

Utilising Low-Cost Materials in Tanzanian Pre-Primary Classrooms: Stakeholders' Perspectives and Enabling Factors

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Abstract

Despite the growing recognition of low-cost materials (LCMs) as effective instructional resources in Early Childhood Education (ECE), limited empirical evidence exists on stakeholders' perspectives and the contextual factors that support their use in pre-primary classrooms in Tanzania. Guided by socio-cultural theory, which emphasizes the role of social interactions and environmental context in shaping teaching practices, this study explored stakeholders' views and supportive factors for using low-cost materials in pre-primary classes. Using a qualitative method and a case study design, data from 17 purposively selected participants (i.e., pre-primary teachers, head teachers, and education officers) were collected through interviews and then analysed thematically. The findings revealed favourable views on the importance of LCMs in improving children's development and learning. On the other hand, issues like availability of LCMs, teacher's knowledge, teachers' motivation, and support from stakeholders act as supportive factors for the use of LCMs. The study recommends professional development programme to pre-primary teachers on preparation and use of LCMs.

Keywords: Low-cost Materials, Pre-primary Education, Stakeholders' views, Supportive factors.

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1. Introduction

Globally, education intends to provide learners with knowledge, skills, and positive attitudes that contribute to personal and national development (Crawford, 2014; Molinero & Belart, 2022; Wheatley, 2018). Creating interactive and engaging learning environments is central to achieving these goals, as it fosters creativity, problem-solving, and meaningful understanding of concepts (Chowdhury, 2018). Within this context, the use of Low-Cost Materials (LCMs) has emerged as a valuable pedagogical approach that ensures active learning, imagination, and resourcefulness. LCMs consist of readily available, cost-effective, or makeshift materials sourced from local or natural resources. They are regarded useful in making learning practical, enjoyable, and compatible with learner-centred teaching and learning methods. According to social constructivism, using LCMs empowers students to take an active role in their education by building knowledge through engagement with their immediate surroundings. Children gain social, physical, and cognitive abilities as well as connect classroom learning to real-world experiences easily when they work with locally obtained materials. LCMs are therefore essential resources for encouraging young learners' critical thinking, problem-solving, and holistic development. LCMs have been recognized as effective alternatives to address limited access to industrial or commercial materials in the implementation of curriculum goals and objectives (Ali & Papaiah, 2015; Gupta, 2015). LCMs include common things such as stones, bottle caps, sticks, and containers that can be repurposed for hands-on, and question-based learning. Despite its potential, studies from countries like as India and the United States show that teachers usually fail to effectively employ LCMs due to insufficient training, restricted time, and inadequate institutional support (Ali & Papaiah, 2015; Mensah, 2015).

In Sub-Saharan Africa, such as Nigeria, Kenya, and Tanzania, analogous challenges exist. Teachers' limited skills, lack of creativity, and insufficient support hinder effective use of LCMs, leading to heavy reliance on textbooks, chalkboards, and passive classroom environments (Nkechinyere, 2017; Wambui, 2013; Makokha, 2017; Seleman, 2011; Mathias, 2015). In Tanzania, while pre-primary education coverage has expanded, many classrooms still face inadequate resources and teachers often lack the capacity to design and implement locally sourced instructional materials. There is a substantial knowledge vacuum about stakeholders' views and

obstacles in using LCMs in pre-primary education. Given these realities, there is a growing need to explore stakeholders' view and obstacles in using LCMs in pre-primary education. Understanding stakeholders' views and obstacles provides essential insights that can improve the use of LCMs in pre-primary education. Specifically, the study aims to address the following research questions: How do stakeholders conceptualize LCMs? What strategies do pre-primary teachers use to obtain LCMs? And what are the factors that support the use of LCMs in pre-primary classes?

2. REVIEW OF LITERATURE

2.1 Theoretical Framework

This study was informed by socio-cultural theory. The theory emphasizes the influence of social interactions and organized activities on an individual's cognitive processes, including thoughts, attitudes, beliefs, and perceptions. It asserts an interdependence between individual development and social context, suggesting that higher mental functions, such as teacher perception, originate from social interactions within the immediate environment. In the context of this study, the "context" refers to classroom dynamics, interactions with pupils, colleagues, school leadership, and broader educational stakeholders. Understanding the social and cultural factors that surround a teacher's work environment is essential in explaining how they perceive and use low-cost materials (LCMs). According to the theory, teaching practices and the use of LCMs are heavily shaped by daily social experiences. Teachers' perceptions evolve through constant interaction with external environments, which include societal norms, values, and educational support systems.

