The Effects of

Play & Outdoor Learning

on

Social Skills, Mental Health & Literacy Attainment

in a P2 Class during a Pandemic

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Abstract

During the COVID-19 global pandemic of 2020-2021, there was a nationwide lockdown. Parents did not go to work and children did not go to school. As children returned to school, the focus for Education Recovery was on Literacy, Maths and Health and Wellbeing.

Play was to be a focus for Health and Wellbeing in P1 and P2 as children learned to socialise and collaborate with one another. However, the play pedagogy (to immerse children in play and call small groups out for teaching, and to allow children to choose to complete tasks throughout the week) is an educational hot potato. This play pedagogy is starting to take precedence over traditional teaching and learning and this has become controversial.

Another aspect of Education Recovery has been to take learning outdoors. This is to limit COVID transmission but also to help mental health and wellbeing.

Therefore, this study aimed to investigate how structured and focussed Play and Outdoor Learning opportunities affect the health, socialisation skills and literacy attainment of children in a P2 class.

This research used data from one P2 class of children. It collected a variety of quantitative and qualitative data from the children, their parents and from teachers.

The research found that Play and Outdoor Learning did support the attainment of literacy however the main factor for literacy attainment was pedagogy. This study shows that children learned literacy using a traditional approach; the teacher taught, the children work and then the children were allowed free play. The results showed very significant improvements in the children's attainment pre and post interventions using this pedagogy.

Nevertheless, the Play Approach seems to dominate the focus of P1 and P2 learning. Unfortunately, however, many professionals feel that this is not a positive approach to teaching and learning and many would prefer to work at different stages of the school. This is a significant issue for staffing and stress. It also has an impact on Initial Teacher Training. Many believe that with a new pedagogy there needs to be appropriate resources too. With this approach, a significant number of additional adults with the class group are required and there is a need for material resources too.

The impact on the Curriculum is considerable. Teachers do not understand how to plan, teach, assess, and manage this new approach. They have not been trained to do this. Teachers are confused; there is the need to follow the Curriculum Guidelines, support children to achieve a level, ensure the 7 principles of curriculum design is delivered and also now that learning should child-led and child-initiated.

A clear understanding, guidance and accountability between HMIe, school management and staff are required along with clear expectations and further research if a play approach is to be effective.

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1   Introduction

As a society living through a pandemic, we have been anxious about the health and attainment of children who have missed many months of in-school learning. Using a model for Education Recovery, it is more important than ever to rigorously consider how we educate and which guidelines and influences we should follow and why. Children deserve that we consider and implement the best practice and thought-through response to this pandemic to support their attainment, health, and social skills to re-enter a post-lockdown society.

Early years practitioners have been encouraged to continue to develop play opportunities to support the socialisation and health of children in a post-COVID lockdown Scotland.

The importance of Play in the Early Years has never been disputed. However, it is current thinking for play to take a more predominant role in the P1 and P2 setting. This Play Approach in the early primary setting, is an educational hot potato. The role of play in the Early Years has never been questioned, however the pedagogy and seeming predominance over traditional learning methods is certainly controversial.

Outdoor Learning has also come into focus during the pandemic. According to scientists, there is less risk of contracting COVID-19 outside. Therefore, schools are encouraged to take learning outdoors. Outdoor Learning is not a new idea. However, as more classes and schools are taking up the challenge of taking more learning outdoors, it is worth evaluating the importance of Outdoor Learning and its impact on attainment, health and socialisation.

Consequently, it is the aim of this study to investigate how structured and focussed Play and Outdoor Learning opportunities affect the health, socialisation skills and literacy attainment of children in a P2 class.

2 Literature Review

2.1 Play

Play is 'essential to healthy development, contributing to capacity for learning, resilience, and the development of physical, cognitive, social and emotional skills' (Government, 2013). The importance of play is regarded so highly by the Scottish Government, that its Early Years Framework (Government, 2008), and its policies on Realising the Ambition (Education Scotland, 2020) and Child At the Centre (Education, 2007), all focus on different opportunities to play in the Early Years, "the pre-school years and P1, or later for some" (Scotland, 2004). In fact, the Scottish Government's early educational policies, Building the Curriculum 2: Active Learning in the Early Years (Executive, 2007) and Building the Curriculum 3: A Framework for Learning and Teaching (Government, 2008), set out the government's strong belief in Play in the Early Years.

The European Parliament also adopted a resolution on Early Years Learning in the European Union. It notes that "the early years of childhood are critical for children's development and highlights that in addition to education, all children have the right to rest, leisure and play" (Whitebread, 2012). This is underpinned by the Rights of the Child (UNICEF, 1989).

As a nation and as a society, we understand that play is important in childhood. However, is there a place for play in a primary school?

2.1.1 Play & Health

In a study by Berk (2004), two preschools were observed: a Montessori School and a YMCA preschool. The Montessori school had workstations with few opportunities for make-believe play. If children veered from the station to make-believe play, they were encouraged to return to the task. In comparison, the YMCA school encouraged play and it had lots of different areas for play. Berk (2004) found that children engaged in twice the amount self-talk in the YMCA environment than in the Montessori school. They talked to themselves to work out the actions of characters in the play scenario and to guide their thoughts and behaviour during tasks. Berk (2004) suggested that this self-talk helped them to deal with challenges in the real world. They also found that those children who were highly involved in play, also learned more responsible behaviour patterns, and improved social responsibility.

Vygotsky's theories of scaffolding and Zone of Proximal Development (Slater, 2003) indicated that children learn to regulate their behaviour and improve their socialisation skills with the help of adults who show them how to behave, model the words to communicate and provide a social story. These skills can be learned through play but require adults to increase the children's 'zone' to help them to develop. This type of play helps children's social skills but also their resilience and sense of agency.

2.1.2 Play & Socialisation

Parten (Xu, 2010) described the many different stages of play which the average child goes through in the first 5 years of life: solitary, observational, parallel, associative and cooperative play. By primary school, you would expect the average child to be able to take part in cooperative play.

It is by playing, that children learn how to function in society. For example, the boy who cannot sit still in the classroom during story time without frequent prompts from the teacher to sit still and pay attention will, in contrast, sit still and pay attention when playing schools for much longer. He is learning to socialise and learning how to behave in society through play (Berk, 2004).

Often children will revisit anxiety-provoking experiences, such as a trip to the doctor's office or discipline by a parent when playing. However, in play the child will reverse the roles so that the child is in command and be in control (Freud, 2010).

Similarly, Erikson showed that Play helped children to understand children social roles. As children emulate a role, they also self-regulate their behaviour as they act out the situation in that role (Slater, 2003). By emulating admired adult figures, children learn social norms, behaviour and responsibilities (Berk, 2004).

Piaget believed that play allowed children to develop schemas and re-enact them, allowing children to develop emotional and social skills although those children under 7 years did not have Theory of Mind to empathise with others. Children under 7 become aware of different points of view during play although they are not quite ready to see other people's viewpoint (Slater, 2003).

2.1.3 Play & Attainment

Play is not simply a social construct. Piaget believed that through play children learned symbolism which helped them cognitively (Slater, 2003). Indeed, the re-enactment through play seems to develop social, emotional, and cognitive functions (Pellegrini, et al., 2007) and the experiential, kinaesthetic, creative learning opportunities allow children to explore ideas to see whether something exists or could be true (Hopwood-Stephens, 2012).

Such play, learning and exploration of schemas create 'a brain that has increased flexibility and improved potential for learning later in life', and it develops 'behaviour for developing resilience' (Lester & Russell, 2010). Vygotsky's Zone of Proximal Development Theory shows that more able children scaffold the learning of less able children ergo, that the less able children learn from the more able (Slater, 2003). Therefore, exploration and learning is extended by others through play.

Children's play also extends vocabulary as children use words that they have heard and put them into practise in their play (Berk, 2004). Not only do they extend their vocabulary but they correct each other's mistakes and demonstrate the correct way to speak. In fact, the amount of time children spends talking with peers while pretending correlates positively with the size of their vocabularies at age 5 (Fisher, et al., 2015). By playing with language, resolving disagreements, and persuading their peers, children's vocabulary and literacy skills expand by listening and learning from each other.

Furthermore, "the amount of time that children devote to pretending at age 4 is positively related to reading and writing skills at 6/7 years, specifically, the extent to which children spontaneously read words on game cards and signs, understand print concepts, and write letters and simple words. The more children engage in literacy-relevant play, the more advanced their literacy skills are as well" (Berk, 2004).

Clearly play is a positive experience to develop mental health and wellbeing, social skills and attainment. Therefore, there is a valid reason to foster play skills in the Early Years.

2.1.4 Good Practice in Play

Nevertheless, 'adults can unwittingly constrain and undermine children's play through their attitude to it or they can support play to deepen and become more complex. When adults understand and value play, they are more able to recognise the benefits children are deriving from it and therefore to provide suitable opportunities and resources.' (Scott-McKie & Casey, 2017).

It is the adult's role to facilitate the learning, extend the learning and provide resources for learning; the interaction between child and adult is key. A child will increase his/her "Zone of Proximal Development" only through interaction with more capable peers or an adult (Vygotsky, 1978).

The Reggio Emilia Approach favours the child-led approach, where play and learning follow a constructivist model which is child-led. The adults' role is to facilitate and provide resources for the child (Scotland, 2006). Clearly 'play' is not something that children just 'do'. Children cannot just be left alone to play without any support. In fact, that can just lead to ensuring chaos (Kym Scott Consultancy, 2021). Free play is good for children but "having no structure could lead to wildness in the children's behaviour making it difficult to regain control" (Barrable & Arvanitis, 2019). The main functions for adult-child play include teaching, enlivening daily routines, defusing conflict, expressing and regulating emotion, influencing another's social behaviour and having fun (Berk, 2004).

Children need the extension, support, scaffolding and interaction, which an adult can provide. Indeed, a lack of high-quality family interactions is one reason why many children arrive in educational establishments, already evidencing an Attainment Gap (Goodman & Gregg, 2010). It is the 'quality of conversations that is important to boost language development' not the quantity of it (Kym Scott Consultancy, 2021). Haight & Miller (Fridy, 1994) found that those children who had high adult-child play at 1 year old, "engaged in a great deal of pretend play at age 4. Those with imaginative and enthusiastic parents were the most highly skilled pre-schoolers". Children's development increased where adults played and socialised with them at the child's level (Spagnola & Fiese, 2007).

'By following the child's interests and motivations we will always be on the right level' (Education Scotland, 2020) and that is true for play as children assimilate their understanding of the world. However, the best teaching takes place when adults are involved (Kym Scott Consultancy, 2021). To support play effectively, practitioners need to be knowledgeable and sensitive about the timing and nature of interventions or interactions. When practitioners are reflective and intervene appropriately, they can take account children's interests and prior knowledge and make provision for next steps and new experiences (Government, 2013).

Clearly learning through play has been shown to help the mental health, socialisation, and attainment of children but it requires scaffolding adults. The issue however is whether there are enough scaffolding adults and how it should be done to ensure the 7 principle of curriculum design to ensure attainment and achievement.

2.1.5 Challenges of Play

The literature informs us that Play is a vital part of growing up and it is important to health, socialisation, and attainment. However, many teachers are now reluctant to teach in infant classes because of the challenges involved in fulfilling a Play Curriculum.

Some teachers feel it is difficult to balance the Play Curriculum with achieving the Benchmarks for Curriculum for Excellence's Experiences and Outcomes; it is impossible to plan for the children to fulfil the experiences and outcomes for Early and First Level if a whole class of children decide to take their learning forward individually. It is impossible to extend the learning for each child on this basis and ensure the 7 principles of curriculum design and it is difficult to assess the children's skills because each child could potentially be following his/her own learning. For example, it is difficult to assess whether Child A can write letters in the sand if Child A does not visit that area for play. It is difficult to assess Child A, if Child A only attends that area when the practitioner is involved elsewhere and does not see it.

