



Motor development: A precursor to support Grade R literacy learning – Lessons from BuddingQ



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Background: In South Africa, low literacy rates among children, particularly in early grades, present a critical challenge to the nation's educational development. This study addresses the pressing issue of inadequate early childhood literacy education, aiming to bridge the gap between research and practice by advocating for effective interventions in the South African context.

Objectives: The study seeks to understand the systemic challenges that hinder early literacy development in South Africa and to explore evidence-informed methods for improving literacy outcomes. By focusing on key elements of effective interventions, such as early initiation, evidence-based programme design, resource allocation, and monitoring and evaluation frameworks, this research aims to provide practical insights into reshaping literacy education in the country.

Method: We conducted a qualitative case study of the BuddingQ intervention in Makhanda, South Africa, using interviews, observations, and content analysis.

Results: The study revealed that prioritising early intervention, investing in evidence-informed programmes, proper resource allocation, and implementing robust monitoring and evaluation mechanisms are critical components of successful early literacy interventions. BuddingQ, by emphasising foundational skills development through play and movement, demonstrated a positive impact on children's emergent literacy capabilities.

Conclusion: South Africa needs transformative leadership and policy reforms for early childhood literacy. Evidence-based methods can promote educational equity, social justice, and improved literacy outcomes.

Contribution: This study provides insights into effective early literacy interventions in South Africa, offering practical recommendations for policymakers, educators, and researchers to reshape literacy education and foster progress.

Keywords: early literacy programme; motor skills; motor development; Grade R; play-based learning.

Introduction

Literacy is perhaps the most crucial factor in learners realising their full potential as it enables and unlocks educational opportunities. As a result, solid foundations must be laid as soon as possible in a child's education (Todd & Mziray 2024). South Africa is significantly trailing behind the rest of the world (Department of Basic Education [DBE] 2023) despite an overwhelming amount of data to support and guide the implementation of high-quality literacy instruction (Shanahan 2020). In South Africa, the low level of illiteracy is alarming (DBE 2023; Khuluvhe 2021; Spaull 2013). The current Progress in International Reading Literacy Study (PIRLS) included 57 nations, with South Africa performing the worst by a sizeable proportion (DBE 2023). The PIRLS also revealed that by the time learners enter Grade 4 (when the curriculum calls for a transfer from 'learning to read' to 'reading to learn') 81% of learners cannot read for meaning in any language (DBE 2023).

In Makhanda, in the Eastern Cape of South Africa (formally known as Grahamstown), 40% of Grade 4 learners can read for meaning (double the national average) (Long & Bowles 2024); yet only 17% of the city's adult population are functionally illiterate (Eastern Cape Socio-Economic Consultative Council [ECSECC] 2017), pointing to pervasive educational challenges. As evidenced in these statistics, Makhanda faces many of the same educational challenges that occur at a national level. As a result, numerous efforts are made to address the deficiencies and inequity in the local education system. As part of these efforts, BuddingQ, an early literacy development

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programme for Grade R learners, was introduced in 2019 as an intervention to attempt to improve literacy levels in foundation phase schooling outcomes across the city (Rhodes University 2022).

While existing literature acknowledges the importance of early literacy interventions, there is a scarcity of research that synthesises the critical elements underpinning their success, particularly within the South African educational context (Meiklejohn et al. 2021). The purpose of this article is to explore the theoretical considerations of BuddingQ as an early literacy programme. As such, this article describes the theoretical considerations that influence this programme, and it examines the impact of the programme in preparing Grade R learners for formal literacy instruction in Grade 1.

Background: BuddingQ – An early literacy programme

BuddingQ is an early literacy development programme focused on enhancing early childhood literacy outcomes by

integrating high-quality motor and literacy development opportunities in Grade R learners in low socio-economic communities. The programme emphasises the development of essential motor skills needed for reading like crossing the midline, eye-tracking, and object manipulation (Kinsler 2024) which lay the foundation for literacy skills (Excell & Linington 2011). The name 'BuddingQ' symbolises the growth of a learner's emotional and intellectual intelligence (EQ and IQ) preparing learners for the formal demands of, among other aspects, literacy instruction in Grade 1.