2.2 Implication of Social-Cultural Theory into Teachers' Perception

The socio-cultural theory offers valuable insights into the interplay between societal influences and teachers' perceptions toward LCM use. A teacher's perception is not fixed but develops from the social environment in which they operate. Their beliefs and habits concerning LCMs are affected by training experiences, creativity, attitudes, and the degree of support they receive from other educators, school leaders, and local communities. Mental processes, as highlighted by the theory, involve individual perceptions, while the social context encompasses the materials available in the child's environment and the institutional support structures. These two components are interlinked, meaning that internal teacher perceptions are shaped by external influences such as policy, funding, and access to professional development opportunities. The theory also helps to uncover challenges teachers face in integrating LCMs, challenges that stem not only from the school level but also from broader systemic structures such as national education policies, government support, and teacher motivation programs. Thus, the use of LCMs in classrooms is closely tied to the socio-cultural conditions within which teachers operate.

2.3 Rationale of Using Low-Cost Materials in Pre-primary Classes

Low-cost materials are sourced from the local environment and can be used in various educational levels. However, their significance is especially profound in pre-primary classes, where they help young children interact with familiar objects and acquire skills in an engaging, practical manner. According to Yitbarek (2012), such materials enable children to relate classroom learning to their everyday surroundings, enhancing understanding and enjoyment. Teachers who integrate LCMs into their lessons contribute positively to children's learning outcomes. Benefits include enhanced memory, increased interest, and improved social and cognitive development through hands-on learning and cooperative activities (Sivakumar, 2014). Okudo & Omotuyole (2013), critique the overreliance on imported instructional materials, which may not reflect local realities. Instead of using culturally distant symbols like "A for Apple," teachers should use relatable items such as "A for Ant" or "Aunt" to support memory and relevance. Ali & Papaiah (2015) emphasized that LCMs, being affordable and accessible, align well with the local curriculum and facilitate experiential learning. These materials require little to no cost and can be modified for instructional purposes. Their use depends largely on the nature of the local environment, availability of materials, and the teacher's ability and willingness to utilize what is around them. Hence, LCMs are vital for improving the quality and inclusivity of early childhood education.

2.4 Stakeholders' Conceptualisation of Low-Cost Materials

Low-cost materials (LCMs) as a concept have received considerable attention in ECE because of their significance in promoting meaningful, child-centred, and resource-efficient learning. Generally, LCMs involve inexpensive, locally available, recycled, improvised, or naturally occurring materials within children's

surroundings. These materials include pieces of wood, bottle tops, stones, leaves, seeds, sticks, clay, boxes, shells, and other objects that can be adapted for teaching and learning (Ali & Papaiah, 2015; Gupta, 2015). Unlike manufactured teaching aids, LCMs are recognised for their affordability, accessibility, and relevance to children's context. The way stakeholders view LCMs significantly influences their acceptance and utilisation in a learning context. Socio-cultural perspectives propose that learning resources derive their meaning within social and cultural contexts. Consequently, teachers, school leaders, parents, and education leaders may have different understandings of what constitutes learning material depending on their beliefs, experiences, and educational backgrounds. According to Yitbarek (2012), LCMs should not be understood as substitutes for manufactured materials but as a pedagogical tool that links learning with children's realities. By interacting with familiar objects, children construct knowledge more effectively because learning becomes contextualised.

