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Engaging Bodies, Engaging Minds: The Effects of Movement-Integrated Teaching on Learner Motivation

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Abstract: This research explored the effects of movement-integrated teaching approaches on the motivation and engagement of learners in South African school settings in the Limpopo Province. Engagement remains a basic challenge in schools due to overcrowded classrooms, short staff, lack of infrastructures and inadequate teachers' training. This research was grounded on the Montessori Hypothesis of learning and sought to enquire about the positions of the body as the centre of learning, challenging colonial legacies of mind-body partition in the formal learning environment. The study employed a qualitative approach wherein teachers' interviews and classroom observations were conducted to investigate how movement-integrated approaches affect learners' motivation and engagement. Focusing on under-resourced schools in the Limpopo province, two schools were selected and three teachers from each school were interviewed and their classrooms observed. The collected data was analysed thematically. The findings of the study revealed that when teachers integrated physical movement, either through songs, rhythm, or story telling it enhanced the attentiveness of learners, their participation and influenced whether learners enjoyed the lessons. Teachers also observed that it increased peer collaboration and improved retention of the content learnt. The study urges teachers to integrate physical movements more in their lessons, it concludes by recommending that in the early childhood curriculum, flexibility, teacher training initiatives and greater recognition of movement-based learning are essential.

Keywords: *Movement-Integrated Teaching (MIT), Early Childhood, Learner Motivation, Physical Movement, Engagement.*

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I. INTRODUCTION AND BACKGROUND

In South African schools, teachers typically use traditional classroom management strategies. However, more people are starting to realise that teaching foundation phase learners should be engaging and relevant to local cultures. Movement-Integrated Teaching (MIT) is a method which intentionally incorporates physical activities into regular learning. This method is becoming popular since it can serve to motivate learners and keep them engaged throughout the lesson. (Wang,2022) proposed that employing modern teaching methods, such as hands-on learning can improve teaching quality and assist the learners in their holistic development. This approach has shown positive outcomes in many places around the world. According to reviews and studies from 2020, including movements in lessons helps young learners to think better, pay more attention, makes them enjoy what they are learning and feel more confident in themselves.

MIT is consistent with South African ideas such as Ubuntu, which emphasises collaborative learning and focusing on the complete growth of learners by improving practical education and providing a strong philosophical foundation. With that being said, many primary school classrooms in South Africa continue to encounter problems such as learners' lack of motivation, learners' lack of participation in the lessons, and learners' difficulty remembering what they have learnt. The traditional methods of teaching stem from old colonial practices that separate thinking from doing; it considers learners as if they are just empty containers waiting to be filled with information.

This approach often overlooks practical and culturally relevant methods of teaching that could make young children more excited and engaged in learning. Teachers using MIT play the most important role, as they not only provide information, but also help create a stimulating and lively learning environment where learners can learn through both movement and school content. Teachers' views and actions

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have a significant impact on how MIT is put into practice. Past research has shown that many teachers recognise the advantages of including physical activities into lessons (Gilmore,2024). However, with that comes challenges such as classroom space constraints, traditional teaching expectations, and a lack of professional development opportunities that hinder its widespread adoption. For instance, (Fisher & Louw,2023) highlighted that teachers often perceive prolonged sitting as conducive to learning, overlooking the potential benefits of incorporating movement to keep learners focused and interested. Despite increased interest in MIT, there is a clear lack of research about how it can influence schools in South Africa. Most studies to date have been conducted in Western countries and might not consider the unique cultural, social, and infrastructure differences found in South African classrooms. Furthermore, there is little genuine evidence about how MIT affects learners' motivation and engagement in primary schools in South Africa.

This study attempts to address this gap by looking at how MIT affects motivation and engagement in various schools in South Africa. This research investigated how movement-based lessons can improve learners' motivation, interest, and academic success (Mebert et al., 2020). The purpose was to provide useful information that can improve teaching methods and educational policies. This study was significant because it has the potential to help change educational learning in South Africa to become effective in the current times and more independent from colonial influences. By including movement and culturally relevant activities into the lessons, MIT provides a way to make education more inclusive, interesting and effective for all learners. It intends to assist teachers by providing strategies to boost learners' engagement and promote the overall growth of learners in African schools.

