2017; Nolan & Paatsch, 2018).
- Scaffolding the interactions between students to support their social and emotional competence (Gagnon, Neale & Nickerson, 2007; Goodley & Runswick-Cole, 2010; Vygotsky, 1978; Wasik & Jacobi-Vessels, 2016).

Therefore, teachers who are facilitating a PBL environment within their classroom have an important and challenging role to perform. In order for RTLB to work with teachers in PBL environments, they also need to have a strong knowledge of PBL and how to support teachers within this environment.

METHODOLOGY

This section describes the process used to gather teacher voice from the participants around their implementation of PBL and how they would like to be provided with support within their PBL environment.

Inquiry Questions

The overarching question of the inquiry was: How

⁴The New Zealand early childhood education curriculum which was first introduced in 1996 and then updated in 2017 (Educa, 2019).

can I, as an RTLB liaison, best support teachers to successfully implement a play-based learning approach? This was supported by two sub-questions: (i) What does the successful implementation of play-based learning look like in a New Zealand mainstream primary school? and (ii) What are the barriers and enablers teachers face when implementing a play-based learning approach?

Rationale for the Inquiry

In order to discover what processes and strategies teachers perceive as being the most helpful in supporting them to implement a PBL environment as to inform RTLB practice, the process for data-gathering needed to draw on the knowledge and experiences of teachers across New Zealand. Therefore, to allow for as many respondents as possible, the data gathering method had to be able to collect a broad range of information and a large amount of data from across the entire country.

To have a wide reach of participants, an anonymous online questionnaire was conducted through the New Zealand Teachers - Primary Facebook page. This site has more than 35,000 members. The use of an online questionnaire has many benefits which include: flexibility and ability to allow for a broad range of information to be gathered; ease of administration; ability to collect large amounts of data; and the data can be gathered from 'closed' and more 'open ended' questions (Menter, Elliot, Hulme, Lewin & Lowden, 2011). The targeted demographic of the questionnaire was that of mainstream primary school teachers of students in Years 0 to 2 who were currently implementing PBL or were intending to implement PBL within their classroom.

Data Collection

The inquiry used a mixed-method approach which included the collection of both quantitative and qualitative data. Primary data was gathered through the creation of an anonymous online questionnaire, which included a combination of multi-choice and open-ended questions (Menter et al., 2011). The multi-choice questions provided quantitative data about the participant's teaching experience, their rating of importance for the key aspects of PLB, and their own levels of competency within the implementation of a PBL approach. The inclusion of open-ended questions provided qualitative data which was used to extrapolate key themes and explore personal views in more depth.

The participants were invited to participate through an invitational online questionnaire which was shared on the above-mentioned New Zealand Primary Teachers Facebook page. The introduction to the inquiry and the invitation to participate included a link to an anonymous questionnaire using Google Forms.

Description of Participants

There were forty participants who responded to the online questionnaire. Of the forty participants, ten were identified to be currently teaching students in Years 3 and above. Using the Skip Logic⁵ technique within the Google Form questionnaire, only participants who were currently teaching students in Years 0-2 were able to continue through to complete the full questionnaire. Therefore, this allowed for a targeted response from teachers who are currently teaching within the junior school.

The majority of the remaining thirty participants had sixteen years or more of teaching experience (sixty-six percent). However, twenty-three percent of the participants had been teaching for between six and ten years. One participant was a recent graduate with less than five years of experience. Twenty of the thirty participants who taught in Years 0-2 were currently implementing some form of PLB.

Ethical Considerations

The use of an online platform to conduct the questionnaire eliminated the potential for a breach of privacy, conflict of interest or the imbalance of power (Menter et al., 2011). This inquiry research project was reviewed against a university Human Ethics Application - Risk Assessment process through a peer review process and was deemed as low risk.

RESULTS

This section is organised under sub-headings which link directly to the quantitative questions and the emerging themes which developed from the qualitative data. The order of the sub-headings provides a logical progression of information gathered through the questionnaire.

