Business & Social Science
IJRBS

Research in Business & Social Science

IJRBS VOL 12 NO 3 (2023) ISSN: 2147-4478

Available online at www.ssbfnet.com
Journal homepage: https://www.ssbfnet.com/ojs/index.php/ijrbs

Impact of play-based learning on the development of children in mobile early childhood care and education centres: Practitioners' perspectives

Blanche Ndlovu [(a)] *Chinedu Okeke* [(b)] *Zukiswa Nhase* [(c)] *Christian Ugwuanyi* [(d)]
Charity Okeke [(e)] *Moses Ede* [(f)] *

[(a,c)]*Department of Childhood Education, Faculty of Education, University of the Free State, Bloemfontein, South Africa.*
[(b,d,f)]*Department of Education Foundations, Faculty of Education, University of the Free State, Bloemfontein, South Africa*
[(e)]*Department of Social Sciences and Commerce Education, Faculty of Education, University of the Free State, Bloemfontein, South Africa*

ARTICLE INFO

Article history:

Received 12 March 2023
Received in rev. form 18 April 2023
Accepted 24 April 2023

Keywords:

Early Childhood Care and Education (ECCE), Children, Facilitators, Mobile Centres, Play-Based Learning Approach

JEL Classification:
I23

ABSTRACT

Play-based learning is a pedagogical approach that emphasises the use of play in promoting multiple areas of children's development and learning. Free play and guided play are two types of play-based learning which guide early learning. The children acquire concepts, skills, and attitudes that lay the foundation for lifelong learning through play pedagogies. Exposing learners to a rich vocabulary through reading, story-telling, and social interaction is key in play-based learning. This research aimed to explore the impact of play-based learning on the development of children in mobile Early Childhood Care and Education (ECCE) centres. Social constructivism theory was used to understand the impact of play-passed learning on children's development in ECE. Using convenience sampling, the research followed an interpretive qualitative case study, and eight (8) practitioners were selected to participate. Data sources included practitioners' interviews and the centres' observations. Using the thematic approach, the findings revealed that the practitioners in rural areas had an insufficient understanding of teaching using play pedagogies. This had a negative impact on standard provisions for play pedagogies suited for young children, where appropriate suggestions are offered to the practitioners on the planning, implementation, and support of play practices within early learning. Furthermore, there is a shift in the early learning curricula which incorporates advanced academic skills, a beneficial tool to aid children's learning and development.

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Introduction

The impact of play-based pedagogies has seen Vygotsky believe that cognitive growth occurs within social interactions (Roden & Szabo, 2017). Play in early childhood classrooms incorporates social interactions between children. There are quite several categories that play can fall into. Unstructured play allows children to negotiate, share, work in groups, resolve conflicts, and learn self-advocacy skills (Yogman, Garner, Hutchinson, Hirsh-Pasek, Golinkoff, Baum, 2018). Unstructured play allows children to move and play at their own pace, discover their own interests, and learn decision-making (Lowry, 2006). The type of play used in most preschool settings is structured play or guided play. This is where a teacher sets up intentional learning targets for each centre. Guided play is structured to directly teach academic skills and concepts (Massey, 2013). Each item in the centre is put there for an intended purpose. These play experiences are carefully thought out by the practitioner. Numbers or letters may be put in centres that are not typical, such as in the block centre or the sensory table (Tang & Hang, 2003). There are also materials the practitioner can set out that let

* *Corresponding author. ORCID ID: 0000-0001-6291-7250*
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https://doi.org/10.20525/ijrbs.v12i3.2358

learners explore with less of an intended academic purpose but to foster children's creativity and interest. Providing the writing area with various materials based on the children's needs, such as sandpaper letters for finger tracing, sand trays for writing letters, brushes, paints, and jumbo pencils (Rushton, 2011). Nonstandard materials can be put in the centres for learners to explore and learn from. Mowafi, Abumuhfouz and Redifer (2019) proposed research on interactive play and learning based on the basic skills related to number learning. Further, Walsh and Campbell (2018) wrote a chapter on play pedagogies focussing on literacy on that introduced learners to mobile devices. As stated earlier, researchers have written about play pedagogies. Also, Daubert, Ramani and Rubin (2018) focussed on this play as a social development for young learners. The important question now is how different this research is. We tried to look into play-based pedagogies in rural areas where practitioners focus more on mobile centres. The practitioners saw a gap where the mothers of these children work and cannot reach early learning centres in their communities, so they introduced mobile centres.