This study was exploring how movement-integrated teaching affects learners' motivation and engagement in South African school settings.

Responding to the aims of this study the following 2 questions were addressed:

- How does Movement-Integrated Teaching influence the learners' motivation and engagement in the Foundation Phase classrooms in South African schools?
- What are foundation phase teachers' perceptions and experiences with using physical instructional approaches to enhance learning in South African school settings?

II. THEORETICAL FRAMEWORK

This study was grounded on Maria Montessori's Theory of Learning (The Montessori Method) which (Ruhl,2024) defined as a child-centred educational approach that provides a framework for understanding different theories that attempt to explain the impact of movement-integrated teaching on learners' motivation and engagement in the South African setting. This strategy emphasises self-directed learning, hands-on activities, and a structured environment which is able to cultivate the love of learning and independence of learners. Seeing learners as naturally inquisitive and competent of learning at their own pace energises them. This encourages the learners to investigate and be more willing to explore new ideas to use to problem solve when faced with challenges. (Strict,1968) further emphasised on the assessment of dialect educational programmes for preschool children.

The Montessori Theory stresses the importance of movement in children's development and learning. According to (Montessori,2010), moving around is critical for the child's overall development, that includes the mind, body, feelings and social skills. This theory recognises that movement is more than just exercise, it is a valuable tool for children to explore, learn about, and connect with their surroundings. (Montessori,2010) believed that thinking and movement should work together and that children should be allowed to learn and play. Movement with thought is a planned action or a purposeful activity that is guided by sound reasoning towards a sensible goal. In order to attain a well-rounded learner, classrooms should function as a platform to help children grow in all areas by allowing them to move freely and engage in meaningful activities. Therefore, movements play a crucial role to assist the learners to understand the world by using their bodies. This supports not only their physical skills but also their thinking, social interactions, and emotions. According to (Standing,2011), movement is the most important part in learning and not just for gaining knowledge but also for assimilation.

Montessori's scientific research shows that movement and cognitive functioning are closely related. Movement-based activities help the cerebellum, a part of the brain which aids with co-ordination, timing, and paying attention, work more effectively (Montessori, 2010). When you have learners participate in activities that require movement, it improves their memory, ability to follow steps, and problem-solving skills. For example, when learners walk across the room to return something, they must not only move well, but also think ahead, be aware of other people and understand their surroundings. (Stoll,2016) pointed out that in a Montessori classroom, movement is not an afterthought but is part of the plan from the beginning. Movement-integrated teaching is an approach used around the world, including in South Africa, to encourage learners to get more involved, stay motivated, and develop in many ways. To improve theory and practice, especially in South African areas with limited resources, it is important to have classroom-based research that considers the local context. Global research, especially reviews from 2020 shows that MIT methods have clear advantages. A study by Mavilidi shows that many reviews of research indicate better attention, more focus, and improved school results for learners of all ages. Research shows that MIT helps learners in improving their maths skills by improving oxygen and blood flow to the brain, which improves memory, focus, alertness, learning science through hands-on activities, and remembering vocabulary in language studies (Mavilidi et al,2022). Great examples like the U.S. Comprehensive School Physical Activity Programs (CSPAPs) shows how schools can include movement and physical activity into regular classroom activities.

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South African studies focus on using MIT in the early school years (Grade R-3), a 20-week exercise study in schools with fewer resources showed that MIT helps learners to keep up with their academic performance (Pewa,2024). This suggests that MIT could be helpful in schools that don't have many resources or advanced infrastructure. (The Department of Basic Education ,2011) stresses that skills like rhythm and balance are very important for young children's learning. Teachers say they know little about MIT and they do not have enough resources such as room space. The teachers further mentioned that they teach big sized classes, and do not feel competent about teaching MIT lessons. Studies from the Western Cape show that people do not know enough about the dangers of sitting for a long time and have mixed feelings about physical activities in schools because other school subjects tend to take priority.