Support for the Implementation of PBL in the Primary Sector

The data from the online questionnaire had an

⁵Skip Logic allows you to automatically send participants to a future point in the survey based on their responses (Qualtrics, 2019).

overwhelming support of ninety-six percent in favour of the implementation of PBL within the primary school sector. As one stated:

Absolutely without question. It focuses on the child's development and readiness for learning. It develops all the skills the child's brain needs to facilitate academic learning. Physical skills and social emotional skills. The executive functioning skills that their future employers now talk about. They are happier, more engaged and are learning much quicker than before. (Participant 3)

This idea was supported by Participant 20 who stated, "I believe that children each have a biological imperative that unfolds as they grow. A play-based environment enables the child's emotional, academic and social literacy to unfold in a way that matches each individual." However, other participants who were still in support of the implementation of PBL, had a caution that the targeted teaching must also continue within the PBL environment.

It needs to be done in such a way that literacy and numeracy learning is still maintained at a level that will enable learners to still be successful long term ... play-based learning has enormous potential for developing pro-social skills as long as the teacher is able to be there to support the learning. (Participant 11)

This sentiment was echoed by another participant (18) who stated, "It needs to be thoughtful, well-planned, your staff all need to be on the same waka and scaffold slowly...It is the perfect way to lead learning through the key competencies."

Professional Development on PBL

Of the participants who completed the questionnaire, eighty-three percent had attended professional development on PBL. The professional development sessions most commonly included information on the research and pedagogy behind the importance of play, the role of the teacher in the PBL environment, brain development, and resourcing of the PBL environment. Although not as frequently mentioned, timetabling, planning through provocation and implementation were also covered through the professional development sessions that the participants had attended.

Results showed that thirty-six percent of the participants thought that the professional development they had attended prepared them exceptionally well to begin implementing PBL in their own classroom. Most of the participants (fifty-six percent) reported that the professional development had prepared them well or very well to begin implementation of a PLB environment, whilst only eight percent felt that their professional development experience had only somewhat prepared them to begin implementing PBL (see Figure 1).

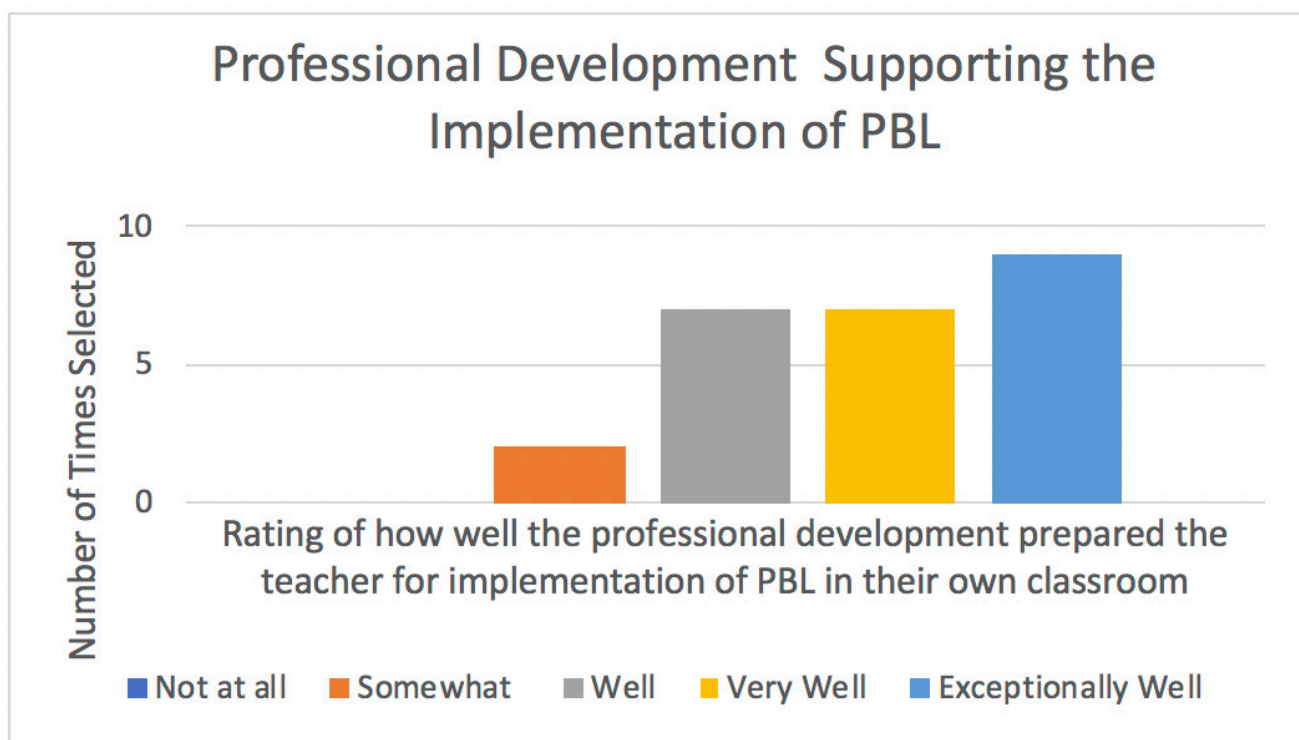


Figure 1: Professional development supporting the implementation of PBL.