The evolving phase of children is mobile early childhood care and education. At this stage, making interactive learning media products are based on mobile learning. The steps taken are as follows: make a storyboard to facilitate the making of the media and determine the next stage of development so that the parts of the learning media can be arranged properly, and make a layout. The design is made by paying attention to aspects of colour and composition; layouts that have been completed are then filled with material relating to early childhood (Huczko, 2000). After the material writing step, the media is given animated videos and images supporting the material. In addition, it is also furnished with guidelines for use that are made in the form of sound.

The impact on learning playing games can not only fill up spare time, but can also lead to changes in knowledge, attitudes, behaviours, and skills (Ifenthaler, Eseryel & Ge, 2012). Various research today discusses the impact of games on learning. A categorisation scheme of learning outcomes that covered cognitive, affective, and motor skills were proposed (Kraiger, Kevin-Ford, & Salas, 1993). As games develop at a fast pace, Wouters, van der Spek, and van Oostendorp (2009) suggested that collaboration and social skills should also be considered as learning outcomes of games. All of these learning outcomes can be further deconstructed into more specific skills. Thus, one of the interests of this study is to explore the subsection of the learning outcomes (i.e. problem-solving skills, behaviour changes, motor skills, social skills, etc.) to provide a clear, direct, and comprehensive view of the impact of games on learning. By understanding the potential of games in learning, educators, researchers, and game developers can make careful plans to utilise games for learning. Research Questions of the study:

i. What is the impact of play-based learning on the development of children in mobile early childhood care and education centres?
ii. How can practitioners be assisted in incorporating play-based learning in the development of children in mobile early childhood care and education centres?

Literature Review

Theoretical and Conceptual Background

The theory of social constructivism is the understanding that learning ensues through social collaboration and the assistance of others, often in a group (Kapur, 2018). Constructivism is a synthesis of multiple theories diffused into one form. It is the assimilation of both behaviourist and cognitive ideals. The constructivist attitude maintains that learning is a development of constructing meaning further enlightening how people make sense of their practices (Merriam & Caffarella, 1999). The Social Constructivist theory emphasises the significance of philosophy and context in understanding what happens in society and assembling and building knowledge based on this understanding (Racherla, Hu & Hyun, 2008; McMahon, 1997). This perspective is closely related to many contemporary theories, most notably the developmental theories of Vygotsky and Bruner, and Bandura's social cognitive theory (Kim, 2001). The impact of play-based learning on the development of children in mobile Early Childhood care and education centres would be visible when there is an interaction of social collaboration between the children and the practitioners.

In order to apply social constructivism theories in the education arena, practitioners and school leaders need to shift and reshape their perspectives. Both must move from being "learners who teach" to being practitioners. A good constructivist practitioner questions learners' answers, without regard to whether they are right or wrong, to ensure the student has a good grasp of the concept. Additionally, instructors/practitioners and practitioners should have their learners explain the answers they give and not allow learners to use words or equations without explanations. They should also encourage learners to reflect on their answers. Vygotsky's (1978) theory takes a social constructivist approach and emphasises that it is important for learners to learn in a social space where there are social relations in the process of learning. His social theory clearly shows that the centrality of community in the 'meaning-making' is significant for the process of learning, and that culture is a prime determinant of individual learning. This seemed to be one factor that MmeMothiba (RP4) supported in teaching her learners. It became a challenge to determine why her teaching focus was only on enthusiastic learners in the classroom. Evidently, the practitioner relied on selected learners for learning to occur in her classroom. This practitioner's pedagogical practice was not clear. It was unclear whether this practitioner understood that knowledge of facts and concepts of subject matter alone is insufficient, as posited by Shulman (1986).