III. LITERATURE REVIEW

According to (Omdre et al,2018) South African research provides strong insights into the connection of movement-integrated teaching and learners' motivation and engagement. One study on structured movement educational activities in preschool (Grade R) revealed that when teachers integrated physical tasks such as hopping to shapes or walking to coloured blocks, learners showed a high level of concentration, involvement, and enjoyment throughout the lesson. In addition, teachers have emphasised that children actually do understand better when they are physically involved in the activity, highlighting the strong connection between movement and thinking. These results agree with other studies that show teaching with movements improves attention, thinking skills and understanding (Petrigna,2022). Similar research done by (Fisher & Louw,2023) in the Eastern Cape classrooms found that movement decreases sitting time, challenges the idea that in order to learn learners need to sit still, and suggested that moving around can help learners focus and engage better as long as teachers are trained and classrooms are set up in an appropriate way.

- *What is Movement-Integrated Teaching?*

(Webster et al,2020) described Movement integration (MI) as incorporating physical activity (PA) into regular classroom time throughout school as a method to promote public health objectives and improve educational outcomes for primary school learners. (Martin, McMullen, & Murtagh,2020) further explained it as a means which contributes to children's movement and academic achievement. In this study, Movement-Integrated Teaching (MIT) which is also known as Movement-Integrated Instruction (MII), is seen as a guideline approach that directly incorporates physical activity into the curriculum. It consists of development breaks, physically dynamic moves, and kinaesthetic learning activities which have been planned to develop both the cognitive and physical skills inside the learning setting. Also, being grounded in the embodied cognition theory which accepts that MIT stands on the view that substantial development improves cognitive preparation leading to improved and more effective learning. (Romar et al,2023) concurred by stating that Development-Coordinating Educating integrates exercises that have been physically planned for any level of concentration into the daily lesson content with the goal of reaching the intended learning outcomes in the classroom.

- *Benefits of Movement-Integrated Teaching*

When learners are physically involved in their learning, they tend to grasp the content better than when they are just seated, absorbing information from the teacher. This movement-based method does not only equip them academically but also improves their mind functionality and physical fitness. This has been supported by (Rodrigues et al ,2024) whose research shows that learners receive many benefits from the teaching approaches which include physical activities in their lesson deliverance. The benefits include better blood flow and brain function; prior studies show that learners who take part in physical activities usually remember what they have learnt better. (Cox,2025) highlighted this by saying that when learners use their bodies when learning, it can improve their memory and understanding better, even if the movement is not directly connected to the lesson. (Cox,2025) went on to share an example from a math class he observed, the teacher asked learners to act out word problems using their bodies, when learners did this it changed how they thought about math. They now understood the problems better because they could connect the math words with what they were doing, which helped them to learn effectively.

Based on these arguments from previous researchers, this study has drawn conclusion on the following as the benefits of Movement-Integrated Teaching on learners:

- Improves their academic performance.
- Increases physical activity.
- Enhances cognitive functioning.
- Positively develops social emotions.
- Decreases disruptive behaviour.

- *The Roles of Teachers in Facilitating Movement-Integrated Teaching*

Books and articles from previous researchers often emphasise that teachers are very important for the success of MIT. Learners from around the world say that teachers who are positive and use active teaching methods are essential for their skills to use MIT. The manner in which teachers plan movement activities will decide whether they will be successful or not. Therefore, teachers should not only be perceived as just guides in movement-based teaching but also as planners. In South Africa, many teachers do not get adequate training in MIT, because movement activities are not valued as much (Petrigna,2010). Consequently, more emphasis is placed on academic work in a sedentary approach rather than balancing it with movement activities. Quality pre-service and ongoing professional development including integrating Indigenous knowledge and Ubuntu philosophy are proposed as mechanisms to enhance teachers' capacity and transform perceptions. (Mehiri,2020) stressed this in his study when investigating the effects of Gardner's theory of multiple intelligence.