BuddingQ is structured into five distinct sessions (cf. Table 1), each encompassing a variety of activities aimed at enhancing gross and fine motor skills of Grade R learners. Sessions take place at school during school hours and are jointly facilitated by programme facilitators (volunteers) and school-teachers. Each session is designed to fit into a typical lesson duration of 30–45 min and is conducted over approximately three cycles, with the entire programme spanning 15 weeks. During each session, the class is divided into two groups; one

TABLE 1: BuddingQ activities aimed to prepare learners for reading and literacy in the foundation phase.

Session number	Fine motor		Gross motor	
	Activity	Targeted literacy behaviour	Activity	Targeted literacy behaviour
1, 6, 11	Playdough free play	Verbal communication – learners describe creations, ask for help and collaborate with others thus expanding vocabulary and communication skills through language development. Learners manipulate playdough (squeeze, roll, pinch, and shape) which strengthens hand muscles and improves fine motor skills needed for writing and handling books.	Duck, Duck, Goose (circle game) Throwing and catching Kicking and dribbling a ball	Position in space Crossing the midline Position in space Figure-ground Position in space Directionality Foot-eye coordination
2, 7, 12	Threading beads, lacing shapes (learners thread beads and lace shapes according to a pattern)	Identifying, replicating, and understanding patterns are foundational for writing and reading.	Clapping games Over-under ball game Hopscotch Skipping	Crossing the midline Laterality Directionality Memory Position in space Figure-ground Position in space Figure-ground Coordination Rhythm
3, 8, 13	Lego-play (Learners create or build structures using Lego; some structures are suggested but learners are given an opportunity to be creative and build their own structures)	Lego-play fosters creativity, problem-solving skills and spatial awareness, which are essential for understanding and creating written language.	Cross-legged push-ups Leopard crawl Balance a bean bag on your head Crab walks	Crossing the midline Directionality Laterality Balance Laterality Balance Laterality
4, 9, 14	Finger play (incorporating action rhymes short poems, verses, chants, or stories that rhyme; learners use their fingers to add actions; repetition and imitation are used)	Rhyming and language structures are learned. Imitation and repetition are used to stimulate memory.	Hot potato, fragile egg (circle game) Heel-to-toe Frog jumps Stilt walking	Crossing the midline Laterality Balance Crossing the midline Directionality Foot-hand-eye coordination Foot-eye coordination Balance
5, 10, 15	Tweezers and manipulatives	Identifying, replicating, and understanding patterns are foundational for writing and reading.	Simon 'Tamkhulu' says (circle game) Pattern jumping	Memory Discrimination Memory Figure-ground

engages in gross motor activities while the other focuses on fine motor tasks. After about 20 min, the groups switch, allowing each learner to participate in both types of activities (Kinsler 2024).

The combination of activities was jointly designed by a local occupational therapist, Grade R and Grade 1 teachers, and a community development practitioner. The creation of BuddingQ's content and materials was prompted by the pressing necessity to tackle the widespread developmental delays observed among learners starting school, as reported by foundation phase educators in the city (Rhodes University 2022), with a view to laying the foundation for future learning, and more specifically reading and literacy skills. The main goal was to devise a research-informed intervention programme that was easy to implement. The programme is openly available under a Creative Commons licence (Rhodes University 2022).

Table 1 outlines the activities of the BuddingQ programme and how these activities link to necessary behaviours required for reading and literacy in the foundation phase.

The activities that the learners engage in during a BuddingQ session have direct implications for their motor and perceptual development skills which consequently supports literacy development (Excell & Linington 2011). Each activity is purposefully included to support the development of neural pathways necessary for literacy development and schooling in general (Kinsler 2024).

This article is organised into two sections. In the first section we provide the theoretical considerations that informed BuddingQ as an early literacy programme. In the second section we examine the impact of the intervention in preparing Grade R learners for formal literacy instruction in Grade 1.

Theoretical considerations that informed BuddingQ as an early literacy programme

Motor development as an enabler in early literacy development

Motor development plays a significant role in early literacy development. Interventions and learning opportunities for this particular learning stage should prime the brain help and create neural pathways that support literacy-oriented behaviours. There is an intricate link between the development of motor skills and literacy instruction (Excell & Linington 2011). Motor development in early childhood serves as a pivotal enabler for learning, leveraging the malleable nature of a child's brain during this sensitive period. During these years, learners absorb the world primarily through sensory experiences – touching, seeing, hearing, tasting, and smelling. This immersive way of learning is intrinsically tied to their capacity for movement and play. As Excell and Linington (2011) point out, mobility and motivation are essential for learners' engagement with the world, Talbot and Thornton (2017) emphasise that play is

therefore serious work for learners. It is through play that they interact with and learn from their environment. Such engagement not only fulfils a child's innate curiosity and desire to learn but also nurtures their overall development – encompassing physical, emotional, cognitive, and social growth.