In this rural context, most parents are unemployed and unable to take their children to creches or early learning centres. The early learning centre, which was a couple of kilometres away from the rural area, decided to take learning to the people. In such research,

the researchers decided to explore the impact of play-based learning on the development of children in mobile early childhood care and education centres; this was to be seen from the practitioners' perspectives. The study explored the impact of play-based learning on the development of children in mobile early learning. The study used two different questions using the social constructivism theory. Only eight research participants were purposively selectively to respond to the questions.

The implications of poor investments in Early Childhood Development and services may be evident in the high unemployment rate in South Africa, as problems qualified during childhood often persist into adulthood (Alderman & Vegas, 2011). Providing education opportunities and infrastructure for children and families can reduce socio-economic disparities and produce prosperous societies for children (United Nations Department of Economic and Social Affairs, 2006). We regard a play-based pedagogy as significant in supporting early childhood education learning. When children play with peers or adults, they learn essential skills to help them grow and be ready to face and succeed in the daily challenges and demands of life, such as learning and socialising. During play activities, children's moral skills can be developed when they learn to understand the feelings and emotions of others. They also learn how to deal with emotions such as anger, sadness and disappointment. Fine and gross motor skills are supported by play activities such as cutting, pasting and colouring (fine motor skills) and climbing, running and skipping (gross motor skills). Play develops intellectual skills when play activities that support children's critical, creative, problem-solving, logical and analytical thinking skills are carried out. Children who play in groups learn to communicate, collaborate and interact with others socially and emotionally. As language and speech are integral to child development, children learn to master language skills, such as enhanced vocabulary, sentence structure, following instructions and conveying their messages effectively (Stach & Veldsman, 2021). Other scholars who argue on play-orientated ECCE centres and programs are Russo (2012), Dong and Newman (2018), and Lunga, Esterhuizen, and Koen (2022). Play-orientated early childhood programs are chief contributors to long-term academic gains because they allow children to be creative by developing their resourcefulness, dexterousness and physical, cognitive and emotional strengths. Thus, it is suggested that children should engage and interact with the world around them through play at a very early age.

Research and Methods

The study was a qualitative case study of eight practitioners using play-based learning in their mobile centres. Yin (2004, 2011) and Baxter and Jack (2008) propose that a qualitative case study allows the flexibility of collecting, analysing, and interpreting data, developing or refocusing research questions, and identifying and dealing with validity threats at the same time. The case study focuses on one phenomenon selected by the researchers to understand holistically in this case. All eight practitioners purposively chosen were teaching learners in mobile centres in the Free State. The research sites were based on the centres that use or teach learners in mobile centres and convenience from public school sites that use play-based learning on the development of children in mobile early childhood. Two methods were used to generate data: semi-structured and document analysis. Semi-structured interviews were conducted with practitioners who were using play-based learning in their mobile centres (Vogt, Hauser, Stebler, Rechsteiner & Urech, 2018). The interview schedule required participants to respond to the protocol questions while talking about the impact of play-based learning on the development of children in mobile early childhood. Document analysis was done on the school policies, practitioners' files, and the learners' workbooks. Semi-structured interviews and document analysis were used to generate data that were later processed and analysed using data coding and then categorising such codes to generate themes that later became the findings of this study.