Various studies conducted in different contexts show that teachers perceive LCMs as valuable resources for facilitating active learning. Ali and Papaiah (2015) noted that teachers connected LCMs with practical learning experiences, learner participation and creativity. Similarly, Gupta (2015) revealed that teachers viewed LCMs as affordable resources that enhance learner-centred pedagogies to be used, specifically in resource-constrained environments. In ECE, LCMs are always understood as aids that support children's manipulation, exploration, experimentation, and discovery, all of which are significant for cognitive development. However, stakeholders do not often share similar perceptions. Khitab (2012) found that many teachers lacked understanding of the value of LCMs and therefore rarely integrate them during teaching. Similar misconceptions have been reported among community members who sometimes connect LCMs with poor-quality education. Such perceptions may diminish support for the collection, preparation, and utilisation of it despite its educational benefits. These contrasting findings recommend that stakeholders' understanding of LCMs is influenced not only by knowledge but also by the existing beliefs about educational quality and learning resources. In Tanzania, limited research has examined how different stakeholders perceive LCMs in the context of pre-primary education. Existing studies have largely focused on teachers' perceptions and challenges linked with material utilisation (Mapunda, 2020; Seleman, 2011). Consequently, there is insufficient understanding of how various stakeholders, including head teachers and education officers, perceive LCMs within pre-primary education settings.

2.5 Strategies Used by Pre-Primary Teachers to Obtain Low-Cost Materials

The availability of learning materials remains a significant factor for the provision of quality pre-primary education. In many developing countries, shortages of learning materials have compelled teachers to use alternative techniques for obtaining learning materials. Low-cost materials give a practical means because they can be found within children's immediate environments. However, the availability of such materials relies on teachers' initiative and creativity. Research recommends that personal collection from the child's immediate environment is the most common strategy used by teachers to obtain LCMs. Teachers always collect materials like bottle tops, stones, sticks, leaves, seeds, clay, and cartons from child's surrounding and adapt them to learning (Gupta, 2015; Sivakumar, 2014). Such practices reduce dependence on purchased materials and enable teachers to design learning activities that reflect children's environment. Yitbarek (2012) claims that materials collected from children's environment enhance relevance and familiarity, thereby influencing children's understanding of concepts. Another commonly reported technique is to engage children in the collection of materials. Studies show that engaging children in collecting materials not only increases their availability but also enhances children's ownership during the learning process. Kapur (2019) reported that when children engage in collecting and preparing the materials, they develop a sense of responsibility, creativity, and appreciation for their environment. Such participation also leads to experiential learning by enabling children to interact directly with materials before the actual classroom context.

Collaboration with parents and community members constitutes another significant strategy. Research conducted in ECE settings indicates that parents can contribute materials such as boxes, fabrics, containers, and natural resources that support classroom instruction. Epstein (2018) emphasises that strong partnerships between schools and parents facilitate resource mobilisation and improve learning for children. Likewise, UNESCO (2022) highlights community engagement as a foundation for enhancing learning in resource-constrained contexts. In some cases, teachers supplement the materials through personal purchases. Although the materials are generally inexpensive, additional items such as manila sheets, marker pens, glue, colours, strings, and storage materials often require money to transform them into attractive and durable teaching aids. Previous studies have noted that teachers regularly use personal funds to buy such materials when school budgets are insufficient (Mathias, 2015; Mensah, 2015). While this signifies teacher commitment, it also raises concerns about sustainability and equitable access to it. Despite evidence regarding these strategies, existing literature has focused on material availability and utilisation rather than the specific strategies teachers use to obtain LCMs. Specifically in

Tanzania, limited empirical attention has been given to understanding the different strategies teachers use to obtain materials. Therefore, further exploration is necessary to document these practices and identify strategies that can be strengthened to support effective LCM utilisation.

2.6 Factors Supporting the Utilisation of Low-Cost Materials in Pre-Primary Classes

The utilisation of LCMs in the pre-primary context is influenced by interconnected conditions operating at teacher, school, community, and policy levels. Although LCMs are always readily available within surroundings, their effective use into teaching and learning rely on factors that enable teachers to identify, prepare, and utilise them appropriately. One of the most cited factors is teachers' knowledge and skills regarding LCMs utilisation. Research consistently shows that teachers with pedagogical knowledge and skills are capable of identifying appropriate materials, modifying them for classroom learning activities (Guerriero, 2017; Darling-Hammond et al., 2020). Professional knowledge enables teachers to connect materials with children's developmental needs, hence the achievement of curriculum objectives. Similarly, Tarman and Dev (2018) stated that pedagogical competence predicts teachers' ability to utilise the materials effectively. Professional development programmes have also been found to reinforce teachers' capacity to improvise and use the materials creatively (Ulla, 2018). Availability of materials within the surroundings also plays a crucial role. UNESCO (2021) noted that educational practices become more sustainable when they use resources that are collected within the immediate environment. Various studies show that teachers are more likely to use LCMs when materials are easily found and at minimal cost. Samuelsson and Kaga (2019) similarly claim that meaningful learning takes place when children interact with materials collected from their surroundings. Therefore, environmental abundance serves as a significant enabling factor for LCM utilisation.