Literacy interventions that incorporate a structured approach to play and draw on motor development activities can boost a child's capacity to absorb and use language's systematic elements, leading to improved literacy outcomes and academic achievement (Son & Meisels 2006) since it leans into the developmental needs of emergent literacy learners (Kelley 2021; O'Carroll & Hickman 2012).

In their formative years, learners experience a phase of accelerated skill acquisition and growth. This phase, when they are highly receptive to new learning experiences, is referred to as a sensitive or critical period (Raskin 2018). These periods are most pronounced from birth to age 6, a time when learners are especially attuned to environmental stimuli and quickly learn skills associated with language, order, sensory experiences, movement, and social interaction. Such learning-sensitive phases are usually transient, diminishing as learners achieve specific developmental milestones. It is crucial to capitalise on these critical learning periods in the early years to prevent any delays in development (Raskin 2018).

Motor development in early childhood is foundational for learning, involving the strengthening of bones and muscles that enable diverse movements like crawling, grabbing, and walking. These activities are not just physical milestones but are central to cognitive and literacy development, as they allow learners to interact with and understand their environment. For instance, a child's ability to explore, manipulate objects, and attain independent postures like sitting and standing, catalyses the learning process and facilitates crucial interactions that build communication skills and social awareness (Adolph & Hoch 2020; Boskic 2010; Jones 2015).

By age 5 or 6, a child typically hones key motor skills, including skipping, ball-throwing, and running, alongside fine motor tasks such as drawing and writing, indicative of their developing agility and coordination. These motor skills are deeply intertwined with advanced linguistic and cognitive abilities, which include understanding complex concepts and following instructions, setting the stage for holistic growth (Wisner 2022). Playful motor activities are essential in this context, reinforcing the interplay between physical and intellectual capacities (Excell & Linington 2011).

Additionally, perceptual-motor skills, essential for literacy, such as spatial and sensory awareness, are fostered through motor development activities. Put simply, by developing an awareness of position in space, learners would be better equipped to ensure correct letter positioning (e.g. above or

below the line) when they start writing; since they will have developed this perceptual skill during throwing and catching activities or a child's understanding of bodily midline and directionality through motor activities like clapping games or ball sports, these activities aid in literacy skills crucial for reading sequentially across a page and identifying the correct initiation point for writing or reading. Below is a list, albeit not exhaustive, of the implications that mastering the target literacy behaviour will have on a child's formal literacy development (Excell & Linington 2011):

- Crossing the midline affects a child's ability to read and write across the page according to writing and language conventions.
- Having a sense of direction (directionality) impacts a child's ability to know where to start reading or writing from (e.g. top to bottom).
- Awareness of laterality helps a child decipher left and right. This is important for identifying and writing letters correctly (e.g. 'p' 'q' 'd' 'b' 'h').
- Being able to differentiate a figure from the background and vice versa helps a child develop the necessary eye-tracking skills for reading (e.g. being able to pick out particular letter, word, or symbol from the background). Hand-eye and foot-eye coordination are also critical to the development of eye-tracking skills, necessary for reading.
- Improving memory is a broadly present skill in BuddingQ since learners must remember instructions and it has effects for formal instruction such as being able to remember letters, words and sentences that are seen or heard.
- Rhythm is another broadly taught skill in BuddingQ and it affects multiple aspects of literacy development and speech fluidity.

The development of muscles used in gross motor activities will affect broader aspects (e.g. balance, posture, correct sitting position) that enable a child to effectively participate in formal instruction just as fine motor muscles will support literacy behaviours such as correct pencil grip and turning pages of a book gently (Excell & Linington 2011).

While there are several explicit implications of the BuddingQ activities for learners' literacy development; it should also be acknowledged that several implicit skills can be developed. For example, the development of vocabulary while engaging with the facilitators about what to do or the conversations that take place while a child is building with Lego (e.g. about colour, size of block, et cetera).