Sampling and Data Generation and Analysis Methods

This research applied purposive sampling to identify and select participants who were using play-based learning in their mobile centres. Maree and van der Westhuizen (2009) define purposive sampling as "the choice of participants based on some distinct specific qualities that qualify them to be holders of required data for the study. Eight practitioners using play-based learning in mobile centres to teach learners participated in the data generation process. The research participants (RP1-RP8) were to contribute to individual semi-structured interviews. Purposive sampling was used to allow for a specific group of practitioners to be chosen, as their responses were believed to have a greater influence on the experiences of indigenous games in the early grades research study (Etikan, Musa & Alkassim, 2016). These eight research participants from disadvantaged early learning settings provided insight into their beliefs surrounding play teaching using indigenous games in early learning. These research participants were learners at Free State who were all females. Considering ethical standards took precedence over the actions in the study else to avoid a conflict of interest that might jeopardise the two universities' good name and protect participants' autonomy and dignity (Babbie & Mouton, 2005). These ethical considerations were applied along with the main principles of non-maleficence and beneficence (Bertram & Christiansen, 2014). In this regard, approval was sought from the Ethics Committee at the Faculty of Education, University of the Free State, after intense scrutiny and deliberation. Participation in this research was voluntary (Oppenheimer, Meyvis, & Davidenko, 2009). This was done to proclaim their autonomy; they further signed consent forms (Bertram & Christensen, 2014). The practitioners were identified using pseudo names Malunga (RP1), Siziphozonke (RP2), Nomalanga (RP3), MmeMothiba (RP4), Zikodena (RP5), Ntombi-(RP7), Mmannah (RP8), and MmeMsimango (RP6). This was a huge-scale case study, but all the researchers had to use the data; therefore, as this is a qualitative study, I had to select only eight participants, which are why results may not be generalised (Terre' Blanche, Terre' Blanche, Durrheim & Painter, 2006). The study's trustworthiness was achieved by carefully triangulating the data and comparing the results from different sources to ensure that consensual conclusions were drawn throughout. Maxwell, Locke

and Scheurich (2013) argue that triangulation is an important measure that deepens the understanding of phenomena while maintaining different aspects of it.

The most appropriate data analysis strategy for the research questions was identifying themes and patterns while collecting, transcribing, editing, and coding the field notes (Sutton & Austin 2015). Patience was required in contemplating suitable codes and maintaining a constant comparative analysis of data collected while categorising and coding data for explanation and clarity (Sangasubana, 2011). In this regard, data analysis and interpretation involved triangulation in validating the information and drawing conclusions. Access was negotiated.

Findings and Discussion

In this section, the researchers presented findings from question 1, "the requestion question", the first point is, what is the impact of play-based learning on the development of children in mobile early childhood care and education centres? Through daily play, young children gain valuable life experiences in various roles that will encourage growth and ultimately translate into adulthood. Research states that play is essential to developing key abilities, including social, behavioural, language, and cognitive.

Playing is a natural and enjoyable way for children to keep active, stay well and be happy (Wood, 2013). King and Delfabbro (2014) and Kim, Namkoong, Ku and Kim (2008) defined a 'game' as an activity that is governed by rules. Crawford (1984) then classified a 'game' by the factors of representation, interaction, conflict, and safety. Most games, e.g., board games and sports games, are designed with compliance to the aforementioned conditions. These games possess their own systems and rules; players react against the response or action given by another player. Additionally, games encourage competition between players, and the winner is rewarded at the end of the game. However, some games, notably imaginary ones, may not comprise rules or competition and need no company to play. These kinds of games require only an object (toys) or particular skill (imaginative ability). Therefore, it is hard to give a universal definition to the term 'game'. The games and their impact on learning playing games can not only fill up additional time, but can also lead to changes in knowledge, attitudes, behaviours, and skills (Ifenthaler, Eseryel, & Ge, 2012). Various research nowadays discusses the impact of games on learning. An organisation scheme of learning outcomes that covered the aspects of cognitive, affective, and motor skills was proposed (Kraiger, Ford, & Salas, 1993).