P1 and P2 teachers are encouraged to immerse children in free play and only call children from their play to learn in small groups. However, those same teachers find it impossible to engage children in the small group work whilst managing behaviour and ensuring children are engaged in their play in another part of the classroom. Often teachers find that they are called from the group work to deal with an incident with the playing children. When the teacher returns to the small group, the children and the teacher have lost engagement for learning.

Furthermore, children are allowed to choose when they wish to do their tasks over the day or week. Teachers need to ensure learning takes place, assess what the child can do and be able to support that child toward his/her next steps. Some teachers find this impossible to manage; the teacher may be the only adult in the classroom and cannot do and see everything that is going on. Moreover, there is a confusion of pedagogy between Curriculum for Excellence Benchmarks, a Play Curriculum, and the need to manage this in a Primary School setting with one adult.

No teacher would disagree with the importance of play. However, we need to establish clear guidelines of how that should work exactly whilst ensuring learning happens and children attain. We also need to ensure teachers are trained adequately to be able to deliver a play pedagogy and have the proper resources to do it.

2.2 Outdoor Learning

"Outdoor play especially in natural spaces is beneficial and provides experiences which cannot be replicated indoors" (Government, 2013). "The place in which people learn also helps them to make connections between their experiences and the world around them in a meaningful context. Outdoor places provide a diversity of resources and spaces that is hard to replicate in an indoor environment." (Scotland, 2009)

Indeed, research demonstrates a wealth of reasons to practise teaching and learning outdoors including support health, socialisation, and attainment.

2.2.1 Outdoor Learning & Health

Research has shown that regular compulsory curriculum-based outdoor education programmes can improve physical, psychological, learning, and social skills (Becker C, 2017). Indeed carefully structured sessions outdoors positively impact the personal, social, and emotional development of children (Murray, 2005).

Outdoor learning builds self-esteem, self-confidence and perseverance in children who might be disruptive or who are unable to concentrate in the classroom (Rickinson, 2004). These effects can be "the most critical controlling elements of a child's ability to learn and behave appropriately and thus to achieve her/his potential" (Margerison, 1996). Even being near to nature moderates or at least buffers the impact of stress on children (Wells, 2003).

These positive impacts on mental health are clearly significant enough to take learning outdoors and are all aspects of health and wellbeing that we want for our children within and out with school life.

Being physical outdoors is important too. Not only does being outdoors mean less time being stationery indoors, but it also means that children's gross and fine motor skills develop (Murray, 2005) and their physical stamina and a healthy cardio-vascular system improve (Harvey, 2015).

We want healthy children to grow up in our society.

2.2.2 Outdoor Learning & Socialisation

Being outdoors is important for socialisation and interpersonal skills because children tend to work more collaboratively outdoors (Rickinson, 2004). Not only does outdoor learning foster "a close connection with and respect for, nature" but "schools that provide rich outdoor free play environments report happier children, better break-time behaviour and children who are better able to concentrate in class" (Government, 2013).

For some children it is difficult to control themselves or have the emotional literacy required to learn in school (Scott-McKie & Casey, 2017). However outdoor learning supports those children with a tendency to the Naturalistic or Bodily-Kinaesthetic Intelligences to concentrate, pay attention and learn well (Gardner, 1993). These intelligences, or strengths, favour outdoor learning and may be more suited to learners. Bodily-Kinaesthetic Intelligence learners or Naturalistic Intelligence learners may actually succeed better in the outdoor environment.

2.2.3 Outdoor Learning & Attainment

Learning Through Landscapes conclude "the evidence is clear: outdoor learning is one of the tools we need to use to raise attainment in our schools" (Harvey, 2017). An average of 20% of children who were involved in Outdoor Learning felt more positive about their learning; they felt more included in their learning and knew what they were learning (Harvey, 2017).

Indeed, learning outdoors significantly improved children's attainment in Reading, Writing and Maths (Quibell, 2017). 'Children have a greater opportunity to actively participate in learning and share their ideas' and outdoor learning 'allows for increased engagement of the senses—engaging sight, sound, smell and touch, which may allow for more attentive, and richer, learning.' (Quibell, 2017). Not only are the children more engaged and attentive but children who participate in outdoor learning programmes score as well or better than control group children in reading, maths, language, and spelling. "These engaging (outdoor learning) programs appear to better connect students to their learning by allowing them to take a more active role in their studies (Lieberman, 2005).

Outdoor Learning is the ideal place to put into practice Experiential Learning (Dewey, 1963). Outdoor Learning is ideally suited to close the attainment gap as it gives children with few experiences to learn new skills and put them into practice. These experiences give the child more understanding when it comes to reading about similar settings or situation and it gives them a better stimulation to write with suitable vocabulary. With experiential learning, children can converse from a "position of expertise" (Hopwood-Stephens, 2012).

Hopwood-Stevens (2012) points out that those who have not been read to at home are left with a poorer advantage in attainment. Outdoor Learning allows children to be part of the narrative and experience different situations and places. They can then play, draw, or write upon this first-hand experience to retell their story. Children develop more sophisticated uses of spoken and written language as vocabulary improves.

However, it is not only the poorer attaining pupils who benefit from Outdoor Learning (Hopwood-Stephens, 2012). More able children with a very structured after-school life also benefit from Outdoor Learning because they do not have the opportunity for playing outside in their highly structured 'free time'. Like the children who have fewer experiences, outdoor topics may be out of the academically able child's comfort zone. Outdoor learning experiences will help the more able child expand their knowledge too.

2.2.4 Good Practice in Outdoor Learning

Clearly the outdoor environment is a beneficial aspect for the health and wellbeing of children which makes it a significant aspect of Getting it Right for Every Child (GIRFEC) (Government, 2006). Furthermore, the outdoors makes a difference to every Wellbeing Indicator within SHANARRI which assesses how a child is Safe, Healthy, Active, Nurtured, Achieving, Responsible, Respected and Included.

However Outdoor Learning is not something which happens by accident. Good practice assumes the need for small groups and individual focus to allow increased engagement and provide less distraction. Teaching and learning are also more individualised and the child's learning can be better scaffolded (Quibell, 2017).

The activities undertaken and how they are facilitated are also important factors in Outdoor Learning (Nicol, 2007). The aims and focus of the experience make a big difference to what is learned and the values placed on nature. 'Simply 'being outdoors' is not sufficient for young people to express an ethic of care for nature or develop an understanding of natural processes. These things seem to be learned when they is an explicit aim of experiential activities and when they are mediated in appropriate ways' (Nicol, 2007).

Evidently the 'teacher effect' and the delivery of the outdoor learning are the vital factors (Quibell, 2017). Having a knowledgeable, positive, and effective teacher with clear aims and engaging teaching within a small group is the ideal set up for Outdoor Learning.

2.2.5 Challenges of Outdoor Learning

The literature informs us that Outdoor Learning is vital to health, socialisation, and attainment. However, many teachers are still reluctant to be involved in Outdoor Learning. This reticence could be due to a lack of knowledge and experience; some teachers are not naturally 'outdoorsy types' and do not know how to create 'teachable moments' in nature.

Some teachers also find outdoor clothing to be an issue. Teachers have to provide their own outdoor clothing which they may only use for the purpose of Outdoor Learning at school and this clothing can prove to be expensive.

Furthermore, children do not bring in Outdoor Clothing for the same reason and schools often lack resources for a supply of children's outdoor clothes. Therefore, when children come home from school dirty and wet, teachers must deal with the consequences of parental complaints: another reason for not participating in Outdoor Learning.

Last, but not least, is the risk factor of Outdoor Learning. Many teachers are reluctant to take learning outdoors because of Risk Assessments, the anxiety of children being hurt and the culture of blame.

3 Background & Methodology

3.1 Background

3.1.1 School Background

This study investigated whether Play and Outdoor Learning influenced Attainment, Mental Health and Socialisation Skills of a particular P2 class in the Central Belt of Scotland. The school was situated in an area of high industrialisation and shopping. It had several green areas as well as many sports venues for leisure and relaxation.

The primary school had approximately 320 pupils from P1 to P7. The pupils were from a mixed catchment area and a variety of backgrounds. According to the Scottish Index of Multiple Deprivation (SIMD), pupils came from a variety of areas, ranging from 1 (most deprived) to 10 (least deprived) on the scale.

3.1.2 Class Background

In the P2 class there were 24 children: 12 girls and 12 boys. At the time of entering P2, they were aged between 5 and 6 years. There are equal numbers of boys aged 5 and girls aged 5 years old, as well as boys aged 6 and girls aged 6 years old as they entered P2.
In the class, there was a variety of:

- Religions practised
- Ethnicity
- Home Differences including (LAAH, single parent families, living with other relatives, home experiences, working families, unemployed families, 'nuclear families')
- Learning Differences (EAL, speech, hearing, learning abilities, gifted)

All measures, for collecting data and reporting on it, were taken to ensure a randomised process to guarantee that no child could be identified.

3.2 Methodology

3.2.1 Data Collection

Data was collected at the start of the school session in August and September 2020 for a baseline assessment of the children. At this point, children had not been in school for 20 weeks due to the pandemic. However, they have been able to meet up with other children and play with them since July 2020.

From August 2020 until the Christmas holidays, children had been in school for approximately 17 weeks. During this time, the children in the study were taking part in a variety of learning opportunities.

Then for 15 weeks from 22 February 2021 until 25 June 2021, education and learning continued in school, and assessment was gathered as the school session continued. Finally, staff, parents and children took part in post-study assessment to establish any changes in pupils' mental health and wellbeing and attainment during research period.

To obtain the data for this study, both qualitative and quantitative data was collected from pupils, parents and teachers as outlined below:

Qualitative Data Collection

- Children
  - Observations & Discussions of Children
  - Formative Assessment
  - Mental Health Self-Assessment: Pictorial Drawings of Emotions by Children
  - Foundations of Writing Ready to Write: Drawing Skills
  - Writing Assessments
  - Storytelling through Helicopter Stories

- Parents
  - Conversations with Parents
  - Mental Health Reflections by Parents about their Child

- Teachers
  - Informal Discussions

Quantitative Data Collection:

- Scottish Index of Multiple Deprivation (SIMD)
- British Picture Vocabulary Scale (BPVS3)
- Dyslexia Profile Assessments
- Naming Speed, Reading Speed, Phoneme Deletion, Non-word Reading, Single Word Spelling Test, Digits Forward, Digits Backward, Single Word Reading Test, Rate of Reading, Writing Assessments
- Classroom Formative Assessments for Phonics, Reading, Writing, Play
- Awareness of Sound
- Surveys of Pupils & Parents
- Surveys of Teachers across local authorities

3.2.2 Interruption to Research

During 2020-21 the COVID-19 Global Pandemic caused an interruption to teaching and learning. Teachers and children finished for Christmas holidays on 23 December 2020 but there was a nationwide lockdown, causing schools to all except the vulnerable. This meant that teaching and learning was online. Children from P1-P3 returned to school on 22 February 2021.   Therefore, online learning took place for nearly 7 weeks.

3.2.3 Interventions

There was a wide variety of interventions which took place during the period from August 2020 to May 2021 to establish what made a difference to literacy attainment.

Differentiated lessons in phonics, grammar, writing, reading, and comprehension were delivered according to Early and First Level Experiences and Outcomes in Literacy and English. These lessons were delivered based on traditional teaching pedagogy for groups of children. This was to allow children to learn, focus on follow up activities to this teaching and for the teacher to assess children's understanding to plan next steps and teaching. Furthermore, children were provided with Pupil Choice Literacy Activities with the view to find out what children would play with in the play area. In addition, a small group of children worked with an Early Years officer for 2 hours per week for 17 weeks to support their literacy skills and a Support for Learning Assistant supported children too.