Table 1
Pedagogical Statements about Play-based Learning

Statement about Pedagogy of Play-Based Learning	Percentage of Participants who agreed with the statement N=30
Play-based learning is a child-centred approach.	26 (86.6%)
Play-based Learning environments in the primary sector include instructional reading, writing and maths.	19 (63.3%)
The teacher has a pivotal role within the play-based Learning environment.	19 (63.3%)
Intentional teaching is an important aspect of the play-based learning environment.	16 (53.3%)
The play-based learning approach means the complete absence of teacher-directed instruction.	2 (6.7%)

The Pedagogy of PBL

Participants were asked to select the statements which aligned with their understanding of the pedagogy of PBL. Table 1 highlights the percentage of participants who agreed with each statement.

The participants most commonly agreed that 'PBL is a child-centred approach' (eighty-six percent). However, six percent of participants agreed with the statement that a PBL environment means the complete absence of teacher-directed instruction.

The Key Aspects of a PBL Environment

Using a Likert scale, the participants rated each of the following aspects of PBL in level of importance: resourcing, planning, assessment, teacher proficiency, knowledge of child developmental stages, and knowledge of the New Zealand curriculum. To calculate the overall rating of importance for each aspect, the rating was given a value from 0 to 4 as follows: 0 - not important, 1 - low importance, 2 - importance, 3 - great importance, 4 - extreme importance. This rating

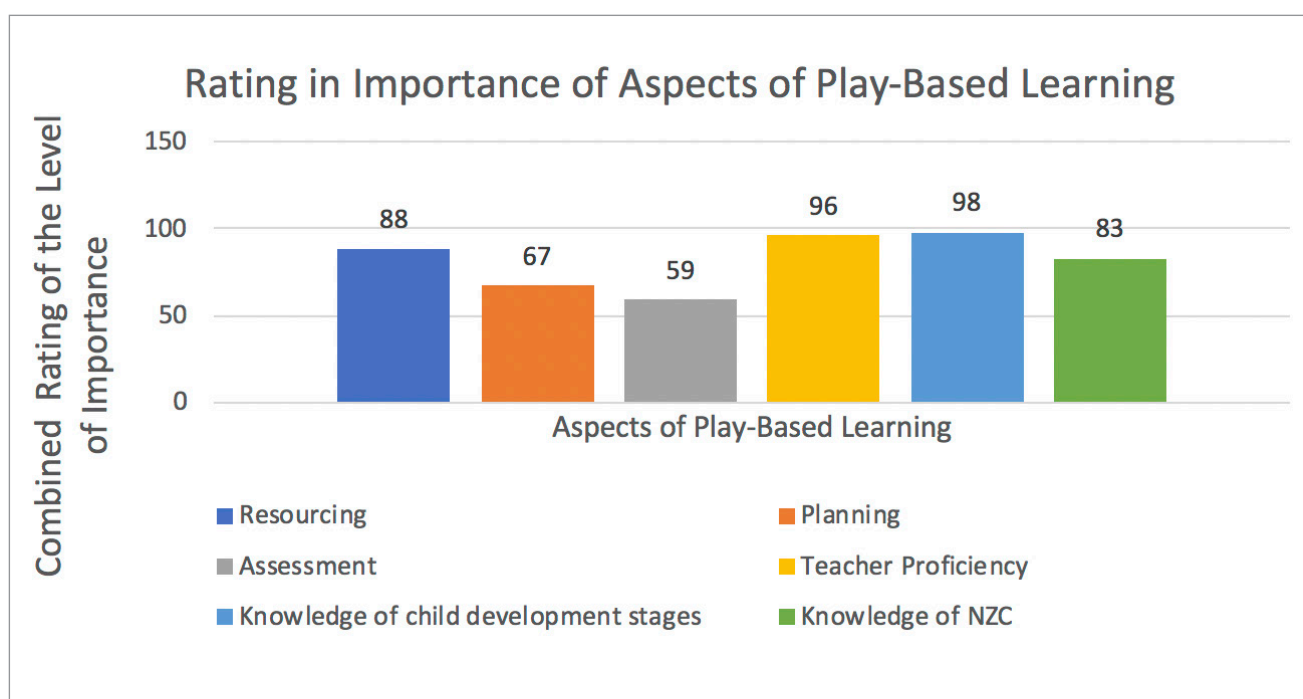


Figure 2: Rating in importance of aspects of play-based learning

was then multiplied by the number of times it was selected by a participant for each of the 6 key aspects. This final figure produced the overall rating of importance as shown in Figure 2.