Another critical determinant is teacher motivation represents. Motivation accelerates teachers' willingness to invest effort and time in collecting, preparing, and utilising LCMs. Collie (2021) found that motivated teachers show greater creativity and innovation in teaching practices. Likewise, Han and Yin (2016) reported that teacher motivation is positively connected with the adoption of innovative teaching strategies and learning resources. Teachers who recognise the value of using LCMs are more likely to allocate time for their preparation and integration into classroom learning activities. Support from stakeholders is a significant factor in the successful utilisation of LCMs. Literature emphasises the importance of parental engagement in influencing educational resources and learning outcomes (Epstein, 2018; Goodall, 2018). Parents, community members, and educational leaders may provide tangible materials, financial support, and technical assistance that facilitate the preparation and use of LCMs. UNESCO (2022) further identifies community participation as a crucial factor for improving the quality of ECE. Recognition strategies such as competitions and exhibitions have also been recognised as an important motivating factor. Professional recognition motivates teachers to demonstrate creativity and innovation in teaching practice. According to OECD (2019), systems that acknowledge teacher successes positively influence motivation and instructional effectiveness. Similarly, Tran et al. (2020) noted that professional recognition influences innovation and sustains improvement among teachers. Exhibition programmes, therefore, give opportunities for teachers to demonstrate and share their practices, learn from peers, and gain recognition for their efforts in preparing and utilising LCMs.

3. Methodology

This study adopted a qualitative research approach to explore stakeholders' view and obstacle hindering the use LCMs in pre-primary education. The qualitative approach enabled the researcher to examine participants' experiences and perspectives in their natural settings (Creswell, 2018). A single case study design was employed to provide in-depth insight into views and obstacles associated with the use of LCM (Yin, 2018). The study involved 17 participants, including pre-primary teachers, head teachers, and education officers. Purposive sampling was used to select participants with relevant experience and knowledge regarding the use of LCMs. Pre-primary teachers were chosen based on their teaching experience, while administrative and supervisory staff were included to provide complementary perspectives. In this study researcher employed semi-structured interviews with teachers, head teachers, and education officers. An interview schedule that consisted a flexible open-ended question that enabled the researcher to capture in depth information regarding views and supportive factors for the use of LCMs. Basing on this study, the average duration for an interview was thirty to forty-five minutes (30-45 minutes).

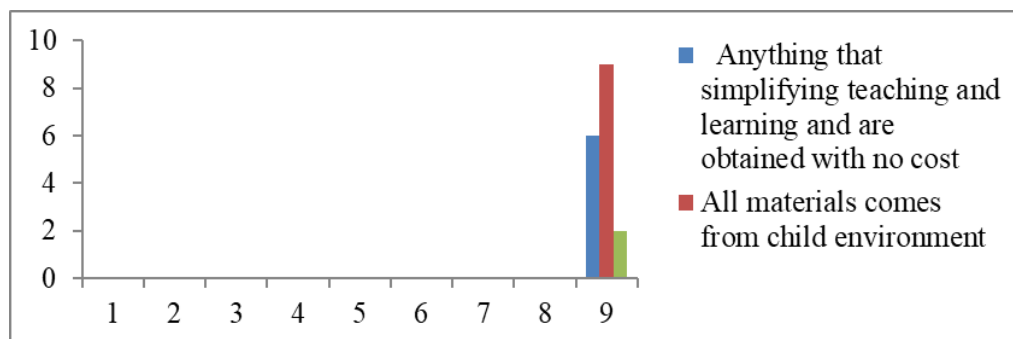
Data analysis was done following Braun and Clarke's (2012) six-step thematic analysis framework. At first, all interview recordings were transcribed verbatim and carefully reviewed together with field notes to ensure accuracy and familiarity with the data. During this stage, the researcher repeatedly re-reads the transcripts while developing preliminary notes regarding emerging ideas and patterns. The initial codes were generated manually