By taking part in a traditional approach to Literacy learning, the study would have a clear understanding of whether this approach made a difference in children's:

- Phonics:
  Teaching a Programme of Sounds & Diagraphs, Rhyming, Phoneme Deletion, Single Word Spelling Test

- Reading
  Improvement in Expression, Fluency, Accuracy and Progression in the Reading Scheme Progression, Comprehension, Non-word Reading, Reading Speed, Single Word Reading Test,

- Writing
  Segmentation of Sentences, Writing Sentences, Grammar, Speed Writing Assessments, Writing Assessments, Helicopter Stories, Personal Vocabulary Books, Storytelling

Outdoor Learning opportunities were provided to ensure that children learned the correct vocabulary and used the correct vocabulary in their play and in their writing. Interventions took the form of visits to different places including parks, tunnels, roads, places of local interest, places of local environmental concerns and places where People Help Us. Children learned about nature and collaborated to complete tasks outdoors. Children were also provided with a variety of provocations so that they learned to play in a variety of settings.

Children also had the opportunity to also have Planned Free Play for an extended period 2-3 afternoons each week. This research was interested in finding out if the

literacy activities were making a difference to play and how children's play developed over time.

As Education Recovery continued, Topic Based play and learning experiences were included to develop the children's knowledge and understanding of science and social studies. Provocations were introduced to extend children's free play experiences relating to the topic.

Children would be allowed to vote for experiences in their play and provocations would extend learning. It would be seen whether observations and formative assessment would correlate with impact on children's vocabulary skills, specifically the BPVS Assessment, Naming Speed Assessment, and Listening and Talking Skills during Play. The research would also investigate whether the variety of different experiences would impact on the children's processing speed.

3.2.4 Control Group

The absence of a control group for this study was based on moral considerations. It would not have been ethical to offer a group of children one set of opportunities and exclude another group. However, pupil and parent surveys were able to guide us in the experiences of the children to measure children's experiences.

4 Findings & Analysis

Given the small sample size and absence of a control group in the research design, results are presented in the form of descriptive statistics with insights from qualitative data. While firm conclusions cannot be drawn from this study, it reliably reports on findings that were demonstrated to have an impact on literacy. Results are discussed primarily in relation to existing research findings and potential policy implications.

The main findings of the study were quantitative but were also informed through qualitative observations, formative assessment, and interviews. They are framed in relation to the study's research question: "How does Play and Outdoor Learning affect Literacy in a P2 classroom".

Vocabulary

A British Pictorial Vocabulary Scale (BPVS) Assessment to identify scope of vocabulary was conducted pre-intervention and post-intervention. The pre-intervention assessments and the post-intervention assessments took place 6 months apart.

Table 1 shows the mean Standardised Scores Pre-Intervention and Post Intervention, Chronological Age Pre and Post Intervention and the Equivalent Age according to the BPVS Standardised Score Pre and Post Intervention. This table shows that although there was an average of 5 months difference in chronological age between the two assessments, the children's mean Standardised Score increased by 12%. This equates to an average increase of 1 year and 3 months in equivalent age. It appears that the interventions involved in increased vocabulary were successful.

Measure	Mean Score Pre-Intervention (SD)	Mean Score Post-Intervention (SD)	Percentage Increase / Decrease
British Pictorial Vocabulary Scale (BPVS)	89 (22)	100 (11.9)	12% increase
Chronological Age	6 yrs 1 mths (0.3)	6 yrs 6 mths (0.4)	5 months age difference
Age Equivalent Mean Score	5 yrs 7mths (0.9)	6 yrs 10 mths (1.25)	21% increase or average increase of 1 year 3 months

Table 1: The Mean Score for BPVS Pre & Post Intervention, showing percentage increase/decrease

Graph 1 shows the Standardised Scores for each pupil pre and post intervention which clearly shows that most children's vocabulary equivalent age improved post-intervention.
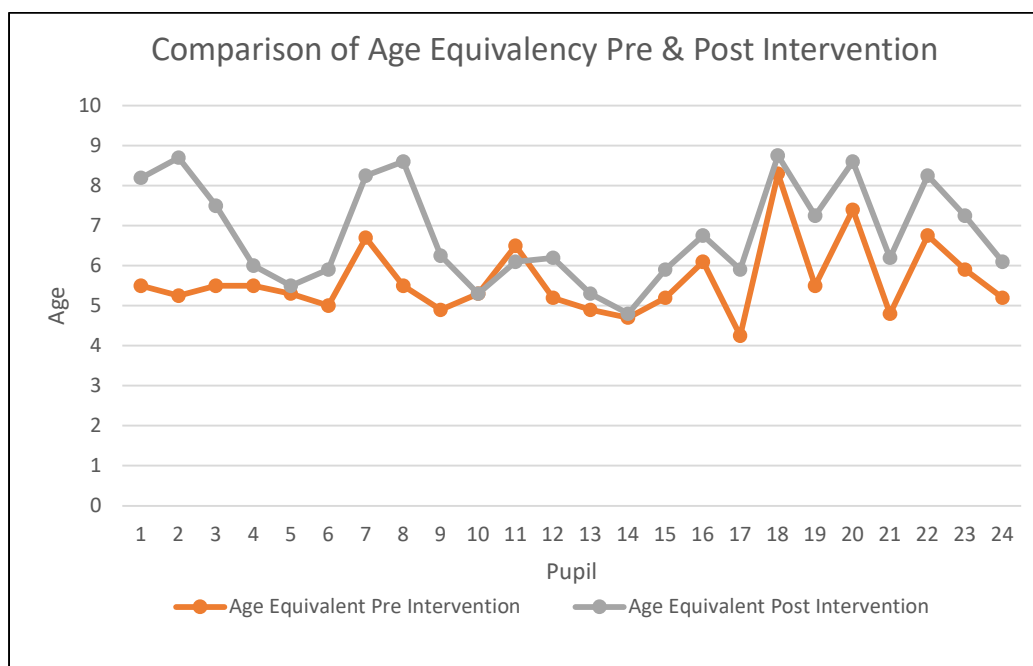
Graph 1: Comparison of Age Equivalency Pre & Post Intervention

Processing Speed

Assessments comprising of two tests: Naming Speed and Reading Speed were conducted pre and post intervention. The Naming Speed assessment corresponds to what are sometimes described as word-finding skills, the ability to think of words and quickly recall the right name for an object. The Reading Speed corresponds how quickly you can read a sentence and answer questions about it.

Table 2 shows the mean score pre intervention and post intervention for naming speed. The naming speed has increased by 18.1% post intervention. It appears that the interventions to increase word-finding and quick recall of words were successful.

The Reading Speed is also highlighted on Table 2. It shows that there was an increase of 36% in the ability to read at speed. This was the greatest score increase which shows that the reading and comprehension interventions had been successful.

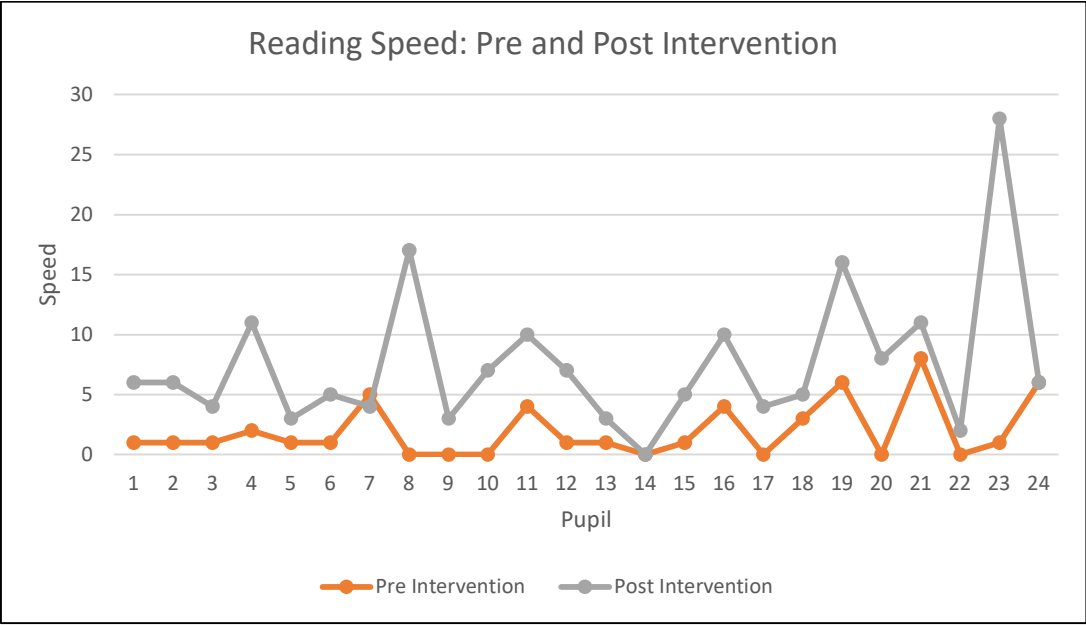| Measure	Mean Score Pre-Intervention (SD)	Mean Score Post-Intervention (SD)	Percentage Increase / Decrease
Naming Speed	67.0 (20.5)	79.1 (16.4)	+ 18.1%
Reading Speed	5.5 (17.1)	7.5 (6.0)	+ 36%

Table 2: The Mean Score for Naming Speed and Reading Speed Pre & Post Intervention, showing percentage increase/decrease

Graph 2 shows the comparison pre and post intervention for the Naming Speed Assessment per pupil. It is evident that most children increased their skills in this area.
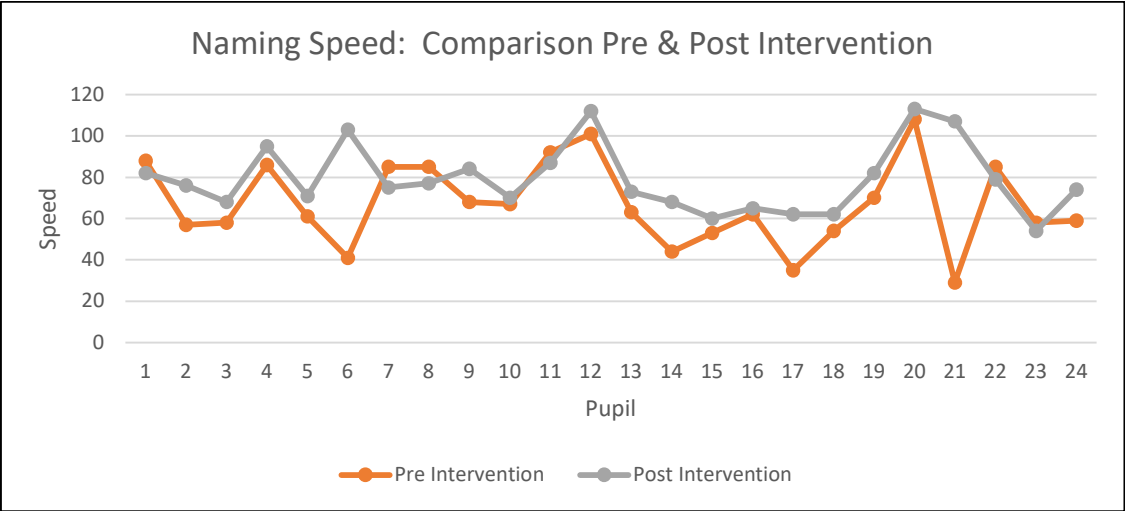
Graph 2: Naming Speed: Comparison Pre and Post Intervention

Graph 3 shows the comparison pre and post intervention for the Reading Speed Assessment per pupil. It is evident that all children increased their skills in this area.

Graph 3: Reading Speed: Comparison Pre and Post Intervention

Phonological Processing Skills

"Alphabetical skills are at the heart of the literacy-learning process in the early stages. Skill with the written word closely corresponds with spoken language skills; a reader needs to be able to hear the sounds within a word to read and write it accurately" (Turner, 2008).