The integration of these skills enables learners to process and coordinate sensory information, an essential precursor to literacy. Therefore, literacy programmes like BuddingQ that incorporate play and targeted experiences can significantly contribute to early literacy development, equipping learners with a comprehensive skill set necessary for their future academic endeavours (Excell & Linington 2011; Neaum 2020). It is imperative to move beyond traditional rote learning to more dynamic methods that include play and movement,

aligning with the developmental needs of young learners and providing them with a robust foundation for future literacy success (Kelley 2021; O'Carroll & Hickman 2012).

Literacy development of Grade R learners

The onset of literacy development occurs well before formal education begins. Wolf (2008) describes this literacy acquisition process through five progressive stages that start with the emerging pre-reader (from 6 months to 6 years old) – the learners who would attend Grade R. Emergent literacy is a formative stage where interaction with the environment and playful activities are instrumental for learners' progression toward formal literacy instruction (Neaum 2020; O'Carroll & Hickman 2012; Snow 2006). During the emergent literacy phase there is particular emphasis on activities that enhance learners' awareness of sounds within language as a precursor to grasping the rules of phonics and other formal literacy skills (Neaum 2020).

The development of learners' literacy in this phase is a multisensory and social process that validates and spurs their interest in language and print. In other words, literacy development emerges organically through interaction with their surroundings and engaging in playful activities like singing, literacy games and fantasy play (Neaum 2020). Consequently, the environment and literacy practices in this phase should support the growth of hearing, vision, speech, as well as auditory and visual processing, vocabulary, and motor skills, which are all integral to the journey toward developing skills for literacy (Snow 2006). These abilities pave the way for engagement with the formal literacy instruction that follows (from Grade 1). This phase is pivotal as it establishes the groundwork for subsequent literacy development and learners start to learn the foundational skills and attitudes needed for formal literacy instruction.

Methodology

A qualitative case study approach was employed to explore how, and to what extent, BuddingQ is effective in preparing Grade R learners for formal literacy instruction in Grade 1. A case study is used to explore this real-world situation in-depth (Babbie & Mouton 2001). Creswell (1998:477) confirms case studies may include a programme, an intervention, a student cohort, or activities such as the implementation of a new approach or programme.

Participants

Purposive sampling was used for this study as the researchers wanted to ensure the inclusion of specific individuals and groups who could provide critical insights (Lavrakas 2008) into the role that the BuddingQ programme could play in Grade R learners' literacy and motor development. The participants included 13 programme facilitators ($n = 13$) and eight Grade R teachers ($n = 8$), all of whom were actively involved in the programme within the Makhanda region, and who voluntarily consented to participate (Table 2).

TABLE 2: Overview of programme facilitators participating in the research (details correct at the time of the interview).

Participant	Highest qualification	Number of years of experience in BuddingQ	Institutional affiliation
T1	Certificate	2	Community Partner School
T2	Certificate	2	Community Partner School
T3	Diploma	3	Community Partner School
T4	Certificate	3	Community Partner School
T5	Certificate	2	Community Partner School
T6	Diploma	3	Community Partner School
T7	Bachelors Degree	1	Community Partner School
T8	Certificate	2	Community Partner School
S1	Honours	2	Rhodes University Student
S2	Bachelors degree	3	Rhodes University Student
S3	Honours	2	Rhodes University Student
S4	Bachelors degree	2	Rhodes University Student
S5	Matric	3	Rhodes University Student
S6	Matric	2	Rhodes University Student
S7	Honours	3	Rhodes University Student
S8	Bachelors degree	2	Rhodes University Student
S9	Bachelors degree	2	Rhodes University Student
S10	Matric	2	Rhodes University Student
S11	Bachelors degree	2	Rhodes University Student
S12	Bachelors degree	2	Rhodes University Student
S13	Bachelors degree	3	Rhodes University Student

Data collection

Data was collected through focus group discussions and semi-structured interviews to gather collective and individual perceptions of the programme's impact. Data were analysed through thematic content analysis. Content analysis is well suited for this study because it allows for an in-depth examination of the data generated from the participants (Babbie & Mouton 2001). It enables the organisation of qualitative data into categories that reveal patterns and relationships pertinent to assessing interventions like BuddingQ.