by identifying meaningful statements, phrases, and segments related to stakeholders' understanding of LCMs, strategies used to obtain them, and factors influencing their utilisation. Codes were grouped to form broader categories that reflected common patterns across participants' responses. The categories were systematically reviewed and compared across all transcripts to develop meaningful relationships and ensure consistency with the dataset. Those categories addressing similar issues were combined to generate themes. Then the themes were refined, defined, and named based on the study objectives. Throughout this process, the researcher continuously connected the themes with the original transcripts so as to confirm if they reflect participants' views and experiences. Finally, the report was produced by integrating the themes with relevant verbatim quotations from participants and existing literature. The use of direct quotations enhanced the credibility of the findings by providing evidence of how interpretations were derived from participants' accounts. This rigorous analytical process contributed to the credibility, dependability, and authenticity of the study findings.

4. FINDINGS AND DISCUSSION

4.1 Stakeholders' Conceptualisation of LCMs

The study explored stakeholders' conceptualisation of LCMs. The participants were asked to explain what they consider to be LCMs. The findings revealed varied conceptualisations of LCMs among stakeholders, as shown in Figure 1:



As shown in Figure 1, stakeholders were well-informed about LCMs. They considered LCMs as learning materials that are easy to find, locally available, and low-cost. In complying with their arguments, one of the pre-primary teachers said:

In fact, low-cost materials are learning materials present in our environment at no cost. For example, pebbles, leaves or bottle tops (Teacher A, Interview).

A similar view was provided by the other teacher who reported:

Low-cost materials are those materials that are less costly, simple to use and less time-consuming when a teacher prepare it. These materials can be boxes, bottle tops, sticks, clay soil, banana or coconut cobs, and a piece of wood. (Teacher B, Interview).

In addition, the district education officer had the following to say:

Low-cost materials are all things that are familiar to children, and they are present in their local environment. They can be easily obtained and used in teaching and learning. For example, bottles, pebbles, sticks, pieces of clothes, and a thermos (District Education Officer, Interview).

These findings aligned with what was generated through observations. Observations established that classes had learning materials directly sourced from the local environment, such as pebbles, sticks, bottle tops, coconut cobs, grains, and flowers. These findings imply that stakeholders have an adequate understanding of LCMs. In other words, stakeholders demonstrated clear awareness of LCMs by providing a clear definition and relevant examples. These findings align with those of Ali and Papaiah (2015), who found that teachers perceived LCMs as resources with minimal or no cost, derived from natural or household waste. However, the results contradict with that of Khitab (2012), who found limited familiarity with LCMs among secondary school teachers, with 95% reportedly unprepared to use them.

4.2 Strategies used by Pre-primary Teachers to obtain LCMs

This study also explored strategies that pre-primary use to obtain LCMs. Pre-primary teachers reported obtaining materials through personal collection, purchasing from shops, or donation from stakeholders. One of the teachers reported that:

I normally collect materials from our local environment and bring them to school. Those materials include pebbles and bottle tops. I sometimes buy materials of low costs like toys, chart of alphabet, cards using my money or small funds from the head teacher (Teacher C, Interview).

Similarly, another teacher added that:

My school is near to the shops behind there, so I ask people to give me boxes, and other discarded items which are not in use so as to create some simple tools like cards and charts. Sometime I go to carpenters nearby and collect some piece of wood which are very useful for children to learn drawing and writing (Teacher F, Interview).

Moreover, one of the WEO was quoted saying:

Some of the teachers are very committed because they use their little pocket money buy materials such as glue or manila sheets. Sometime, they find carpenters to carve their tools or they collect direct from their surroundings in collaboration with children (WEO A, Interview).

These findings imply that both individual efforts and school support are used to ensure availability of LCMs in pre-primary classrooms. These practices align with Gupta (2015) and Sivakumar (2014), who emphasized the value of children's involvement and teacher initiative in sourcing materials. Kapur (2019) also stressed that learning begins when children participate in making instructional aids. Teachers can further enhance learning by assigning pupils to draw, mold, or carve simple items.