Table 3 shows the mean score pre and post intervention for a variety of phonological processing skills.

| Measure	Mean Score Pre-Intervention (SD)	Mean Score Post-Intervention (SD)	Percentage Increase / Decrease
Phoneme Deletion	9.1 (6.4)	17.2 (6.1)	+ 89.0%
Non-Word Reading	7.8 (5.1)	15.5 (6.7)	+ 98.7%
Single Word Spelling Test	7.2 (3.1)	11.0 (3.6)	+ 52.8%
Single Word Reading Test	11.7 (6.4)	18.8 (9.2)	+ 60.7%

Table 3: The Mean Score Pre and Post Intervention for Phoneme Deletion, Non-Word Reading, Single Word Spelling Test, Single Word Reading Test, showing the percentage increase/decrease.

Phoneme Deletion is when you give a pupil a word eg hedgehog and ask them to repeat it without saying the word hog. This was a very difficult task at the pre intervention state however Table 3 shows that the children increased their mean score by 89%. Graph 4 shows an improvement in Phoneme Deletion by nearly every member of the sample. This indicates success in the Phonics programme used.
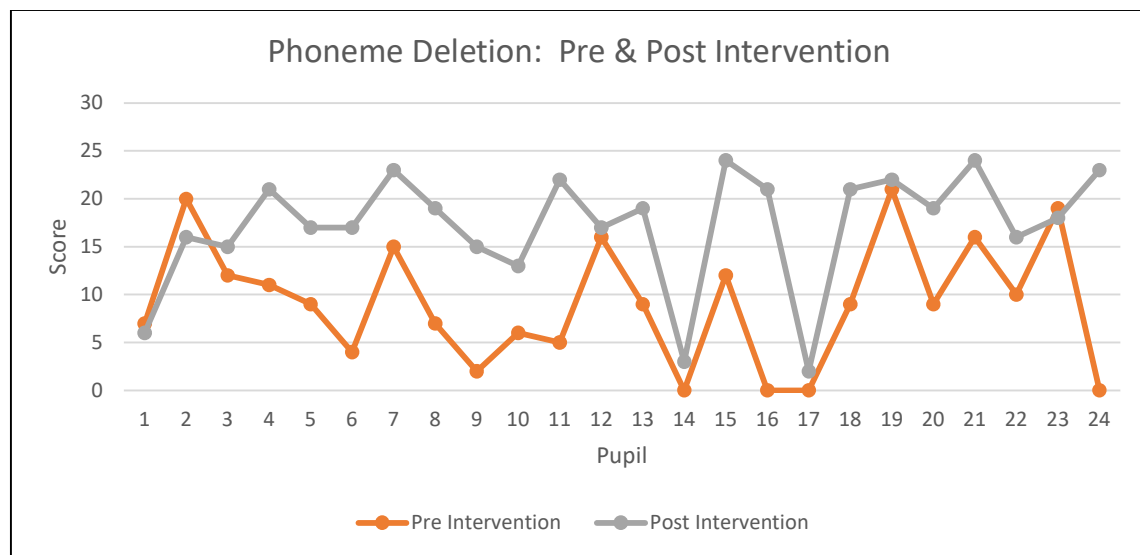

Graph 4: Phoneme Deletion: Comparison Pre and Post Intervention

Non-Word Reading is when a pupil reads a made-up word, for example "ilt", and must use their phonological skills to sound out the made-up word. At the pre-intervention assessment, this assessment challenged the children a great deal but their score increased dramatically by 98.7% at the post intervention assessment. Graph 5 shows an improvement in Non-Word Reading by all members of the sample. This indicates success in the Phonics programme used.
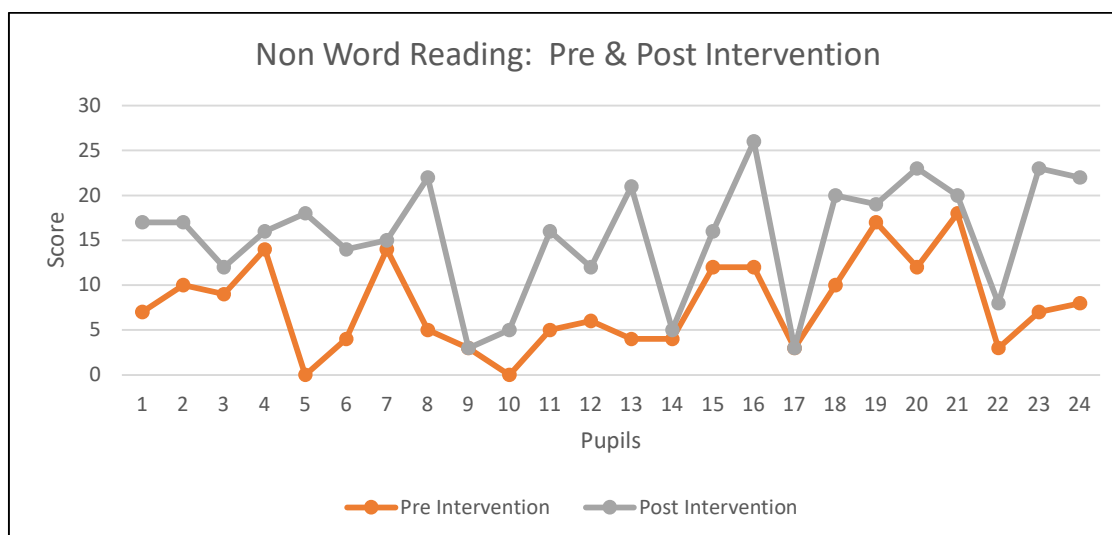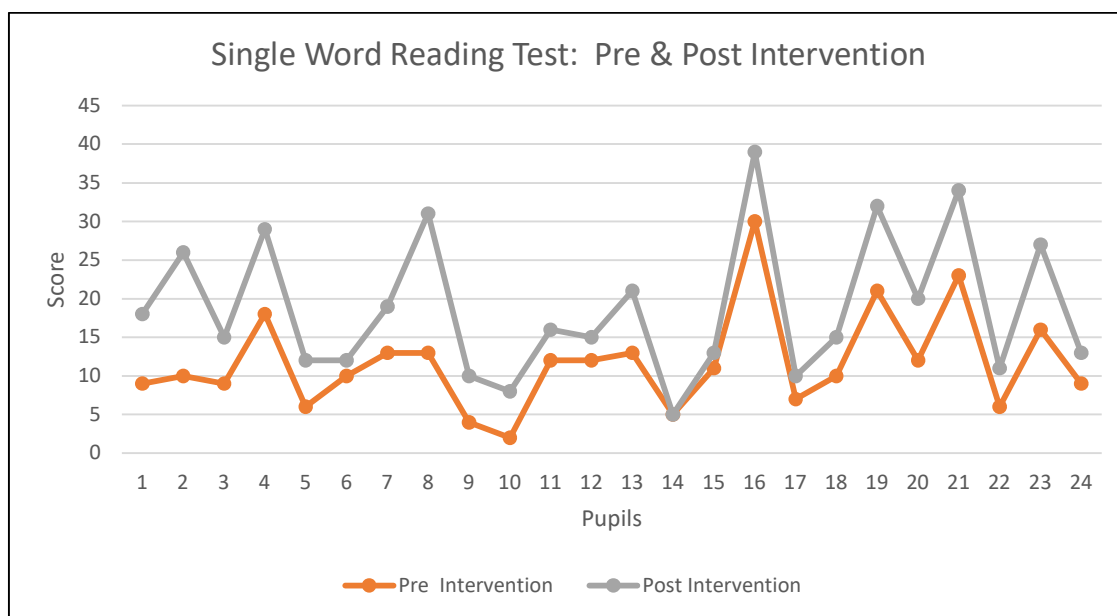
Graph 5: Non-Word Reading: Comparison Pre and Post Intervention

The Single Word Spelling Test was a spelling test based on a variety of increasingly difficult words that the children were able to spell. As Table 3 shows, the mean Single Word Spelling Test score increased by nearly 53% post intervention. Graph 6 shows an improvement in Single Word Spelling Test by every member of the sample. This links with the improvement in weekly spelling test results for each member of the class. These results indicate success in the Phonics programme used.
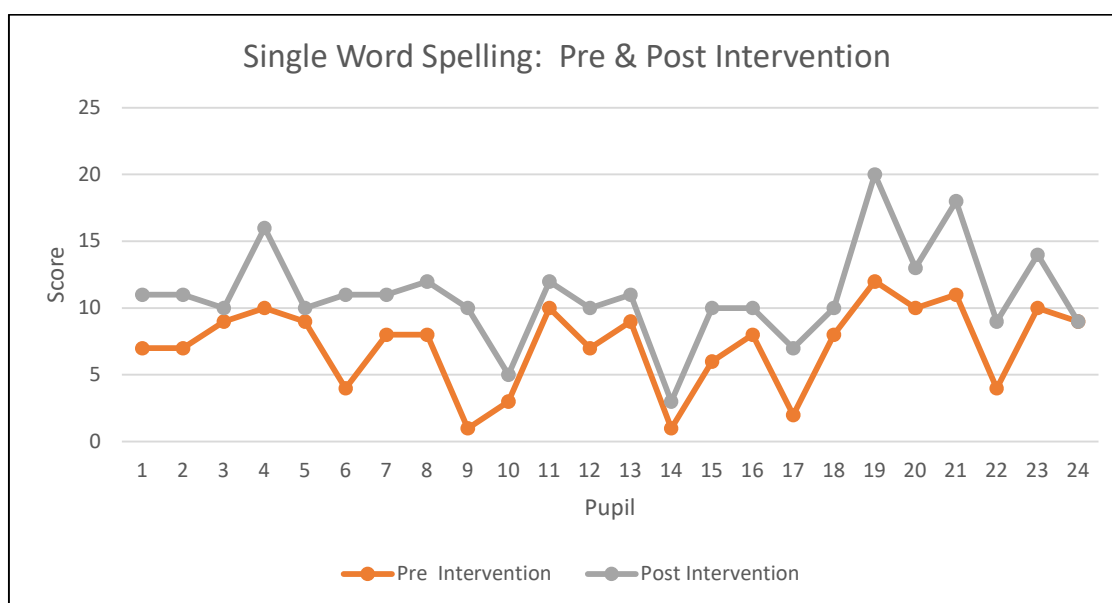
Graph 6: Single Word Spelling Test: Comparison Pre and Post Intervention

Single Word Reading is when a pupil reads single words with increasing difficulty and must use their phonological awareness and their knowledge of sight vocabulary. Table 3 shows an average improvement of nearly 61% across the sample. Graph 7 shows an improvement by every single member of the sample, indicating success in the Phonics programme used.

Graph 7: Single Word Reading Test: Comparison Pre and Post Intervention

Table 4 shows the increase in Rhyming Skills within the sample. "The ability to recognize and produce rhyming words is an important phonological awareness skill. Research indicates there is a correlation between phonological awareness and reading ability" (Carnio MS, 2017). The very significant increase in rhyming skills indicates a very positive correlation to the interventions and supports the increase in learning in spelling and reading skills too.

Measure	Mean Percentage of Children Pre Intervention	Mean Percentage of Children Post Intervention (SD)	Percentage Increase / Decrease
Rhyming Skills	16.7%	87.5%	+ 424%

Table 4: The Mean Percentage in Rhyming Skills Pre and Post Intervention, showing the percentage increase/decrease.