Ethical considerations

An application for full ethical approval was made to the Stellenbosch University Research Ethics Committee: Social, Behavioural and Education Research and ethics consent was received on 1 July 2021. The ethics approval number is SU21672. The study adhered to all the guidelines for ethical research.

Results and discussion

Four themes emerged from the thematic content analysis of the data. Table 3 summarises the themes and sub-themes.

Theme 1: Grade R learners' readiness for formal literacy instruction

Sub-theme 1.1: Motor development

The impact of BuddingQ on Grade R learners' motor development was the most explicit area of change the facilitators and teachers noticed. As stated by Participant S5:

'There is much improvement in the motor skills with the learners.' (Participant S5)

TABLE 3: Themes and sub-themes.

Themes	Sub-themes
1. Grade R learners' readiness for formal literacy instruction	1.1. Motor development 1.2. Emergent literacy development 1.3. Other areas of development and early learning
2. Play-based learning in Grade R	2.1. Access to appropriate teaching and learning resources 2.2. The presence of developmentally appropriate learning activities in Grade R classrooms 2.3. Provision of movement and play in the curriculum
3. Support for Grade R teachers	3.1. Access to professional learning communities 3.2. Tools for teaching and learning in Grade R 3.3. (Un)supportive leadership and policies 3.4. Parents' involvement in early learning

One facilitator, who had been in the programme for several years noted:

'On the motor development, I feel, from what I've experienced since my first year, I could probably say, I see an 80% improvement from the time I'm reaching closer to my 14th session.' (Participant S8)

This highlights that although the grasp of the motor development skills in BuddingQ is not immediate, over the duration of the programme learners do improve. Participant S10 had this to say about the learners' development of motor skills through BuddingQ:

'The fact that you could see in that activity that from the first time they tried, there was a struggle. But the second time they tried, there was a significant improvement.' (Participant S10)

Other facilitators also captured the same sentiments:

'There's that one game of four cones and the ball. Where you just must direct the ball around the cones until you get it [*in*]. I think that has really helped. I think it's improved things like movement you know. Things like direction, control, balance, because they are now ... Okay, from the beginning it was very hard because you find that after passing the first cone, the ball would just roll, and then they would have to chase it. Chase it very far away. But now, they know how to extend their leg to be able to trap the ball and lead it to the right position.' (Participant S12)

'I remember when we did the activity ... to throw the beanbags at each other. So, the first time they did it, it was kind of really difficult. And they could not really understand how the game was played. But that as the time went by, we were able to ... They were able to play the game and actually understand, "Okay so now we have to throw it high or throw in low. Use both hands or one hand".' (Participant S10)

In addition, the motor development had positive knock-on effects for participation in classroom tasks:

'[I am] seeing a translation from like the bead threading, to being able to hold the pencils and pens in my own classes. So, we don't really deal with pencils and pens in Budding Q, right? So, I'm seeing that the Budding Q activities are helping those activities.' (Participant T2)

Sub-theme 1.2: Emergent literacy development

Participant S11 pointed out that often there is a rush to implement formal literacy instruction and BuddingQ's focus on emergent literacy is important in laying the foundations for later, formal instruction:

'I think literacy, people go reading and writing. And you see things all over the place where there are four-year-olds or three-year-olds reading. "Look I can read". And it's the pre-skills, I think, that you are really aiming at. And developing and enhancing those.' (Participant S11)

As a result of establishing solid emergent literacy foundations, teachers in the focus group discussions reported observable benefits of BuddingQ on emergent literacy and school readiness, noting improvements in skills such as coordination and visual discrimination, which are crucial for classroom activities. These observations suggest that the skills developed in BuddingQ are effectively translating into classroom settings, enhancing learners' literacy behaviours. For example:

'Now they can handle all their pencils and crayons correctly.' (Participant T4)

Teachers also observed that BuddingQ's delivery in English has been significant in contributing to learners' English vocabulary development.

Several participants shared the notion that:

'Doing those skills [*in BuddingQ*] really helps them in the long run.' (Participant T7)

Similarly, Participant S7 suggested that the BuddingQ programme:

'[A]lso helps them become ... independent in understanding how things are supposed to be done. And that they can actually concentrate and take in information or understand information that has been given out.' (Participant S7)

All these skills are essential for formal instruction that begins in Grade 1.