4.3 Supportive factors for the use of LCMs in pre-primary classes

The study further explored supportive factors for use of LCMs in pre-primary classes. Participants were asked to explain supporting factors for the use of LCMs in their daily teaching and learning. The participants had varied responses as described in the following subthemes.

4.3.1 Teachers' knowledge of LCMs

The findings indicated that teachers' awareness of LCMs and how they can use LCMs are important factors that guarantee the use of LCMs in teaching and learning. Specifically, it was found that knowledgeable teachers can modify LCMs into attractive and manipulative learning materials. It further reported that knowledgeable teachers can design lessons that support the use of LCMs, as one teacher reported:

It is obvious that knowledge of low-cost materials is a key factor that enable me to use them. None of us than the one who knows what are these materials and how they are used in teaching and learning can use them (Teacher C, Interview)

Likewise, ward education officer said:

I think teachers with adequate knowledge of low-cost materials can integrate them in teaching and learning (Ward Education Officer, Interview).

The findings reveals that teachers' knowledge of LCMs significantly influences their ability to integrate during the lesson deliver. Teachers with knowledge of LCMs understand how to identify, improvise/modify and pedagogically apply the materials consistently. Some of the recent studies support this finding. For example, study conducted by Guerriero (2017) stresses that teachers' professional knowledge directly impacts instructional deliver of lesson in the classroom settings. Similarly, Darling-Hammond et al. (2020) argue that teachers' pedagogical competence and flexibilities determine to what extent can apply instructional resources during teaching and learning.

In the contexts of early childhood education, Tarman et al, (2018) reveals that teachers' knowledge and instructional skills are strongly influence and predict the effective use of teaching materials. Likewise, Ulla (2018) conveyed that in-service teacher training and professional development programmes promote teachers' ability to improvise, modify and use them effectively during classroom sessions. The present study aligns directly with these findings by indicating that teachers with professional knowledge can prepare learning activities that automatically integrate LCMs creatively. However, unlike some studies still put much emphasize for formal professional trainings as the key

determinant of the competence, but this study proposes contextual awareness and practical classroom experience play a critical role.

4.3.2 Availability of LCMs in the environment

All 17 participants reported easy availability of LCMs as the supportive factor that influence them to use. They specifically explained that LCMs can be sourced at low or no cost at all and they require teachers' little time to collect and prepare them. One of the pre-primary teachers reported:

I always use low-cost materials in teaching and learning because I can easily access them in my environment at low or no cost. I also need little time to modify them to fit the intended use (Teacher F, Interview).

Similar view was provided by ward education officer who said:

I think pre-primary teachers use LCMs because they can easily obtain them in their environment. They do not need much time and money to obtain most of LCMs used in teaching and learning (Ward Education Officer B, Interview).

The research findings show that, the availability and affordability of LCMs within child's environment influence teachers to them during teaching and learning. Classroom teachers stated that these materials are readily available at little or no cost and require minimal preparation time. Various recent literatures supports the importance of contextual and resource-based teaching approaches. According to UNESCO (2021), describe that, the use of locally materials available around the child contexts promote sustainability and relevancy in the early childhood practices. Additionally, study conducted by O'Sullivan (2019) highlighted that, scarcity of resource often influences innovative use of locally sourced materials. In the context of Early Childhood Education, Samuelsson and Kaga (2019) condemned that meaningful learning take place when children interact with the materials from the locally environment. The current findings are consistent with these studies, demonstrating that environmental availability promotes LCM use. However, while many studies emphasize lack of resources as a barrier (World Bank, 2018), this study contrasts that narrative by showing that environmental abundance of local materials can function as an enabling factor.

4.3.3 Teachers' motivation

Many participants reported that teachers' motivation to use LCMs to simplify teaching of various constructs is one of the supporting factors for using LCMs. They claimed that motivated teachers are likely to allocate time for collecting and preparing LCMs. The district education officer indicated that:

I think motivation determines how teachers prepare and use teaching and learning materials. Teachers who are motivated to use low-cost materials to simplify teaching and learning are likely to allocate time to prepare low-cost materials and use them during teaching and learning (District Education Officer, Interview)

A ward education officer added that:

Apart of knowledge of low-cost materials, motivation is a second factor that makes teachers collect and use low-cost materials during teaching and learning. It is obvious that motivated teachers find possibility to ensure availability of adequate low-cost materials to make teaching and learning engaging and interesting (Ward Education Officer B, Interview).