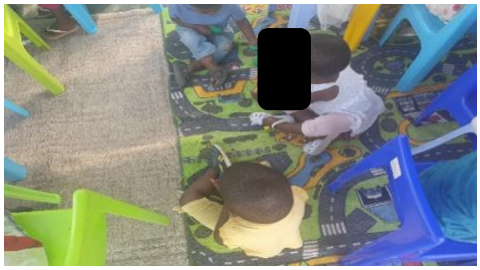
As games develop at a fast pace, Wouters, van der Spek, and van Oostendorp (2009) suggest that collaboration and social skills should also be considered as learning outcomes of games. All of these learning outcomes can be further deconstructed into more specific skills. Thus, one of the interests of this study is to explore the subcategory of the learning outcomes (i.e. problem-solving skills, behaviour changes, motor skills, social skills, to provide a clear, direct, and comprehensive view of the impact of games on learning. By understanding the potential of games in learning, educators, researchers, and game developers can make careful plans to utilise games for learning. Play takes many forms everyone knows 'play' when they see it – on streets, in villages, on playgrounds, and in classrooms. People from every culture, economic background, and community engagement in play since their earliest years. Yet play can be hard to define. However, researchers and theorists agree on the key characteristics of playful experiences, as seen in an important aspect of play: children's agency and control over the experience. Organisation refers to children's initiative, decision-making, and self-preference in play.

In learning mobile centres, learning activities are intentionally framed in the form of play and as an expected part of the children's social realm (Fleer & Hedegaard, 2010). Playful learning also provides a way to incorporate emotions while maintaining attention on the everyday situation of the children. Moving in and out of imaginary situations is another essential definition for this learning situation (Hakkarainen & Bredikyte, 2008). As Vygotsky (2016) explained, the concept of an imaginary setting is not an unexpected fact in a children's life; its first consequence is the children's emancipation from situational constraints. Consequently, the same moving in and out of imaginary situations from story-telling enables the children to move between abstract concepts and concrete situations (Vadeboncoeur, Perone, & Panina-Beard, 2016). Some of the theoretical considerations taken into account for a play-based learning situation are continual shared thinking, double move, and a dialectal view of learning.

In practice, these considerations entail that a learning situation cannot be analysed without analysing the result of the practitioner's pedagogical perspective or bias (Fleer & Pramling, 2015). Such is confirmed by the response from the first research question, where Mme Msimango (RP6) stated that *when children play, that is where they learn and further teach each other the kinds of games they are playing. Such is seen in picture A below, which reveals children playing together whilst learning. The picture reveals the opportunity of using games and plays to promote learning in young children.*

From the research question, the participants responded in the following:

Malunga (RP1) Siziphozonke knowing has roots in both biological/neurological construction, and social, cultural, and language-based interactions (Doolittle & Camp,1999). The knowledge is not objective truth. That is, internal knowledge does not match outdoor reality but is a viable model of experience from the practitioners' side, making sure that learners also understand outdoor play as learning. Cognitive and radical constructivism emphasises all four of the previously mentioned epistemological tenets. These particular epistemological emphases lead to defining principles that maintain the social nature of knowledge (Marques, 2018) and the belief that knowledge is the result of social interaction and language usage, and, thus, is shared rather than distinct.



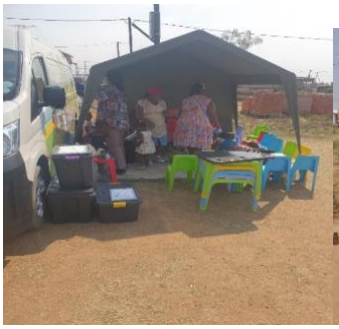
Picture A

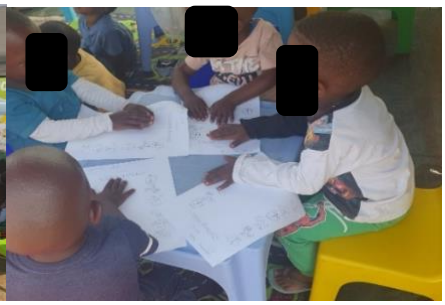
The picture reveals the opportunity of using games and play to promote learning in young children or their early years. Also, the activity promotes learning Life Skills and understanding of clothes, which is under well-being. The content is learnt through the use of pictures as it is aligned with the age relativeness of the children. The sitting arrangement also promotes learner interaction and communication, impacting creative thinking and cognitive skills development.