Sub-theme 1.3: Other areas of development and early learning

Although this study primarily focused on understanding the effectiveness of BuddingQ in motor and literacy development, it is important to mention some unintended outcomes of the intervention that relate to the school readiness of Grade R learners, which could influence their overall readiness for formal literacy instruction.

A key unintended outcome of the intervention was its significant contribution to the learners' social and emotional development. Teachers observed that BuddingQ:

'[M]ade a difference [*to*] the attitude and engagement of the learners. ... Budding Q has that element of excitement. And I see more learners, more learners engaging with the activities than they would do on a normal Wednesday in one of my movement activities.' (Participant T7)

Significant improvements in learners' patience, concentration and confidence were reported and perceived by participants to be a result of BuddingQ. Additionally, several teachers observed positive knock-on effects in other academic areas, such as numeracy, with specific activities like counting beads before threading them enhancing mathematical skills.

These findings suggest that the most significant outcome of BuddingQ is the enhancement of learners' motor development (an aspect of emergent literacy) which appears to encourage better classroom practices that facilitate quality early literacy learning in Grade R.

Theme 2: Play-based learning in Grade R

Sub-theme 2.1: Access to appropriate teaching and learning resources

Research participants indicated that while some schools receive limited government-issued resources for Grade R annually, they are often insufficient for their large classes and must usually be shared among educators. They also indicated that the government-issued inventory does not include much equipment that can be used for learners' motor development (such as balls and playdough) (Participant T3). The BuddingQ programme addresses this shortfall by supplying the necessary equipment used in the sessions, with sets of play equipment available for loan through a rotation system managed by the custodian of the programme.

The teachers in this study reported that being able to access play equipment through the BuddingQ programme as a normalised aspect of the intervention has been particularly empowering. One participant stated:

'[We] are able to give people access to things that they don't have, and you don't make them feel some type of way, for not having access to those things.' (Participant S7)

Sub-theme 2.2: The presence of developmentally appropriate learning activities in Grade R classrooms

Initially among the educators, there was a notable lack of familiarity with effective emergent literacy techniques. Despite Participant T3's Level 5 ECD Diploma and 19 years of experience, observations and interview insights suggest a predominant use of a whole language approach. Additionally, she alluded to several misapplications of code-switching that would not support meaningful language learning, and there was a lack of effort to foster a literacy-enriched environment, with only a book corner and some flashcards and labels reported. This was echoed in focus group discussions, where many teachers mentioned relying on oral and rote learning methods in their teaching. Despite this, there was a general understanding of how BuddingQ was supporting developmentally appropriate learning and teaching.

All participants acknowledged the necessity of beginning interventions at an early stage, with a suggestion from two individuals to initiate even sooner and extend beyond Grade R. The consensus was that the intervention is well timed for the target age demographic. As one participant

noted, providing these foundational experiences is crucial; otherwise 'learners who face challenges would find it even harder' (Participant S7).

Another aspect of BuddingQ's developmental appropriateness is rooted in its repetitive and cyclical nature, which establishes a reliable routine for both learners and facilitators. As participants noted, it is the iterative nature that helps learners become proficient:

'The repetition of the programme, and learners being able to repeat activities, is why they get good at it.' (Participant S7)

Additionally, the programme sets a stage where 'sometimes as I set up, the learners already kind of know what will happen' (Participant S10), indicating a successful creation of a predictable and secure learning environment.

Similarly, the activities in BuddingQ present just the right level of challenge to encourage learners to reach their potential. The student volunteers provide individualised encouragement and guidance, scaffolding the learning experience effectively since they 'have an understanding of young learners' (Participant T3).

Sub-theme 2.3: Provision of movement and play in the curriculum

Focus group participants felt that the current curriculum guidelines (CAPS) barely address movement and play activities that aid literacy development, and they believe that understanding these areas could lead to better support from their management structures.