Teachers' perspectives to MIT is crucial because it will have an effect on whether or not they will include movement activities and how they will include it in their daily lessons. It

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is essential that teachers get adequate training and support on how to use movement in their daily lessons. This is important because they might come across many challenges such as less contact time and the pressure of covering the curriculum. According to (Sobolewski et al ,2024) teachers are not just helpers in this but they also play a key role in the implementation of this method, because they make choices concerning the usage of these programs which lead to a better success.

IV. METHODS

➢ *Research Design*

(Bandari,2025) defined research design as a plan that helps researchers in finding answers for their research questions using real data. In this study, research design means the complete plan for the research, that will show how the researcher collected, examined, and interpreted the gathered data to see how movement-integrated teaching impacts the learners' outcomes, particularly their motivation and engagement.

This paper used a qualitative research approach to study how movement in the Foundation Phase impacts learners' motivation and engagement. The qualitative approach is good for understanding the participants' experiences and how they feel about their learning experiences. (McCombs,2021) highlighted that researchers should design their studies thoughtfully so that their methods align with their research goals and they analyse data correctly.

This open approach to the design enables the researcher to understand other important areas that haven't been studied much but still affect how movement-based strategies impact learners' emotions, cognitive, and behaviour in the classroom. Through purposive sampling, Foundation Phase teachers and learners who engaged in movement-based activities will be selected. And data will be collected through classroom observations and teachers' interviews.

V. DATA ANALYSIS

Data analysis is an important part of research because it helps the researcher in making sense of the information gathered, checking ideas, as well as explaining the findings. It can be seen as the connection between raw information and useful insights, making it an important part of any research project. According to (Dibekulul,2020) data analysis is viewed as a scientific field that helps create new knowledge and solve problems. He explained it as a process of gathering, cleaning, and organising data to find relevant, needed information. This study used thematic analysis to find patterns and insights about learners' experiences and reactions to teaching that included movement, focusing specifically on their mental and physical involvement.

VI. RESULTS

These three themes emerged from the analysed data:

- Theme 1: The engagement of emotions through movement-based learning.
- Theme 2: The improvement of cognitive activation and deeper learning.
- Theme 3: The development of learner independence and motivation to participate.

A. The Engagement of Emotions Through Movement-Based Learning.

Movement based learning helps learners to feel more connected to their content and classroom by making learning enjoyable and active. Teachers have noticed that when they mix physical activities with schoolwork, learners show happiness, excitement, and eagerness, this helps lower their anxiety, making them more willing to participate, which is a good sign of engagement.

The following ideas support the results which had been drawn from this study:

- The stimulation of positive emotions and internal motivation by physical activities.
- The creation of a sense of belonging and enjoyment in the classroom.
- The reduction of boredom and disruptive behaviour by movement breaks and integrated tasks.

Most learners showed more emotions and interest when the lessons included movement, teachers confirmed that activities involving movement made everyone happy and also helped learners feel more excited and connected to learning.

- *Teacher 1 responded:*

"*When we start a lesson with a song or movement, even the shy ones join in. They get excited and want to participate, it changes the whole mood of the classroom."*

- *Teacher 4 added:*

"I notice fewer disruptions when we include action songs or movement games. The learners are more focused because they are enjoying themselves."

➢ *Classroom Observations.*

- *Classroom 2:*

Grade 1 teachers used clapping of hands and moving around to help learners learn alphabet sounds. Learners were smiling, laughing, and happily repeating the sounds without the teacher's help. The look on their faces showed that they were enthusiastic and emotionally involved in the lesson.

- *Classroom 5:*

A maths teacher included jumping and saying numbers out loud in her lesson, learners were clearly more awake and actively engaged than in the earlier lesson where they were sitting still. One of the learners even asked the teacher "Can we do more jumping numbers?"

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- *Interpretation*

Moving around seems to lower learners' anxiety and improve their mood, making them more engaged and willing to participate in activities. This shows that feeling happy can boost motivation in young kids learning.

B. The Improvement of Cognitive Activation and Deeper Learning

Moving around helps learners to understand and remember better what they have learned. By using actions to show ideas such as maths or literacy ideas, children develop deeper cognitive connections and stronger memory recall.

The following ideas support the results drawn from this study.