Working Memory

"The ability to hold verbal material in short-term memory seems to be central to learning the highly sequenced procedures of reading and spelling. While Recall of Digits Forwards is a straightforward measure of how well a student can do this, Recall of Digits Backwards requires that the student hold the material in memory while transforming it in some way (reversing it)" (Turner, 2008).

| Measure	Mean Score Pre-Intervention (SD)	Mean Score Post-Intervention (SD)	Percentage Increase / Decrease
Recall of Digits Forward	12.9 (2.7)	15.5 (3.2)	+ 20.7%
Recall of Digits Backward	5.6 (2.0)	9.0 (2.2)	+ 60.4%

Table 5: The Mean Score for Recall of Digits Forward and Recall of Digits Backward Pre & Post Intervention, showing percentage increase/decrease.

The Recall of Digits Forward assessment requires the administrator to read digits forward and the pupil repeats. The digits increase in length as the assessment continues. Table 5 shows that the mean score for working memory increased by nearly 21% and Graph 8 shows that this test for working memory increased post intervention for every child in the sample, except two.
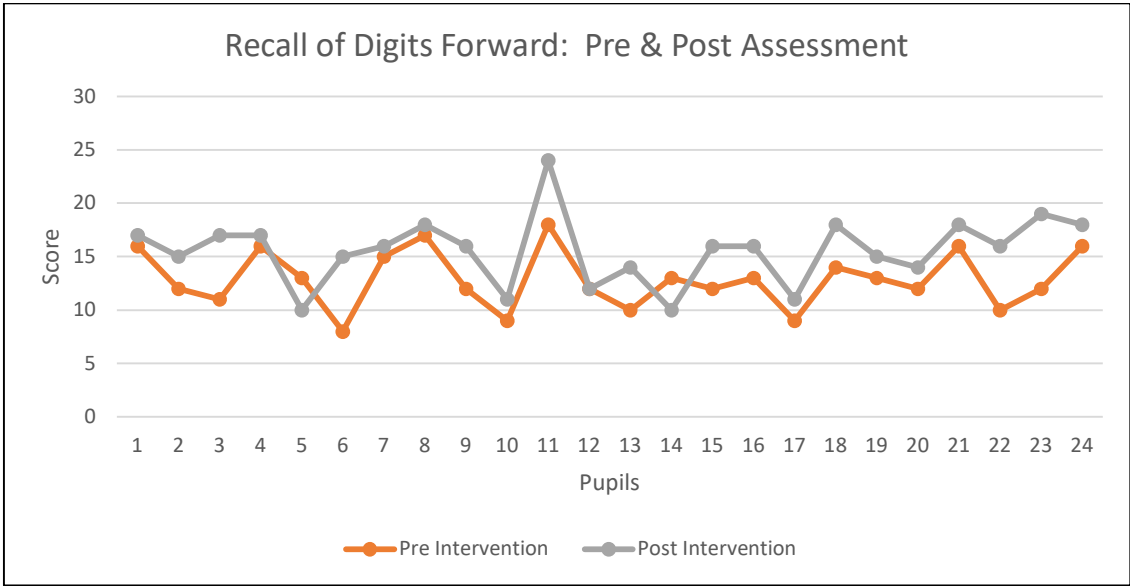
Graph 8: Recall of Digits Forward: Comparison Pre and Post Intervention

The Recall of Digits Backward assessment requires the administrator to read digits forward and the pupil reverses the digits so instead of saying digits 3 6 5 7 5, the pupil would say 5 7 5 6 3. The digits increase in length as the assessment continues. Table 5 shows that the mean score for working memory increased by over 60% and Graph 9 shows that this test for working memory increased post intervention for every child in the sample. This shows that the children are able to hold information in their head and transform it by reversing it. This ability to hold verbal information in short-term memory is an indicator to being able to learn the highly sequenced procedures required for reading and spelling.
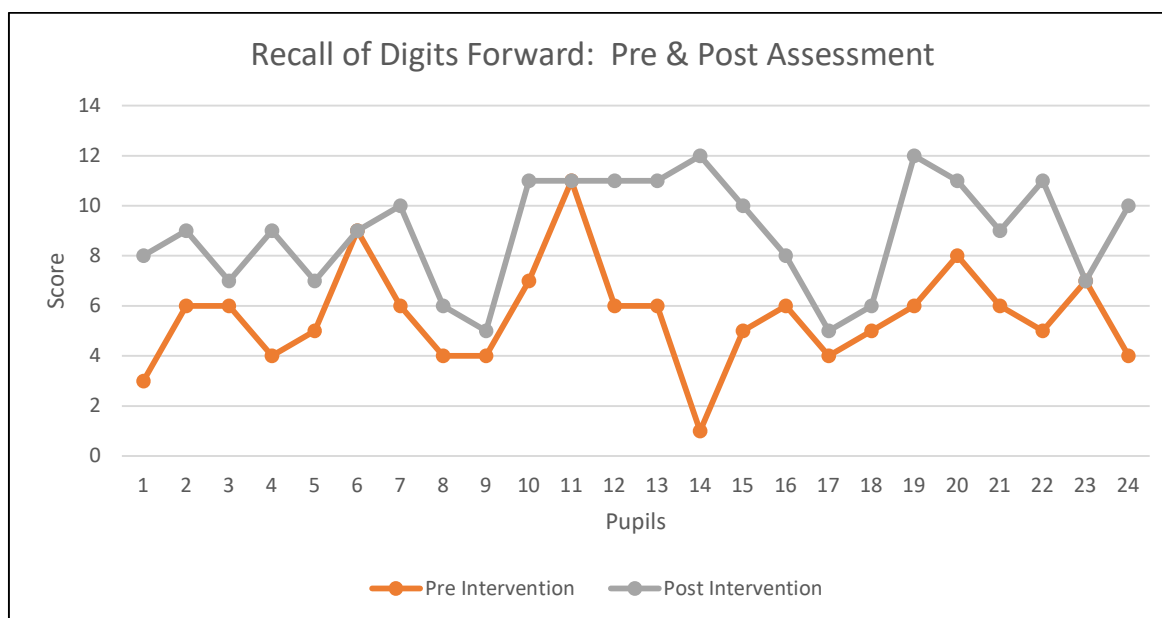
Graph 9: Recall of Digits Backward: Comparison Pre and Post Intervention

Writing

As a pre-cursor to writing, children must have the fine motor control to hold and manipulate a pencil. Pre-intervention, the children often had weak control of their pencil and they did not provide many details to their drawings. Observation of drawing post intervention showed a greater improvement to the children's pencil control and drawing skills. The children were putting more pressure onto the paper and they were providing more details in the drawing.

In addition to the drawing skills, writing assessment took a two-pronged approach. One test was the Copying and Free Flow Assessment. Test two was the assessment of Personal Writing.

The Copying & Free Flow test primarily samples productivity; the amount of writing a student can complete in a specific time. For this timed assessment, the children started with a copying task and as the time continued, the children engaged in an open-ended but straightforward exercise in free writing.

Table 6 shows that the children's writing scores increased significantly post intervention by nearly 178%. At the pre-intervention stage, the children only managed to complete some of the Copying task in the timed period however at the post intervention stage most managed to complete the copying task and had made good progress into the Free Flow task.

| Measure	Mean Score Pre-Intervention (SD)	Mean Score Post-Intervention (SD)	Percentage Increase / Decrease
Copying & Free Flow Writing	14.0 (9.2)	38.9 (14.4)	+ 177.9%
Personal Writing	4.7 (4.6)	19.3 (6.6)	+ 618.7%
Awareness of Sound	10.5 (3.3)	14.5 (1.5)	+ 38%

Table 6: The Mean Score for Writing Assessment Pre & Post Intervention, showing percentage increase/decrease.

Graph 10 shows the significance of the improvement for each pupil in the sample. Both Table 4 and Graph 10 show the overwhelming success of the writing interventions which were put in place.
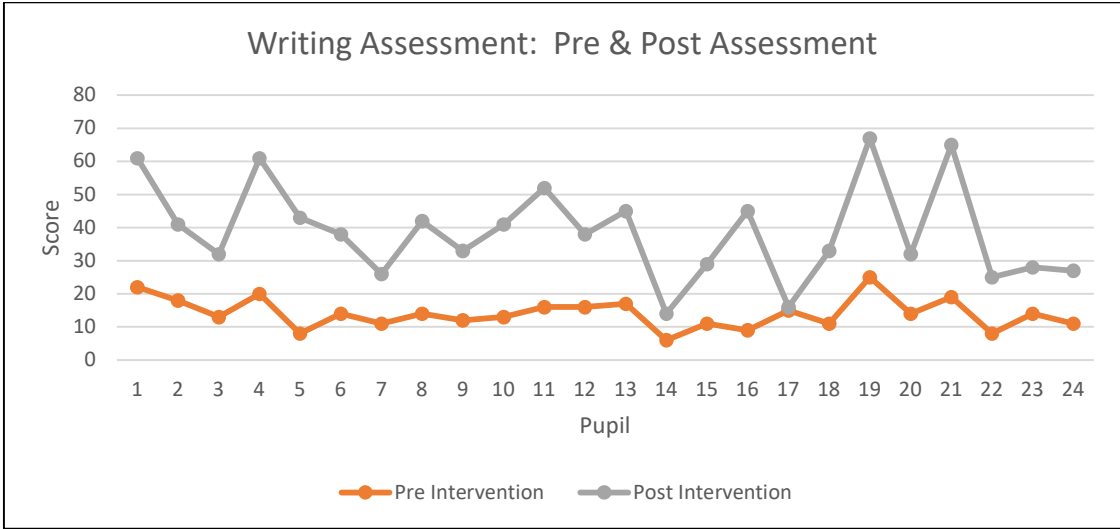
Graph 10: Writing Assessment: Comparison Pre and Post Intervention

The Personal Story Writing Assessment involved the children writing a personal story about something that happened in their lives. No support was given to the children during the assessments at all. They were simply asked to write their news. They were given their own word book which they had been using throughout the year but it was their choice to look at it. No support for spelling was given. Writing was assessed using specific criteria and each criterion demonstrated was awarded one point. Table 6 shows an increase of nearly 619% in the points given to the children's writing skills post intervention and Graph 11 shows the significant improvement for each child. Clearly the writing interventions were very successful for this sample.
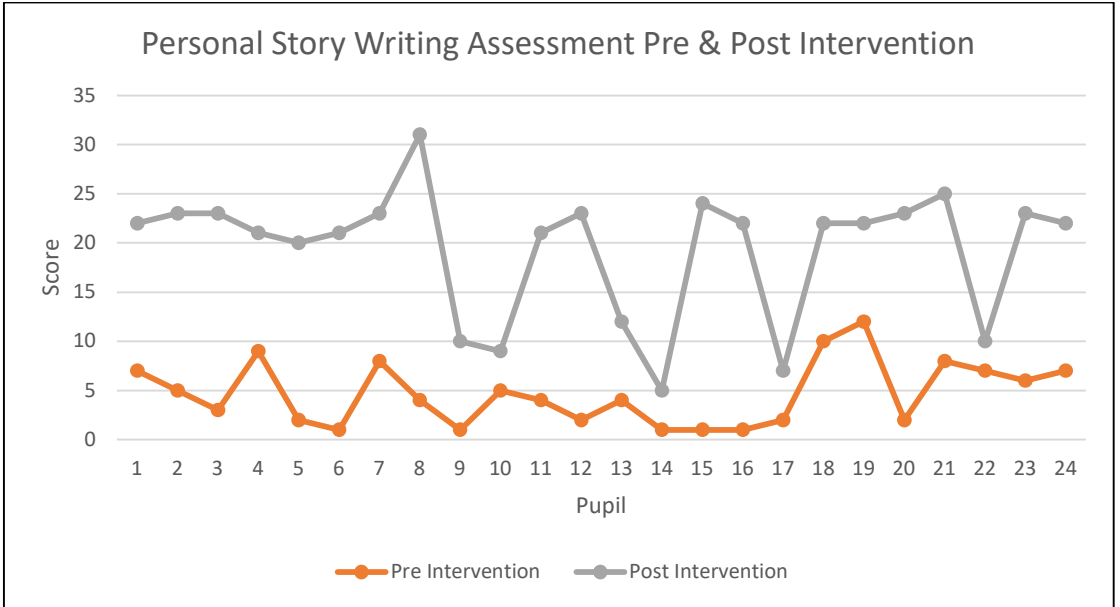
Graph 11: Personal Story Writing Assessment: Comparison Pre and Post Intervention

The Awareness of Sound Assessment assessed whether a child could identify the number of words within a sentence. Table 6 shows that the mean score was 10.5 out of a total score of 15 pre intervention but the sample increased their score by 38% post intervention by gaining 14.5 out of a total score of 15. Table 7 shows that the sample found this difficult pre-intervention. No child in the sample were able to decipher the correct number of words in a sentence correctly for each sentence. Post intervention, 92% of the children managed to gain full marks in this test. This reinforces the significance of interventions for phonics, reading and writing.