The combined rating of all participants placed the knowledge of child developmental stages as the most important aspect of PBL. This was followed closely by the aspect of teacher proficiency. The order of importance of the other four identified key aspects of PBL are as follows: resourcing, knowledge of the New Zealand Curriculum (NZC), planning, then lastly, assessment.

Teacher Competency in PBL

Using a Likert scale, the participants rated their own competency within each of the following key aspects of PBL: resourcing; planning; assessment; teacher proficiency; knowledge of child developmental stages; and knowledge of the NZC. To calculate the overall rating of competency for each aspect, the rating was given a value from 0 to 4 as follows; 0 - no confidence, 1- some confidence, 2 - confidence, 3 - very confident, 4 - extremely confident. This rating was then multiplied by the number of times it was selected by a participant for

each aspect. The final combined figure produced the overall rating of competency as shown in Figure 3.

The collective rating of the teacher’s own competence for each of the six identified aspects of PBL placed the NZC as the aspect of which they had the most competence. The next aspect of most competency was the knowledge of child developmental stages. This was followed by teacher proficiency. Next in rating of competence was planning for the PBL environment which was followed by resourcing. The aspect that participants rated themselves the least confident in was assessment within the PBL environment.

Identified Barriers to the Successful Implementation of PBL

Participants were asked to identify the barriers they were experiencing which negatively impacted their implementation of PBL. The data was colour-coded to extrapolate the common themes and sub-themes within the qualitative data. The main themes identified were: resourcing; negative perceptions; school management; and limited knowledge. The sub-themes identified under-resourcing included