- Neural pathways connected to learning and memory get activated by movement.
- Diverse cognitive styles, particularly those with learning difficulties or attention challenges are supported when using kinaesthetic strategies.
- Focus and working memory are enhanced by physical movement.

Lessons which integrate movement makes learning more concrete, learners are able to understand internalised abstract concepts more effectively.

The teachers' interviews and classroom observations showed that the integration of movement into the academic content helps learners in retaining and understanding new ideas more effectively.

- *Teacher 2 shared:*

"*When we act out the life cycle of a frog, they remember it much better. They don't just listen, they do it, and that helps them understand*."

- *Teacher 5 commented:*

"*Using actions for spelling or body shapes for letters makes it easier for them to recall. It sticks in their minds longer*."

➢ *Classroom Observations*

- *Classroom 1:*

The teacher was using physical movements in teaching vowel sounds during the literacy lesson, learners were imitating the teachers' signals as they said the sounds and afterwards were able to recall them with little prompting.

- *Classroom 6:*

Using arms and legs learners created geometric shapes during maths lessons, most learners were able to recognise and describe the shapes accurately, illustrating the progress in concept maintenance.

- *Interpretation.*

Adding movement seems to improve thinking skills by helping learners learn better using physical activities, which is supported by the ideas about embodied cognition.

C. The Development of Learner Independence and Motivation to Participate

Movement-Integrated Teaching classrooms change the way power is distributed by giving learners more freedom, choices, and control over their learning, which helps them feel motivated as they feel more involved and have a sense of control.

The following ideas support this study's results:

- When learners can move and express themselves using their bodies, they tend to feel more competent and comfortable.
- Learner-centered and physically engaging activities increase motivation.
- Learners display initiation and persistence when learning in a movement integrated environment.

Strategies for movement-based activities promote independence, self-regulation, and active participation towards learning in learners, which are key components for motivation. This independence and motivation is fostered when teachers allow learners to contribute to their learning process actively.

- Teacher 3 noted:

"*When I give them the chance to create their own movements, they feel proud. They come up with ideas and love leading the class. It boosts their confidence*."

- *Teacher 6 said:*

"*I notice they stay motivated when they can move freely and have a say in how we learn. They take initiative and are more responsible for their learning*."

➢ *Classroom Observations*

- *Classroom 3:*

The teacher allowed learners to lead a movement game reinforcing counting skills. Several learners volunteered to be the "teacher" during the activity, demonstrating leadership and engagement.

- *Classroom 4:*

Learners were designing their own dance moves which represented parts of the story, this freedom of creating and performing encouraged participation and peer collaboration.

- *Interpretation.*

Strategies that are based on movements promote agency and self-regulation in learners, which increases their motivation by making them feel valued and competent.

The conducted teachers' interviews, and classroom observations showed that teaching with movement helps learners to be more engaged and feel happier in a relaxed

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learning environment. This also helps them understand academic concepts better. This encourages them to take charge of their own learning when participating, being creative and taking leadership roles.

These findings showed how important movement is in helping Foundation Phase learners learn, both physically and mentally. It also highlighted that teachers need to be creative and thoughtful when using Movement-Integrated Teaching methods. This was supported by (Son,2025) reporting that using movement in lessons does not only help learners do better in maths and literacy but also improves their basic movement skills and overall health. Learners pay more attention and feel more involved in their learning when they are physically active, as it encourages better participation and helps learners focus for a long time.

VII. CONCLUSION

This study aimed to look at how teaching methods that include movement affect motivation and engagement in Foundation Phase learners, the research used a qualitative approach that focused on understanding teachers' and learners' experiences aiming to find out how movement-integrated teaching affects the feelings, thinking and behaviour of Foundation Phase learners.

The research findings showed three main ideas that highlighted the positive effects of teaching through movement:

- Boosted emotional involvement: Learners showed more happiness, enthusiasm, and emotional investment in learning when physical activity was embedded in lessons.
- Improved cognitive engagement and conceptual understanding: Movement supported learners in making sense of abstract concepts, strengthened memory retention, and encouraged active processing.
- Increased independence and motivation for learners: Allowing learners to move around, explore and take part more freely in lessons helps them to feel more motivated, involved and in control of their own learning.