Measure	Percentage of Sample who Gained Full Marks Pre-Intervention	Percentage of Sample who Gained Full Marks Post Intervention	Percentage of Sample who Gained Full Marks
Awareness of Sound	0	92%	+ 92%

Table 7: The Mean Score for Writing Assessment Pre & Post Intervention, showing percentage increase/decrease.
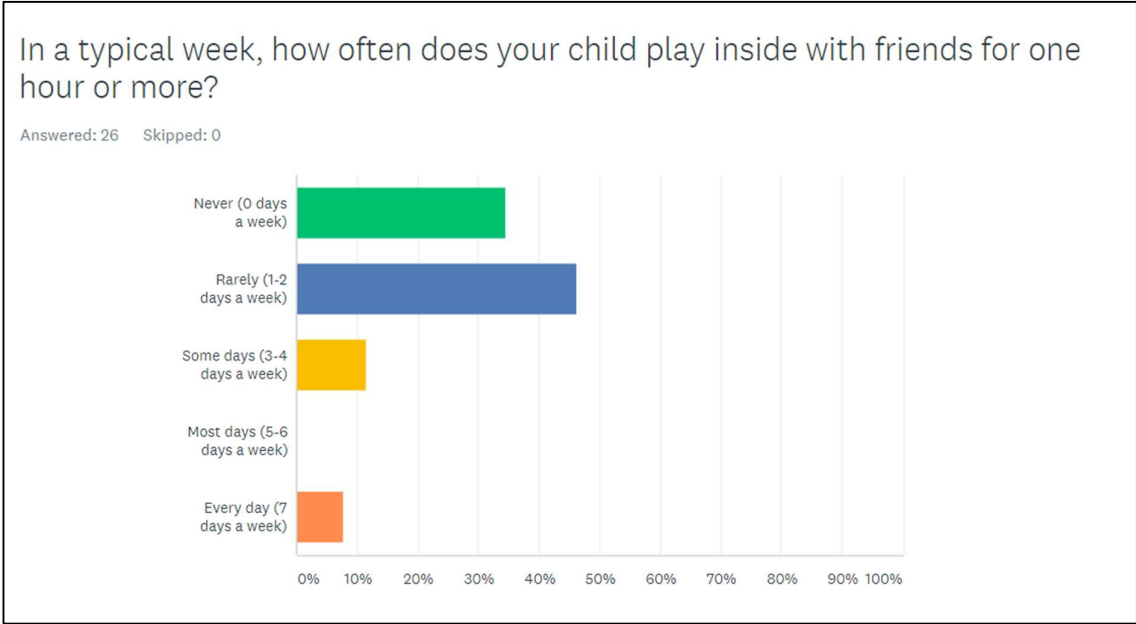

Play

As part of the Education Recovery programme, mental health and wellbeing was a priority following the Covid-19 lockdown of March 2020 because the children had not been in school for 5 months. Play was an important aspect of this recovery programme. Indeed over 90% of teachers surveyed across a variety of local authorities said that Play made the most impact on socialisation and mental health (see Graph 12).
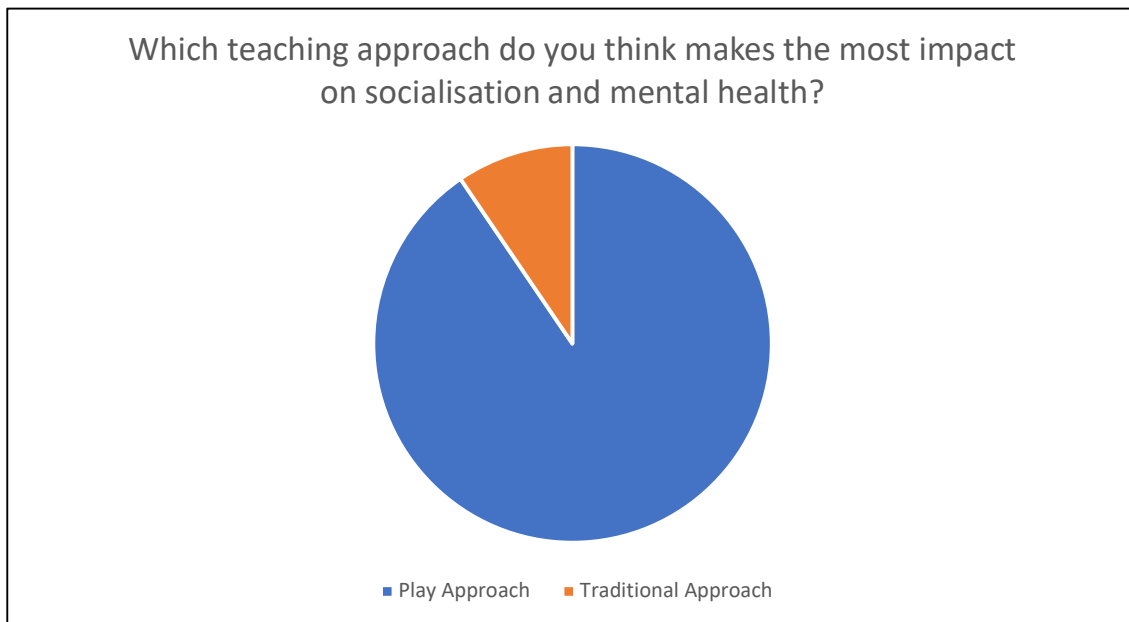

Graph 12: Teachers surveyed on which pedagogy they think makes the most impact on socialisation and mental health.

According to parents in the pre-intervention survey in September 2020, 80% of children never or rarely played inside with friends for one hour or more in the most typical recent week (Graph 13a). Due to Covid-19 children were only allowed to play with other children during the lockdown from July 2020. This information shows that parents were still worried about their child playing inside with others. These figures correlate with the children's interviews.

Graph 13a: How often does your child play inside with friends for one hour or more?

Graph 13b shows that 50% of children did not play outside for one hour or more in September 2020 even though there has never been a restriction of outdoor exercise during the COVID-19 lockdown. Parents were still worried in September 2020 about their child going outside. These figures correlate with the interviews of the children too.
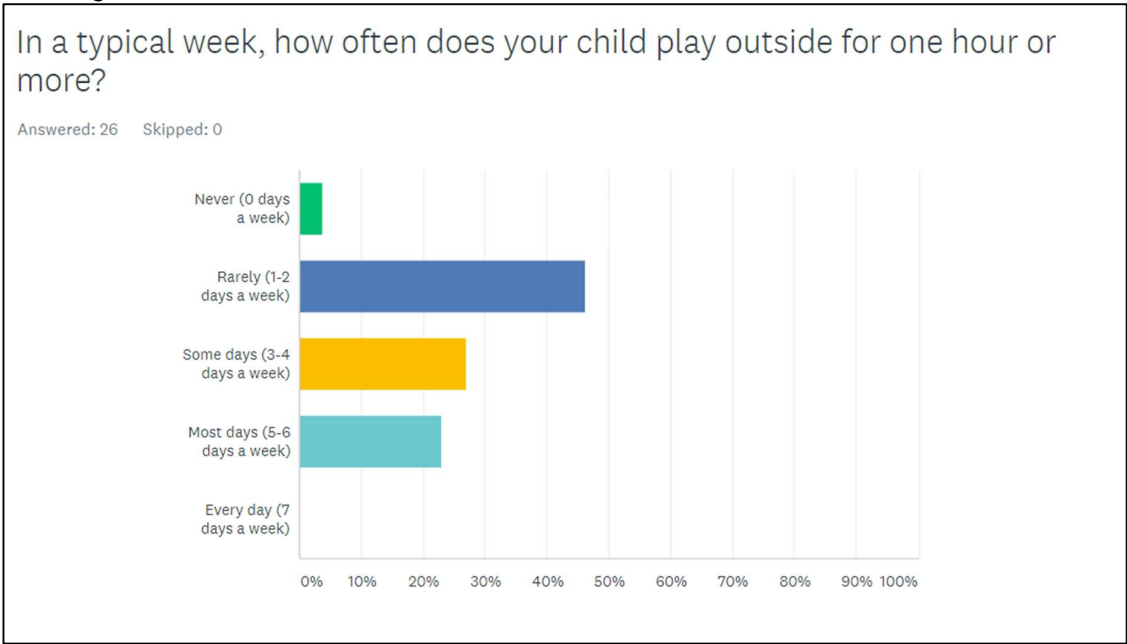
Graph 13b: How often does your child play outside for one hour or more?

To assess whether the lockdown had an impact on children's play, children were assessed pre and post intervention using The Leuven Scale for Involvement. This scale looks at how engaged children are in play. It ranges from Extremely Low Activity at Level 1 to Extremely High Activity at Level 5.

Measure	Mean Score Pre-Intervention (SD)	Mean Score Post-Intervention (SD)	Percentage Increase / Decrease
Leuven Scale for Involvement	2.9 (0.5)	4.6 (0.8)	59%

Table 8: The Mean Score Pre and Post Intervention using the Leuven Scale for Involvement in Play Activities

Children's inability to play with friends inside or play outside for an hour or more pre intervention was a significant factor in how they showed involvement in play. Assessment using the Leuven Scale showed that pre-intervention, children were identified as being rated between 2 and 3 on the scale. Clearly the lack of socialisation affected children's socialisation skills. This was evidenced in Remote Learning during the lockdown in January-February 2021. Children sometimes found it upsetting to see their classmates in virtual lessons, some found it difficult to talk and were withdrawn. When asked to draw how they were feeling, children drew sad, tearful, and frustrated faces. One parent disclosed that their child was even frightened of going outside. All children indicated that they wanted to be back in school. The lack of time spent outdoors and socialising affected children's mental health and socialisation skills.

However, post intervention, assessment using the Leuven Scale showed that children scored between 4 and 5 (extremely high activity) on the scale. Table 8 shows that this equated to a 59% increase as a class. Graph 14 shows how children developed over time, pre intervention, during the intervention and post intervention. Except for a couple, most children showed a good improvement in their engagement in play. Children used vocabulary that they had learned in Outdoor Learning and in Classroom Learning in their play and they were able to use it in context. In fact, it was observed that literacy and outdoor learning activities extended children's play.