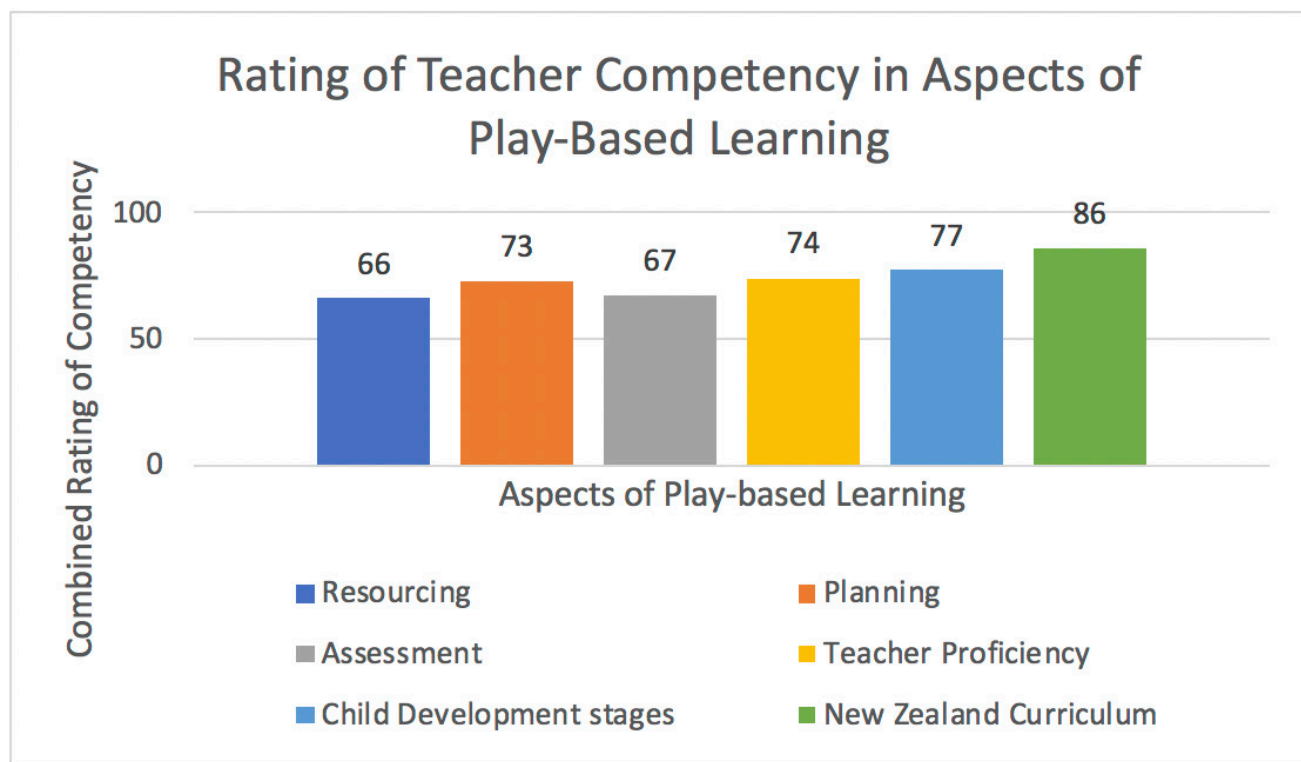


Figure 3: Rating of teacher competency in aspects of play-based learning.

the equipment, funding and staffing ratios. The sub-themes identified under the theme of negative perceptions included the perception of parents and that of other staff members within the school.

The most commonly identified barriers in relation to the successful implementation of PBL within a New Zealand primary school setting were adequate resourcing of teacher ratio which was mentioned nine times and the negative perception of PBL from other staff and parents which was collectively mentioned five times. Another barrier which was identified to a lesser extent was that of the school management buy-in which was identified four times by participants. The other barriers of time, assessment and curriculum implementation were each identified one time.

Enablers to Support the Implementation of PBL

When asked to select the potential enablers to best support the implementation of PBL within a New Zealand primary school setting, seventy-three percent of participants selected planning and resourcing sessions with an outside agency. The second most selected option was support through observations and practice-based feedback with fifty-six percent identifying this. Only ten percent selected that the RTLB service would be the best to provide advice and guidance. The option of attending a PBL mentoring programme was selected by fifty-three percent, whilst the least popular option was that of systems level advice at management level which forty-three percent of respondents selected.

DISCUSSION

This section is organised with the same sub-headings as the results section. This layout allows for a direct correlation between the results gathered and the discussion in relation to the literature.

Support for the Implementation of PBL in the Primary Sector

This research demonstrated that there was overwhelming support for the implementation of PBL within the primary sector. The participants stated that their positive view of the PBL pedagogy was due to the alignment of child developmental stages and the key factors of the development of physical skills, social skills and emotional regulation skills which they identified as being key factors underlying the purpose of PBL.

This viewpoint is in direct agreement with the research which states that the PBL environment is a child-centred pedagogy which promotes the development of children by following their natural

instincts and innate schema of exploration (Aiono, 2015; Blucher, 2017; Canning, 2007; Mastrangelo 2009) and can be measured through social development, which focuses on the child's ability to positively interact with others as well as the cognitive scale, which relates to the child's academic ability (Aiono, 2017; McInerney & McInerney, 2002; Mastrangelo, 2009; Ministry of Education, 1996). The inclusion of both the social and cognitive aspects is deemed as an important method to support students in a holistic way (Ministry of Education, 1996).

Professional Development on PBL

A high percentage of participants in this inquiry who were beginning their PBL journey, were attending some form of professional development to support their knowledge of implementing this pedagogy within their learning environment. Almost all the participants had attended professional development with an outside agency. The attendance of a one-off professional development session had provided some teachers with enough knowledge and skills to begin implementing PBL. However, this type of induction into a new pedagogy does not have a high rate of success without further mentoring or in-service support (Joyce & Showers, 2002; Showers & Joyce, 1996; Weidenseld & Bashevis, 2013; Zepeda, 2013). Therefore, the RTLB service could have a positive impact on the on-going success of PBL professional development by providing further mentoring support.

The Key Aspects of a PBL Environment

The key aspects of a PBL environment - resourcing, planning, teacher proficiency, knowledge of child developmental stages, assessment and knowledge of the New Zealand Curriculum - were all rated with high levels of importance by participants in the inquiry. Knowledge of child developmental stages was rated as the most important aspect of PBL. The focus of learning and exploration through a child's developmental stages is embedded within the early childhood curriculum document Te Whāriki (Ministry of Education, 1996). The exploration of a child's stages of development through a social scale aligns with the key competencies which are woven through the NZC (Aiono, 2017; McInerney & McInerney, 2002; Mastrangelo, 2009; Ministry of Education, 1996).