Participants conveyed that the curriculum and school environment prioritise prematurely advancing to reading without 'setting those foundations' (Participant T1) essential for literacy and overall motor development. Teachers commonly expressed feeling compelled to cover the 'academic parts' of the curriculum, often at the expense of promoting play and outdoor activities. One teacher succinctly expressed this tension:

'I did not concentrate on outdoor ... when I look at CAPS, I know I need to finish it, and then I push. But when we look at our timetable, it's only "encinci" [small] time for them to do those things.' (Participant T3)

Just one participating school, which charges fees and is centrally located in the city (as opposed to the others which are no-fee schools located in the township), indicated that they have a dedicated motor skills programme with sufficient resources integrated into their daily schedule. One other teacher reported incorporating motor skills activities into her daily programme but was constrained due to inadequate access to play equipment. All other teachers highlighted the pressure to focus on formal components of the curriculum. Participant T4 captured their sentiments:

'Most of the time we are focusing on their writing, whatever. Counting.' (Participant T4)

As such, participants widely valued BuddingQ for supporting the integration of play-based learning into their daily practices, as well as appreciating BuddingQ's play-based activities for bringing novelty and excitement to the routine of classroom life. Reflecting on the nature of play within the programme, a participant observed that unlike traditional unguided play, the programme introduces structured gross motor activities with clear aims, offering a significant shift from the informal games of their own childhoods that 'didn't have instruction or aims, or guidelines, or benefits ... [and] not much instruction that comes with it' (Participant S8). This structured approach integrates play with skill development, bridging the gap between spontaneous fun and purposeful learning.

Several participating schools have shown signs of adopting a BuddingQ-inspired play-based learning approach, by encouraging learners to wear physical education attire for comfortable participation in BuddingQ and integrating the programme's methods into their regular practice.

Theme 3: Support for Grade R teachers

Sub-theme 3.1: Access to professional learning communities

Through the programme, teachers are exposed to models of best practice for motor development skills and emergent literacy education, and training opportunities and reflective input from specialised programme coordinators and leaders. A common theme that emerged from the educators involved in the programme was an appreciation for the professional learning opportunities provided by the BuddingQ programme, particularly during COVID-19, when all government professional development workshops were halted.

Built into the monitoring and evaluation framework of the programme intervention are several reflective meetings which give teachers and facilitators a chance to extend their learning and network with colleagues. The focus group discussions highlighted a collective change in understanding about the role of play and movement in Grade R, where participants said things like:

'When you are there, I realised there was a lot I didn't know.' (Participant T4)

'I learned a lot from you.' (Participant T2)

'I never thought that just games, was so rooted like this.' (Participant S8)

'I've always taken the skills just, I don't know, for granted ... now I realise how important they are.' (Participant S7)

'[BuddingQ is] very much [directly] aimed at targeting those pre-literacy school skills for perceptual development, fine motor development, gross motor development.' (Participant T6)

Sub-theme 3.2: Tools for teaching and learning in Grade R

Beyond the access to physical teaching and learning resources, BuddingQ was also able to provide a learning

space for teachers to access knowledge and tools about motor and literacy development for their learners. Many teachers in the focus group discussions acknowledged their limited awareness of emergent literacy development and the practicalities of teaching Grade R learners effectively through movement and play.

In addition, many teachers in the focus group discussions reported that their involvement with BuddingQ bolstered their confidence in classroom management, as well as in the development and implementation of their curriculum. As noted by Participant T5:

‘Having this framework for being able to implement a programme that encourages play, supports your inner feelings of what is right for learners.’ (Participant T5)

Inspired by the programme’s activities, teachers reported that they began to incorporate the activities of BuddingQ into their daily class routines, such as life skills or physical education, in alignment with CAPS requirements.

Sub-theme 3.3: (Un)supportive leadership and policies

Teacher feedback suggested that the shift towards formal and developmentally unsuitable literacy instruction at an early age stem from mixed messages regarding the role of Grade R teachers. While government-provided professional development workshops and guides promote ‘learning through play’ as the ethos for Grade R education — a principle also embedded in the CAPS curriculum – teachers in this study unanimously reported feeling peer pressure to prematurely ‘prepare’ learners for subsequent educational stages, reporting that:

‘Grade 1 teacher[s] ... are putting pressure on us [*saying*] ‘you are supposed to do this’ and you are always fighting [*them*] because we are saying it’s not forced to teach x, y, z. It’s just a favour to [*them*] especially with the young ones. That’s why our focus is writing.’ (Participant T5)

The teachers expressed that the early shift towards more formal instruction is normalised and unchallenged within their schools, attributing this to a lack of support and possible, a lack of understanding from upper management and government about the significance of early learning and the pedagogical distinctions from the more formal instruction that begins in Grade 1. An example illustrating this issue emerged during the COVID-19 school closures when, as one teacher noted, the focus was primarily on the return on Grade 7 to school, neglecting the early grades – particularly Grade R and Grade 1 who were the last to return to school – and where the research participants believe educational support is most critical for achieving improved outcomes in later schooling.