However, according to the parental surveys pre and post assessment, still few children had the opportunity to play inside with friends. In fact, 81% of children pre-intervention never or rarely played inside with friends and 80% of children post intervention never or rarely played inside with friends. This is a similar picture to playing outside with friends. Parents are still anxious. Therefore, the improvement in socialisation skills had come from the play opportunities at school.
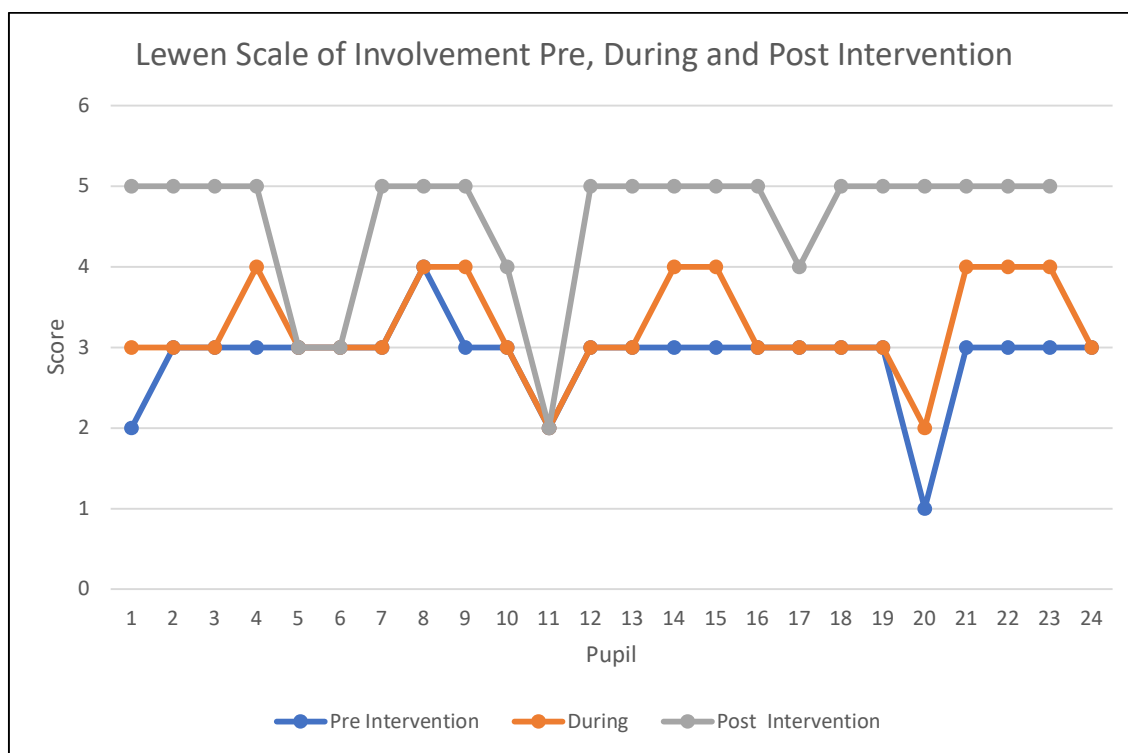
Graph 14: Lewen Scale of Involvement Pre, During and Post Intervention

Observations showed that pre and post intervention, children preferred free play over 'literacy activity' focussed areas. They preferred to go to the role play corner, small world area, art area or the construction area. They did not visit the set up for maths or literacy games unless specifically directed by an adult. They did not visit the class library unless directed. However, children did enjoy visiting the Writing Area pre intervention to draw, and post intervention to write books and letters.

Having spent a lot of time creating maths and literacy games, observations showed that without an adult or direct instruction, children did not visit these areas often. This suggests that more adults are required in the playroom to encourage children to build these skills or it suggests that there is no need for games as children like to make up their own games. It also shows that if children do not visit these areas for learning, then the traditional approach to learning is vital to improve attainment in learning.

As a teacher, I took an approach to literacy teaching and learning where children engaged in a taught lesson, they completed a follow up task and enjoyed play based tasks as well as free play. I found that I could plan, teach, assess, and know the next steps of all the children in my class and the evidence shows that literacy attainment improved significantly for most of the children in my class most of the time.

When surveyed, over 76% of teachers across authorities stated that they believed that more traditional approaches made the most impact on attainment (see Graph 15).
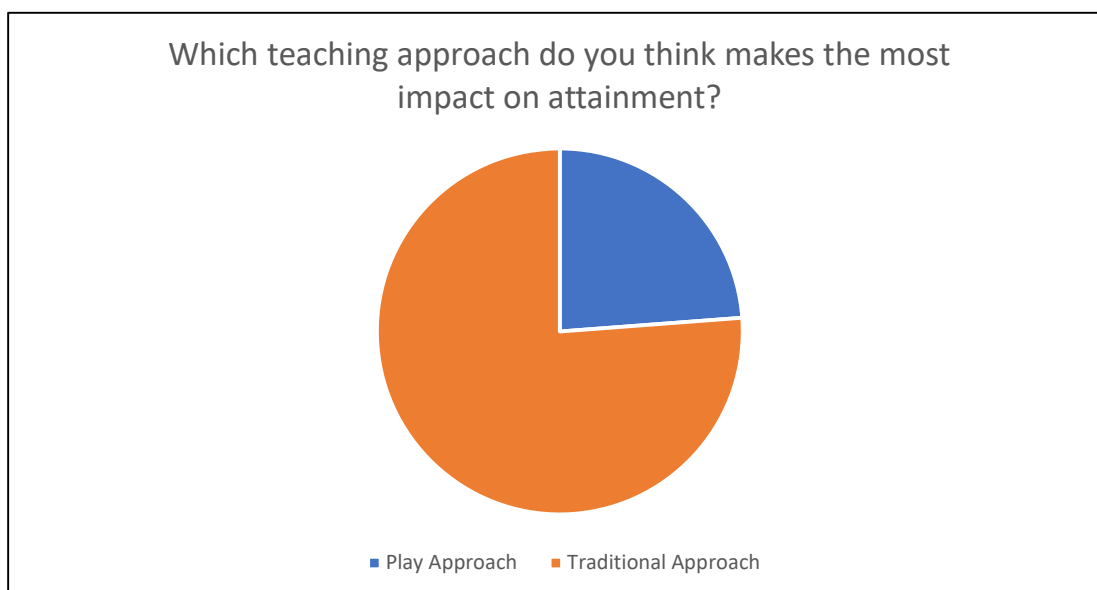
Graph 15: Which approach teachers across authorities thought made the most impact on attainment.

This is not surprising when we see that 86% of teachers expressed that children's listening skills were poor or less attentive when other children were playing; and over 76% of teachers said that children's concentration was poor or less attentive when doing target tasks when their peers were playing (see Graph 16).
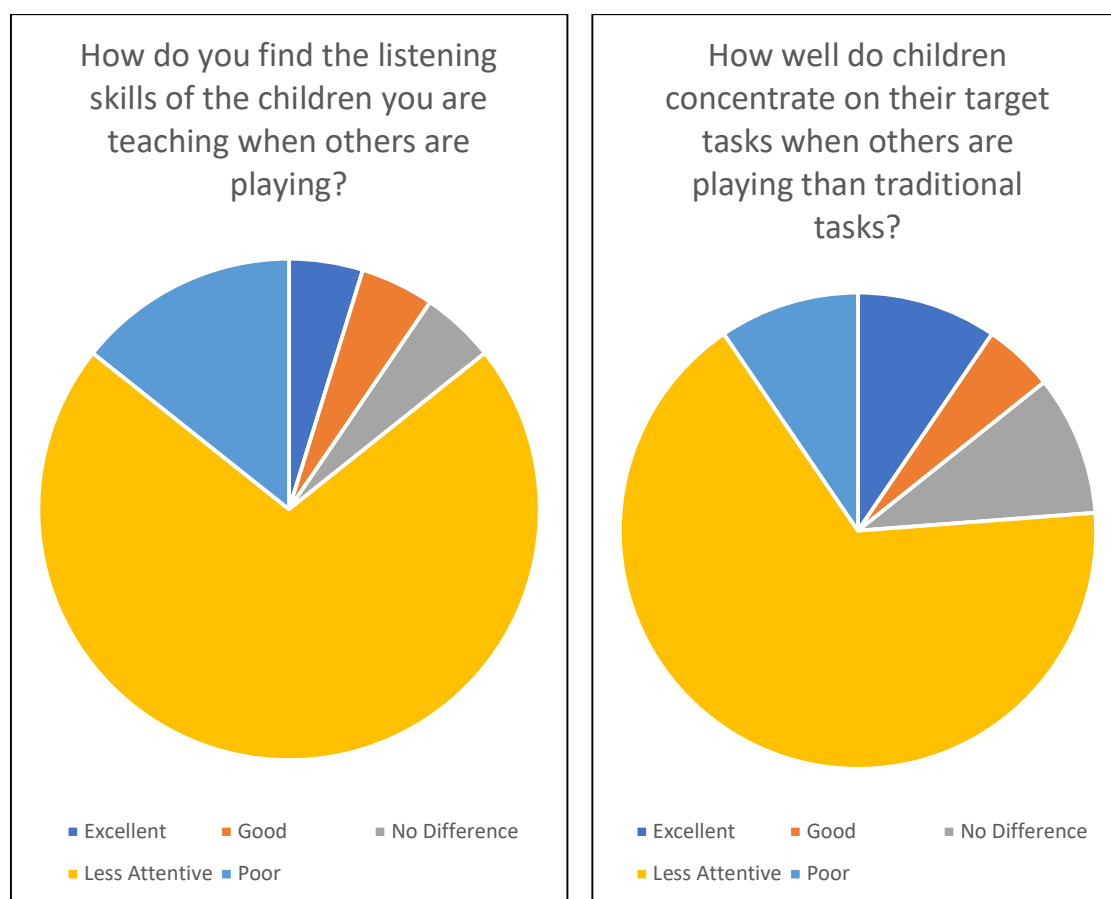
Graph 16: Listening skills and concentration of children with a play approach

However, when the children had free play in the playroom, I found it impossible to support and extend the learning of all children there. Professional dialogue with other teachers has indicated similar experiences and surveys show that nearly every teacher questioned mentioned that additional adults in the play area would help to ensure that children's learning is extended. Finland, for example, has a play-based approach until children reach 7 years old. This play-based approach is supported by a high ratio of adults to children. In fact, there are about 10 children per teacher in Finland, this excludes non-teaching staff, such as auxiliary staff (OECD, 2016).

Informal discussions with teachers who were changing to a play pedagogy indicated that teachers found it difficult to manage free play and group teaching and were stressed with this approach. As Graph 17 shows, there is little wonder that teachers are finding it difficult as they are not clear about the approach or expectations of the many stakeholders within education. Only 19% of teachers surveyed said that they were clear about the expectations of school management regarding a play approach to learning; less than 5% were clear about the expectations of parents; and less than 5% were clear about the expectations of HMIe. In contrast, 38% of teachers were clear about the approach expected by their local authority. Teachers want teaching and learning to be effective but it is difficult when they feel a lack of clarification from various stakeholders and vague or contradictory information from different sources.
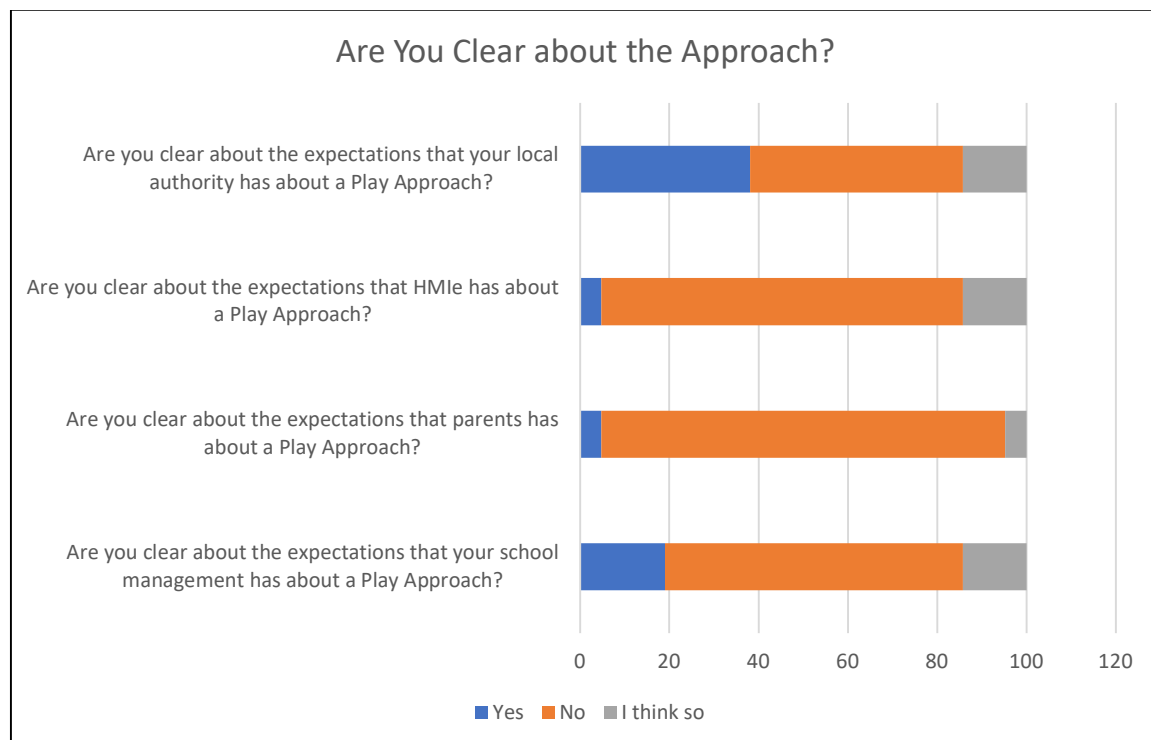
Graph 17: Teacher show that they are not clear about expectations of stakeholders.