Teacher proficiency was rated as the second most important aspect of successful implementation of PBL. This rating supports literature which states that the teacher within the PBL environment plays a pivotal role through the skilful integration of teacher-led and child-centred pedagogy (Aiono, 2017;

Epstein, 2007; Ministry of Education, 2017). The actions of the teacher in a PBL environment has a major impact on the successful learning achievement of students (Alton-Lee, 2003; Nolan & Paatsch, 2018; NZC Online, 2019; Pyle & Danniels, 2017).

The Pedagogy of PBL

When participants were asked to select the statements which best aligned with their own understanding of the pedagogy of PBL, the statement which was most selected stated that PBL is a child-centred approach. The pedagogy of exploration to make sense of the objects in the world around them has been the central focus of preschool education for many decades (Bergen, 2009; Briggs, 2012; McInerney & McInerney, 2002; Ministry of Education, 1996). The continuation of this child-centred pedagogy into the primary school sector requires a change in the way teachers implement their programme and resource their classroom environment. The participants in this inquiry also agreed that within the primary sector, PBL included instructional reading, writing and mathematics. This statement is supported within the NZC in which these key areas of learning are expected to be taught and reported against on a regular basis (Ministry of Education, 2016).

Teacher Competency in PBL

Participants perceived the highest levels of teacher competency within the PBL environment were the aspects of NZC knowledge, child developmental stages and teacher proficiency. These aspects are strengths within their current teacher competency. However, other key aspects of the PBL environment had lower ratings of teacher confidence. These included planning, assessment and resourcing. Therefore, it could be argued that more support is required to develop these areas of the PBL environment. The aspects of planning, resourcing and assessment are not just reliant on the teacher's own competency but also the perceptions and expectations of the school management team.

Identified Barriers to the Successful Implementation of PBL

The most commonly identified barrier to the successful implementation of a PBL environment was the resourcing of the environment. This included the tangible resources required to go in the environment as well as the staffing ratio. Participant 21 stated the "lack of funding/of resources/lack of teacher-aide support/lack of research on both sides – play versus structured" were the greatest barriers against the implementation of PBL. The facilitation

of PBL requires the teacher to support the child to reach their full potential through self-guided discovery, using rich and engaging experiences (Aiono, 2015; Blucher, 2017; Canning, 2007; Mastrangelo, 2009) which is made more difficult with large numbers of students.

This child-centred pedagogy is largely implemented within the early childhood sector which has a staffing ratio of one teacher per seven to ten students (New Zealand Government, 2018). This ratio is much lower than a junior classroom (Years 0-2) within the primary school sector, which on average has a teacher ratio allocation of one teacher to nineteen students (Ministry of Education, 2019).

The reluctance of management to support the implementation of PBL was another identified barrier (nineteen percent) with one participant stating, "My school's management is not interested in play-based learning. I guess they don't trust that the child will still 'achieve' at their current rate." (Participant 1)

Enablers to Support the Implementation of PBL

The most commonly selected option to support the implementation of PBL was to have planning and resourcing support through an outside agency. This option aligned with the level of teacher competency within this area as well as the greatest barrier identified to the current implementation of PBL. The use of an outside agency would suggest that the participants would like continued support from the agency who had provided them with their initial professional development on PBL.

For this type of support to be available there would need to be significant funding allocation to pay for the external support. The upskilling of liaison RTLB to provide this type of continued in-service support through a mentoring partnership would be a more sustainable and affordable option for the majority of primary schools within New Zealand.

CONCLUSION

Increased support and guidance in facilitating a PBL approach within the primary school sector would be beneficial as teachers attempt to implement a PBL environment to enhance student achievement (Pyle & Danniels, 2017). The facilitation of this environment requires a careful orchestration of the aspects of planning, resourcing, facilitation and deliberate acts of teaching within the pedagogy of play. Aiono (2017) describes the role of the teacher within the PBL environment as one that requires significant flexibility and proficiency.