Participants felt that their management structures could better support the play-based aspects of the Grade R curriculum if they were given more emphasis in the curriculum and training.

Sub-theme 3.4: Parents’ involvement in early learning

The study revealed that teachers observed a general lack of awareness among parents about the importance of early learning, with many relying on schools to fulfil this role, resulting in limited family involvement in learners’ education and thus a feeling that learners’ potential is limited if learning only exists within schools. Participant S12 highlighted the critical need for caregiver engagement:

‘If your parents are more engaged in your work, being at school and doing BuddingQ is just an extra step of getting to where you need to be. But if you don’t have that support as well, then it really puts you at a disadvantage.’ (Participant S12)

However, the teachers who participated in this study noted that this was not the reality of many learners who participate in BuddingQ.

‘Kids typically don’t have exposure to this [*type of stimulation*] in their homes.’ (Participant T1)

‘They only see them [*the equipment*] at school. At home there’s nothing.’ (Participant T3)

Despite this reality, participants in this study’s focus groups intimated that opportunities for play are readily accessible in these communities but is often unsupervised and unstructured which may limit its impact on child development (Draper et al. 2012).

Conclusion

This study provides compelling evidence for the impact of programmes like BuddingQ as it is built on fundamental components essential to support Grade R learners for formal literacy instruction. The data confirms that the programme is not only as an early literacy programme that draws on motor skills, but it is also an educational tool that raises awareness about quality emergent literacy education.

BuddingQ’s pedagogical reliance on play-based learning offers a rich, dynamic educational framework, in which play is translated into meaningful learning, essential for enhancing cognitive and social skills that ensure learners are ready for the demands of Grade 1 (Excell & Linington 2011). By altering existing practices and endorsing the adoption of robust emergent literacy practices, such as those demonstrated in BuddingQ, the programme could contribute to enduring improvements for early literacy instruction in similar contexts.

The study also highlights that access to play equipment is essential for learners to develop the motor skills foundational to literacy and future schooling success. The provision of necessary equipment by programmes like BuddingQ consistently offers learners opportunities to develop motor skills, which they might not have otherwise due to a lack of resources. Considering the effect of limited availability of resources on learning outcomes in Makhanda’s local schools (Msimango et al. 2017), ensuring adequate availability and access to suitable resources plays a vital role in the success

of any intervention, particularly in low socio-economic communities. The increased availability of both human resources and physical resources, particularly play equipment, played a key role in the successes achieved by BuddingQ.

Despite numerous educational policies implemented in South Africa, learner achievement and literacy rates remain low (DBE 2023). The ramifications of failing to provide adequate support and resources during the early years of education cast a long shadow over learners' academic journeys. International studies issue a stark warning (Battaglia et al. 2019): if learners cannot read with comprehension by Grade 4, their educational journey is poised for perpetual struggle. This sobering reality underscores the principle that those who start behind inevitably remain behind. Addressing these challenges and remedying developmental delays is paramount in our collective effort to ensure every child receives the support they need. By acting and investing in early literacy development, South Africa can forge a path towards improved educational outcomes and the overall well-being of future generations (Heckman 2011).

Recommendations

This research suggests that programmes like BuddingQ are not only key in addressing early learning needs but also provide guidance to develop similar models for broader educational and social development. By focusing on motor development as a precursor for early literacy (emergent literacy) BuddingQ stands as a testament to the potential impact of well-structured, play-based learning programmes in the South African context and possibly beyond. Future research should aim to explore the long-term impact of such programmes and further investigate the potential for broader systemic change. It should also evaluate the role of parental involvement and home learning environments in augmenting the effects of programmes like BuddingQ. Given the demonstrable success of this programme, policymakers and educators alike are called to consider how such models can be scaled and adapted to bridge the gaps within the current educational framework.

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Authors' contributions

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Data availability

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