Teachers found many challenges with a play pedagogy. Firstly, they were not trained in play properly and therefore felt unskilled in using a Play Pedagogy. Teachers were told to implement a play approach with no clear guidance with each stakeholder having the same expectations. There seems to be a confusion about the pedagogy; should they be teaching reading, writing and phonics or should they just be allowing children to play? Teachers talked about the need to follow Curriculum for Excellence Experiences and Outcomes and achieve Benchmarks and Levels but did not know how they could do this and achieve all expected Levels with a Play Pedagogy. There were also contradictory assessment procedures: observations or summative SNSAs or both?

Next, teachers expressed that they found it challenging to provide good quality learning and teaching. The majority of teachers expressed the noise level to be a challenge for themselves and for the children, making it difficult to concentrate. Teachers at teaching tables also found behaviour management an issue. Due to a lack of support, teachers were often called away to deal with incidents in the play area. This meant a poorer quality of teaching and caused a reduction of learning time for the small group.   Teachers mentioned how difficult it was to engage children at the teaching table as they did not concentrate well and constantly asked to play. The children were more distracted by what was going on around them at the teaching table, making it a challenge to engage the disinterested pupil. Some children even refuse to complete seated traditional tasks. Children completed targeted tasks quickly and not to a high standard. In addition, teachers often fund it difficult to keep track of the children who did not do their target tasks. Indeed, by the end of P1, some teachers still felt that their class were not ready for target tasks.

Although it is beyond the scope of this paper to ascertain the literacy attainment of children in classes where there is a play pedagogy, teachers also shared that in previous years, similar aged children would have progressed a lot quicker.

Those teachers who were changing to a play pedagogy also talked about the stress and challenge of this approach. There was a confusion over what a play approach is: is it free play or purposeful play? They did not know if /how to challenge children when Play should be child led/initiated (Teachers, 2021). They found that the many time constraints made it difficult to implement a Play Approach meaningfully: there was a lack of time to prepare provocations, assess learning, work with groups, extend learning through play, talk with individuals etc.

Overall, the consensus was that there is confusion about a Play Approach, assessment, and expectations. There is a lack of funding and resources to implement play well and to support good, quality play. Furthermore, a play approach is difficult to manage alongside Benchmarks and the achievement of Curriculum for Excellence Levels. Teachers cannot be expected to bring forward two pedagogies simultaneously or be expected to deliver a new approach when they have not been properly trained.

Outdoor Learning

As part of the Education Recovery programme and the risk involved with transmission of COVID-19 in school, Outdoor Learning was encouraged.

As seen in Graph 13, children had not had many experiences outdoors. Parental surveys pre-intervention showed that few children went outside their own garden area, if they had one, and many children did so to 'tidy up the garden'. This correlates with the children's own responses although many said that they played on their trampoline on their own.

Pre-intervention showed that few children did not talk, play, or write about their experiences outdoors. Few children described places using appropriate vocabulary. Outdoor learning did not seem to be a large part of the children's life pre-intervention. Children talked a lot about being indoors, playing with technology and watching films. This could have been because of the pandemic.

Post intervention children started to talk and write more about their experiences outdoor using appropriate vocabulary. They wrote about bicycle rides, going to the park, going to the shops, visiting people, having Easter egg hunts, and going to the refuse centre. Clearly parents were

becoming less anxious about allowing their children outside, however it seemed that children remained in family groups.

Following outdoor learning interventions, children were able to write about their visits to the different places which they had visited with more detail. They showed that they had improved their vocabulary and they had definite information that they wanted to share in written and oral form about their visit. Observations showed that the children played using vocabulary, ideas and games learned from outdoor learning activities. As Table 1 and Graphs 1-4 showed, the children's BPVS improved.

Additional Research

There is always more to research in education to drive forward improvements. However further research based on this research would be useful, particularly the following research:

- Having a control group to compare and having larger samples.
- Comparing last year's cohort group.
- Doing a longitudinal study at the end of P7 and at the point of school leaving age to compare how children attain in literacy with a play-based approach compared to a traditional pedagogical approach; how children attain in literacy with an outdoor learning approach compared to a non-outdoor learning approach; and how children attain in literacy with an outdoor learning and play approach compared to a non-outdoor learning and non-play approach.

5 Conclusion & Implications

Both play and outdoor learning have positive effects on health, socialisation, and literacy attainment. It has been shown from the findings in this research that play and outdoor learning have extended literacy skills, particularly children's range of vocabulary. However, it is also very clear from the findings of this research that the improvements in children's literacy skills were not mainly to do with play or outdoor learning. In contrast the improvements in children's literacy skills were influenced by pedagogy: a traditional approach to literacy which allows for teachers to plan, teach, and assess children and then for children to put their learning and knowledge into practice through play. From the findings, it appears that play and outdoor learning support literacy but they are not a reliable way to progress in literacy on their own. Although not empty vessels, it was found from this research that children needed to learn something before they played with this knowledge.

It is good for children to have structure in the classroom. It is good to have daily routines for all children, particularly those with Special Educational Needs. It is good for children to have time to do tasks in a peaceful environment, without the desperation to play because that is what their friends are doing. This only introduces/reinforces the thought that work is a negative concept. Children enjoy quiet time. Many children are ready to start formal learning.

This research shows that a traditional pedagogy for Phonics, Reading and Writing is essential for improvements in literacy attainment. As can be seen from this research young children are ready to read and write and can do so very successfully at age 5/6 years in P2. Young children can learn to use a pencil properly and can develop fine motor skills to write beautifully using this approach to learning. Children are engaged, they learn and they can put their learning into practice in their time to play. The skilled practitioner can assess and manage this but they can also implement the 7 principles of curriculum design and can scaffold learning. During this research period, parents have praised the engagement of their children in their schoolwork and have been very pleased with their child's progress. However, literacy attainment increased with play and outdoor learning in conjunction with more formal learning.

Therefore, from the findings of this research, it seems prudent to use a *balance* of both pedagogies; a traditional approach to literacy *and* a play-based approach. Note, a *balance* of approaches is different from a *mix* of approaches; a *balance* is where the formal learning happens and then the informal learning occurs; a *mix* of approaches is when the formal learning happens alongside the informal learning.

However, as a play pedagogy is becoming more prevalent in P1, P2 and beyond, there are some implications for education.

Expectations

Firstly, teachers and school management must be in agreement about the approach to be taken and how it is to be conducted. If school management have certain expectations and the teacher has different expectations then there is an issue. Teachers want to know the expectations of management, HMIe and parents. Practitioners are often faced with competing demands of the curriculum and the requirements of school management and HMIe. Clarification around the expectation of play with the coverage of Experiences and Outcomes and achievement of Benchmarks and Levels is required. This needs to be clarified and agreed with the whole school staff because children who have grown up with a play pedagogy will need the opportunity to adjust to formal schooling as they move up the school.

A play pedagogy also needs to be examined carefully for its daily delivery. It has different planning, teaching and assessment from a more traditional pedagogy. Teachers need clear guidance about what play pedagogy is, how to plan it, how to deliver it, what to do, how to structure the day, how to assess it, how to moderate it, how to extend learning and provide challenge, and how to provide depth, breadth, progression, coherence and relevance, enjoyment, and personalisation and choice.

A clear approach must be taken. With a mix of approaches, this research shows that play is difficult and stressful to manage and the education of the small group suffers as the teacher is called to deal with an incident with the children who are playing. Engagement, understanding, and learning is lost for all. A clear approach must be agreed regarding Outdoor Learning too to ensure that children are provided with the experiences they are entitled to.

Parent must also be understanding of the approaches taken otherwise their expectations may be different from that of the school, causing consternation and complaints.

It must be clear and agreed from the start how learning is to happen and how this is to be structured in a school setting.

Human Resourcing

If a Play Approach is taken, more adults should be supporting the pupils and the teacher. A nursery with a play approach has a small ratio however this is not provided in a primary school setting with a similar approach. Similarly good practice in Outdoor Learning requires smaller group sizes with a supportive adult. Clearly there is a need for additional teachers in schools to allow for a Play Approach and Outdoor Learning to take place effectively.

Furthermore, many teachers are now reluctant to teach in infant classes which may cause a concern regarding staffing. Teachers are not trained in a play pedagogy and the expectation to change to a completely different pedagogy is very stressful and unfair. To change pedagogy successfully, teachers need to be trained well.

Material Resourcing

With a change of pedagogy, there is a change needed in resourcing. With a play approach, lots of natural materials are required, from recycled materials to natural materials. This requires replenishing frequently and requires time to do this. Similarly outdoor learning enjoys a bounty of nature however there is a need for clothing for teachers and children to be able to take part in such activities more often and the opportunity to wash and dry these items. Furthermore, outdoor learning is not just working outdoors. Teachers are required to teach about the outdoors and nature too. To motivate and encourage teachers to deliver more outdoor learning, they need to be trained in this pedagogy too.

Domino Effect

If a Play Approach is taken, we need to re-think the whole education system in Scotland. It has been muted that a Play Approach will pervade the primary education system. Already informal discussions have shown that children who have grown up with a play approach, where there are few desks and chairs, have found it very difficult to work at desks with chairs as they have progressed through school. This is a simple and practical issue, which needs to be evaluated.

It may be that children do not begin formal learning until P3 or P4. Therefore, learning to spell, read and write in sentences will not take place until P3 and P4. Some may say that the children will be ready to learn well by then and it will not take them long to 'catch up'; others are concerned that the consequence of this will be that attainment will be poorer.

Moreover, there is a concern that play will have a domino effect as to whether children will be ready to transition to secondary school.   For this reason, it is vital that the whole education system understands the significance of a play approach as it may affect every aspect of education.

Furthermore, a clear progression of play and outdoor learning must be evident so that teachers can support the development of children as they progress through the school.

Teacher Effect

As the research shows, the 'teacher effect' is real. Teachers must be knowledgeable, engaging experts in their field. They must have high expectations of the children and have high standards in their teaching. Forcing effective teachers to take an approach for which they were not trained nor consulted, will have a detrimental effect on standards in our education system, motivation within the teaching force and issues with the retention of excellent teachers.

It seems that play and outdoor learning supports literacy learning however a balance of approaches is needed to support children attain. Moving from a traditional pedagogy to a play pedagogy is a significant step. There is plenty of research which shows that children learn through play and outdoor learning. However further study is required to establish how attainment is achieved in the long-term.

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