The teacher is an active participant who weaves the learning through play by constructing an environment which is both inviting and stimulating and allows for rich engagement with the stimulus. Therefore, there is a need for the teacher to plan, reflect and respond to the actions and thoughts of their learners. Knowing when to scaffold the child to provide the link to higher level thinking and when to observe without disturbing the imaginative play is challenging. Teachers facilitating a PBL environment need to be reflective practitioners who adjust their practice to meet the needs of their learners (Nolan & Paatsch, 2018; NZC Online, 2019; Pyle & Danniels, 2017).

The key practices identified for the successful implementation of a PBL environment include: recognition of the students' prior knowledge and responding to their diverse needs and interests (NZC Online, 2019; Terpstra, Higgins & Pierce, 2002); identifying the learning within the play experiences (Nolan & Paatsch, 2018; NZC Online, 2019) and scaffolding of interactions to support social and emotional competence (Gagnon, Neale & Nickerson, 2007; Goodley & Runswick-Cole, 2010; Vygotsky, 1978; Wasik & Jacobi-Vessels, 2016).

RTLB provide advice and guidance which supports teachers to implement best practice which draws from the three circles of evidence (Bourke, Holden & Curzon, 2005). Positive teacher relationships and participating in regular professional conversations strengthen professional learning opportunities for teachers (Golja & Schaverien, 2007; Joyce & Showers, 2002; Timperley, 2008; Zepeda, 2013). Therefore, the RTLB liaison role is an important and valuable way of providing professional development for teachers within each of their liaison schools.

Limitations of the Inquiry

Whilst this research paper had the potential to capture a wide range of perspectives on the implementation of PBL by using an online platform which is accessed throughout New Zealand, the participants responded overwhelmingly in favour of PBL. Therefore, caution must be taken in reflection of the potential that the small sample of participants who opted to complete the questionnaire only represent a selection of teachers who have a passion for PBL and a positive viewpoint of the implementation of PBL within the primary school sector. It is also possible that the questionnaire missed any opposing views (negative perceptions) towards the implementation of PBL due to the optional nature of participation through an online invitation. The use of an online

questionnaire rather than an interview proved to be a limitation in terms of the ability to gather in-depth responses outlining each teacher's practices and perspectives of PBL.

Implications

Due to the overwhelmingly positive responses in favour of PBL, further research to attempt to capture any alternative viewpoint towards the implementation of PBL in the primary school sector could potentially add validity to the data collected in this questionnaire. Further research could identify whether this small participant sample has accurately represented the viewpoint of most teachers throughout New Zealand within the primary sector. The use of an interview in lieu of an online questionnaire to gather the participant voice would also provide greater depth within the participant responses and allow for a deeper understanding of their perspective on PBL (Menter et al., 2011).

RECOMMENDATIONS

The teachers who participated within this PBL inquiry, identified that the most preferred way to support the implementation of a PBL environment would be through an outside agency to provide regular professional development and mentoring support. This level of continued support could also be delivered by RTLB liaison within their role of professional advice and guidance. The development of a trusting and respectful mentoring partnership, in which the RTLB liaison provides support and guidance for the teacher through observational data and solution-focused feedback, would be beneficial for supporting teachers to develop their confidence and competency within this new pedagogy in the primary school sector.

The recommendation in light of the literature and response to the practitioner voice is for the school management to fund support for the use of outside agencies to provide more regular professional development for teachers who are implementing PBL environments. To further embed the pedagogy of play and practical implementation within the primary school sector, RTLB liaisons who had attended multiple sessions of professional development on PBL with outside agencies, could then be placed in the role of mentor to provide support to schools who are beginning their journey towards the implementation of PBL.

This level of support would provide teachers with the opportunity to develop their own confidence

in the key aspects of PBL and to strengthen their own professional practice. The development of 'Communities of Practice'⁶ (Wenger, McDermott & Snyder, 2002) to support PBL within the school setting could enhance the collective understanding of the pedagogy of PBL and be established across the primary school sector throughout New Zealand, as more primary schools move towards the implementation of PBL within their classrooms. Opportunities to provide the wider school community with further knowledge of the broad research-base which underpins PBL and the purpose of implementing PBL within the primary school sector, could have a positive impact on the identified barrier of the current negative perception of PBL by the wider school staff and the parents/whānau in the community.

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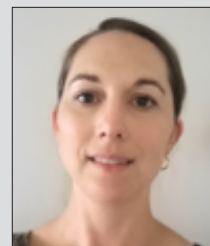
⁵Community of Practice is defined as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their understanding and knowledge of this area by interacting on an ongoing basis" (Wenger, McDermott & Snyder, 2002, p.3).

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