One important finding from this study is that teachers are key role players for making Movement-Integrated Teaching work well. Teachers do more than just providing information; they also create hands-on learning experiences for learners. Their creativity, flexibility, and belief in the importance of teaching through movement affects how it works directly. Helping teachers grow and providing them with adequate support is important in encouraging them to use movement activities in their classroom effectively.

Concurring with (Dursun,2025), the findings revealed that a successful teaching process depends on a number of factors, including preparation and planning, active learner participation, the layout of the classroom, and the diversity of teaching methods and techniques used.

RECOMMENDATIONS

The study has shown that using movement when teaching Foundation Phase learners helps in their motivation and engagement, the study has suggested the following recommendations to improve teaching, guideline policies, and encourage teamwork.

➢ *Teachers' Workshops for Professional Development:*

- For teachers to implement movement-integrated teaching strategies they need to attend ongoing professional development workshops. Education departments and school leaders should organise targeted workshops and training sessions which will equip teachers with practical tools for integrating movement into literacy, numeracy, and life skills lessons.
- Encourage teacher reflection and peer-sharing during these sessions to build confidence and innovation.

➢ *Rationale*

Teachers play a central role in facilitating movement-integrated learning environments. Empowering them through structured training increases their ability to design and deliver engaging, effective lessons.

➢ *Inclusion of Movement-Integrated Teaching in Policy:*

- The consideration for organising formal embedding movement-integrated teaching into the Foundation Phase curriculum and policy documents by Policymakers.
- Teaching guidelines should be updated and include movement-based strategies as part of daily instructional practices.
- Schools should be encouraged to include physical base activities when delivering lessons besides the traditional physical education periods.
- The use of movement-integrated teaching as a tool which promotes learner motivation and well-being should be monitored and evaluated.

➢ *Rationale*

Getting the official recognition for new teaching methods helps them to be accepted more and last longer, it also ensures that all schools are able to use the best practices fairly.

➢ *Teamwork planning among teachers:*

- A culture of teamwork among Foundation Phase teachers which supports the use of movement-based activities daily should be promoted by schools.
- The sharing of ideas, materials, and reflection on the effectiveness of movement strategies should be encouraged regularly by the Grade-level teams.
- Movement should not only be integrated in lessons as a tool for learning but also as the tool for behaviour support, and routine in the classroom activities.

➢ *Rationale*

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Working together in planning helps teachers learn from each other and create interesting learning environments and lessons which are consistent for their learners.

The above recommendations aim at fostering a holistic, child-centered method for teaching and learning which encourages the bond between movement and learning. Through supporting teachers, aligning policy, and encouraging collaboration, schools can create dynamic environments that motivate learners, support development, and make learning more inclusive and joyful.