Malunga (RP1): *Real-time feedback: Like being able to walk around with mobile learning devices means expecting feedback in real time. Such expectations are not only common but are supported by the fact that research has proven that it significantly improves student performance.*

Zikodena (RP5) *stated that the practitioner and the learners interact, and the practitioner is a mediator engaging learners on the theme clothes. This is a topic under Life Skills, which is foundational knowledge for weather changes, the clothes in various/different seasons etc. The practitioner is using easily gross motor skills.* Again, to Ntombi (RP7), *the use of games as a learning approach is evident in this picture. The sitting arrangement promotes learning and communication interaction among learners. The resources used are the level of the learners/children. Age relativeness, the toys, the pictures, and the crayons help with this.*

Research participant Zikodena (RP5) states that *play improves the cognitive, physical, social, and emotional well-being of children and young people.* Knowledge is not passively accumulated but, rather, is the result of active cognising by the individual.





Picture B *Picture C* *Picture D*

Research participant Nomalanga (RP3*) stated that the learners in the picture reveal the opportunity of using games and play to promote learning in young children, or their early years. Also, the activity promotes learning Life Skills and understanding of clothes, which is under well-being. The content is learnt through pictures as it is aligned with the age relativeness of the children. The sitting arrangement also promotes learner interaction and communication, impacting creative thinking and cognitive skills development*.

MmeMothiba(RP4), Knowing has roots in both biological/neurological construction, and social, cultural, and language-based interactions (Dewey, 1916/1980; Garrison, 1997, 1998; Gergen, 1995; Maturana & Varela, 1992). Furthermore, Mmannah (RP8) agrees that as practitioners, the spaces are very important where learners get opportunities to play and interact with technology while learning and where also they can learn basic computer skills …. as we experiment with technology and e-learning platforms, this important question is being raised, but honestly, no one knows the significance of social learning Nomalanga (RP3).

Games are student-focused activities requiring the active involvement of learners. The opinion is that learners and practitioners change their roles and relations through games and are encouraged to take an active role in their learning process (Yolageldili & Arikan, 2011). As a result, games allow learners to direct their own learning.

There is increasing scientific interest in life skills development through sports, but research lags behind applied efforts (Gould & Carson, 2008).

The Use of Dough to Make Various Objects and Shapes

Children, while learning, get to develop their motor and cognitive skills at the same time. Children are taught how to use paint, and different colours to decorate or paint mathematical shapes. This a combination or integration of developing skills which is learning about foundational mathematical knowledge. Further, the pictures reveal the opportunity of using games and play to promote learning in young children or their early years. Also, the activity promotes learning Life Skills and understanding of clothes, which is under well-being. The content is learnt through the use of pictures as it is aligned with the age relativeness of the children. The sitting arrangement also promotes learner interaction and communication, impacting creative thinking and cognitive skills development. In relation to the above, the children could be taught about taking care of water and how to use water. The themes could be aligned with the teaching and learning themes.

The turning point in this article is that early playing also has an important role in a learner's intellectual development. Free play or independent play is a formless form of play that encourages children to design their own play (Green, 2018). There is also pretence play, which requires the children to think of scenarios and then act them out. According to the results of the regression analysis, the regression equation predicts practitioners' self-efficacy perceptions of using computer technologies.

MmeMsimango (RP6): *Early childhood is the most critical time for positive intervention. Children's development during this stage is strongly affected by their environment, and that effect continues to exert a strong influence on the rest of their lives. Education and life skills programs such as games are of the utmost importance.*

Observations

Nomalanga (RP3), when presenting her lesson, was all about the demonstration, play, and having fun. There was no quiet time in her classroom. The group teaching enabled her to work with individuals in a short space of time. Playing and learning cannot be separated into learners' confrontation with their lifeworld, leading them to elementary knowledge (Pramling Samuelsson & Johansson, 2006; Samuelsson & Carlsson, 2008). It can be developed into global guideline principles of pedagogy in Early Childhood Care Education. She was aware of the learners' capabilities. The social theory of implementing "scaffolding" to support learners to grow their confidence in learning (Vygotsky, 1978) was evident. This describes a process where a learner's skills start as elementary and as the learner interfaces with the practitioner, their skills become more advanced.

Darling-Hammond (2000) refers to this kind of teaching where practitioners are commanders of their classrooms and where they understand learners' performance. According to Wood (2004, p.27), "pedagogical professionals made the provision for play and playful approaches to learning and teaching." This means that learners are initiated by the learning and teacher-supported process using play and designing play activities. For example, teachers should consider prior play activities to prepare a learning environment that will include pedagogical decisions, techniques, and strategies that will support and enhance learning through play. Bandura (1986) looks at practitioners' influence on bringing out the best in learner performance. To facilitate this, she employed different teaching strategies like group work, questioning and answering, discussion, free play, and demonstration by learners. Most practitioners organise and arrange their classrooms in a manner that will facilitate a positive climate to challenge learners to spontaneously continue to explore and learn mathematical concepts in a relaxed, natural manner (NAEYC & NCTM, 2002). Moreover, Shulman (1987) adds that practitioners should also possess pedagogical content knowledge, which will enable them to demonstrate their competence in managing classrooms in terms of resources, the behaviour of learners, and the ability to organise and arrange a classroom in a manner that caters for the differences among learners.

Significance and Implications for The Ecd Practitioner

In order to realise the National Developmental Plan in 2030, one of the significant goals is to have sustainable early learning centres (Fourie, 2018). The significance of play-based learning allows learners to engage in decisive activities to reproduce such experiences they are likely to encounter. This is generally defined as having the following four features, it is usually voluntary; It is fundamentally motivating, that is, it is enjoyable for its own sake and is not contingent on external rewards; It involves some level of activity, often physical, engagement. It is diverse from other behaviours by having make-believe excellence. Each feature leaves room for fostering strong metacognitive skills and the ability to build autonomy and co-dependency on their peers. Through the innate learning method, the learners benefit significantly from their play experiences, and practitioners can manipulate developments to teach children certain curriculum goals.

Conclusion

The research demonstrated that play is quite key in learners' development, especially in their cognitive skills such as creativity, problem-solving, and imagination at the ECCs. Practitioners believed that the association between cognitive development and play was essential for getting learners ready for school, where they have acquired the skills for formal schooling. Ahmad, Hussain, Batool, Sittar and Malik (2016) posit that play gives learners the opportunity to practise problem-solving and decision-making abilities. According to Ahmad, Hussain, Batool, Sittar and Malik (2016), play can have a significant role in developing a child's creative abilities. Therefore, the development of creativity is also related to cognitive development because creative thinking contributes to problem-solving. The research only included eight participants from rural Free State therefore the results could not be generalised.

The limitation of this research would be compromised because of the limited time available for researchers, especially because learners attend the mobile centres from morning to midday. This then limits the validity of certain aspects of the research, for example, in that community, how many learners' academic development is affected. Furthermore, only about eight research participants were used in this qualitative research; this may have affected the results because it is not a huge study. One major critique of the qualitative case study approach is its non-generalisability (Stake, 2005).

Acknowledgement

The authors appreciate all the participants for their sincere participation and all authors have read and agreed to the published version of the manuscript.

Author Contributions: Conceptualization, Blanche Ndlovu, Chinedu Okeke, Zukiswa Nhase, Christian Ugwuanyi, Charity Okeke and Moses Ede. The article was reviewed by an independent reviewer and edited by the same critical reviewer.

Funding: This research was funded by Hosken Consolidated Investments Foundation (HCIF), Cape Town, South Africa.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to restrictions.

Conflicts of Interest: The authors declare no conflict of interest.

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