REFERENCES

[1]. Bhandari, P. (2025). What is Research Objectives| Definition & Examples. Scribbr.
[2]. Brady, M., Miller, S.C. & Lindt, S.F. (2018). Movement Integration: What is it and Why Should We Do It? In: Miller, S.C. & Lindt, S.F. (eds). Moving into the Classroom. Springer.
[3]. Cox, J. (2025). Movement-Based Learning: Students Need to Use Their Bodies to Learn. Teach HUB.
[4]. Dibekulu, A.D. 2020. An Overview of Data Analysis and Interpretations in Research. ResearchGate.
[5]. Dursun, F. & Aykan, A. (2025). Exploring Teacher's Narratives: Challenges and Strategies for Enhancing the Teaching Process. SAGEJournals.
[6]. Fisher, D. & Louw, Q. (2023). Primary school's learner's movement during class time: Perceptions of educators in the Western Cape, South Africa. 23(2501).
[7]. Gilmore, L., Sullivan, K. A., & Hughes, B. (2024). Incorporating physical activities in teaching practice. *Australian Journal of Education*, *68*(2), 145-156. https://doi.org/10.1177/00049441241244553
[8]. Martin, R., McMullen, J. & Murtagh, E.M. (2020). Implementing movement Integration across the whole school: findings from the Moving to Learn Ireland Programme. 2(41), 347-366.
[9]. Mavilidi, M. F, Pesce, C., Benzing, V., Schmidt, M., Paas, F., Okely, A.D. & Vazou, S. (2022). Meta-analysis of Movement-based Intervention to aid academic and behavioural outcomes: A taxonomy of relevance and integration. V37.
[10]. McCombs, S. (2021). What is Research Objectives| Definition & Examples. Scribbr.
[11]. Mebert, L., Barnes, R., Dalley, J., Gawarecki, L., Nezami, F.G. & Shafer, G. (2020). Fostering Student Engagement through a real-world collaborative project across disciplines and institution. 5(1).
[12]. Mehiri, R. (2020). Gardner's Multiple Intelligences Theory: Implications for Teachers and Students. 2(01), 259-275.
[13]. Mgumbate, J.R., Mpedziswa, R., Twikizire, J.M., Mthethwa, E., Desta, A.A. & Oyinlola, O. (2021). Understanding Ubuntu and its contributions to social work education in Africa and other regions of the world. 43(4). 1123-1139.
[14]. Montessori, M. (2010). Montessori Theory: The key Aspect of Movement. Carrots are Orange.
[15]. Omidire, M.F, Ayob, S., Mampane, R.M. & Sefotho, M.M. (2018). Using structured movement educational activities to teach mathematics and language concepts to preschooler. 8 (1). AOSIS.
[16]. Petrigna L, Thomas E, Brusa J, Rizzo F, Scardina A, Galassi C, Lo Verde D, Caramazza G, Bellafiore M. (2022) Does Learning Through Movement Improve Academic Performance in Primary Schoolchildren? A Systematic Review. Front Pediatr. 10:841582. doi: 10.3389/fped.2022.841582. PMID: 35345611; PMCID: PMC8957225.
[17]. Pewa, N.P. & Mzimela, J., (2024), 'Early childhood development educators' perceptions of learners' readiness for Grade R', *South African Journal of Childhood Education* 14(1), a1234.
[18]. Rodrigues, A., Antunes, H. & Sabino, B. (2024). The Effect of Physical Activity Levels on Cognitive Performance: Research in Portuguese Adolescence. 6(12), 146.
[19]. Romar, J.E., Enlund, M., Lind, S. & Bjorkgren, M. (2023). Movement Integration in Academic classrooms, a focus on secondary student's experiences.23 (04), 918-928.
[20]. Ruhl, C. 2024. Montessori Theory of Education. Simply Psychology.
[21]. Sobolewski, K.M., Lobo, L.T., Stoddart, A.L. & Kerpan, S. (2024). Exploring Teachers Perspectives on movement integration using a job-embedded professional development intervention. V104. Science Direct.
[22]. Son, H. (2025). The Impact of Movement-Integrated Instruction on Physical Literacy Development in Elementary Students. 15(55). 545.
[23]. Standing, E.M. (2011). Collection on the Montessori Method, Special Collections. Lemieux Library and McGoldrick Learning Commons, Seattle University.
[24]. Sten, C. (1968). Evaluating language curricula for preschool children. Monographs of the society for Research in Childhood Development. 33(8). 49-61.
[25]. Stoll, L.A. (2016). Montessori: The Science Behind Genius. Oxford University Press.
[26]. Retrieved July 15,2025, from:
[27]. https://
seattleu.libraryhost.com/repositories/2/resources/2.
[28]. Venketsamy, R. & Hu, Z. (2022). Exploring challenges experienced by foundation phase teachers in using technology for teaching and learning: a South African case study. 10(02).
[29]. Wang, Y. (2022). A Comparative Study on the Effectiveness of Traditional and Modern Teaching Method. 270-277.
[30]. Webster, C. A., Starrett, A., Rehling, J., Chen, B., Beets, M. W., & Weaver, R. G. (2020). Understanding elementary classroom Teachers' use of movement integration resources. In *Frontiers in education* (Vol. 5, p. 56). Frontiers Media SA.