The findings reveals that teacher motivation is a key determinant factor that influence the preparation and use of LCMs. Teachers who are motivated spend their time and efforts in collecting, modifying and improvising teaching and learning materials for instructional purpose. Various contemporary studies strongly support the connection between teacher motivation and the use of LCMs for instructional purposes. According to Collie (2021), reveals that, teachers with higher internal motivational show greater creativity and adaptability in classroom instructional. Concurrently, Han and Yin (2016) found that teachers who are motivated are more likely to use innovative teaching techniques and the use of improvised resource. Furthermore, OECD (2020) reported that, teacher enthusiasm and professional commitment are direct connected with improved teaching practices and learner participation. The current findings concur with these studies articulating that motivated teachers are practical in preparing LCMs. However, while some various research studies insist incentives as the key motivators (Bennell & Akyeampong, 2019), this study strongly recommend the intrinsic commitment and professional responsibility are equally influential factors.

4.3.4 Support from stakeholders

Majority of the participants reported that support from parents, children, and other stakeholders encourage the use of LCMs in pre-primary classes. They also explained that these stakeholders donate various LMCs that teachers can use in teaching and learning. They further reported that stakeholders play a significant role of ensuring availability of LCMs in pre-primary classes. One of the teachers reported:

Parents and children bring various local materials to school. This ensures availability of learning materials and no excuse of using in teaching and learning (Teacher D, Interview).

The ward education officer added:

We have many stakeholders who provide our schools with various learning materials including low-cost materials. I think this ensure availability of low-cost materials and use of them in teaching and learning (Ward Education Officer A, Interview).

The findings reveals that the availability and the use of LCMs is influenced by the support from parents, children, and other stakeholders. Various research studies confirm the importance of school-community collaboration. Epstein (2018) reported that the presence of effective school-family partnerships promotes availability of educational resources and learning outcomes. Similarly, Goodall (2018) recommend resources and classroom practices is enhanced by meaningful parental engagement.

In the context of early childhood education, Kim and Sheridan (2015) express that family involvement in educational practices contributes significantly to improved learning environments and material availability. Similarly, UNESCO (2022) pointed out that, community engagement is a key strategy for improving teaching and learning practices in Early Childhood Education in the developing contexts. The current study aligns with these views by describing that education stakeholder contributions ensure the availability of LCMs. However, while some studies report low parental involvement in rural contexts (World Bank, 2018), this study reveals strong stakeholder collaboration, suggesting contextual variation.

4.3.5 Exhibition and competition programmes

Participants reported that exhibition and competition programme on preparation and use of low-cost materials at school and ward level promote the use of LCMs in pre-primary classes. They further explained that schools and wards normally organise these activities and the winner is awarded. One of the teachers reported:

I prepare and use low-cost materials because I am required to exhibit them and engage in competition with other teachers. In those competitions, the teacher who prepares and use effectively low-cost materials is given a prize (Teacher F, Interview).

Similarly, a ward education officer reported:

I think the frequent use of low-cost materials is promoted by exhibition and competition on the use of low-cost materials organised at school and ward level. This is regarded as motivating factors for teachers' preparation and use of low-cost materials (Ward Education Officer, Interview).

The findings demonstrate that LCMs exhibitions and competitions programmes can motivate teachers to prepare and use LCMs. The recognition and rewards being given by their educational leaders to the winners during the exhibitions play a key motivating factor in their performance. Various recent literatures support the impact of recognition system to enhance performance. According to Tran et al, (2020), reported that professional recognition accelerates teacher creativeness and innovation during instructional deliver. Similarly, OECD (2019) reveals that system that recognise performance of the teachers positively stimulate teacher motivation and classroom practices. However, current studies also put attentions that extremely reliance on extrinsic rewards may weaken intrinsic motivation (Ryan, 2020). The present findings propose that competitions and exhibitions programmes function as complementary motivators rather than only drivers, working alongside intrinsic professional commitment.

5. Conclusion

This study explored stakeholders' understanding of low-cost materials (LCMs), the strategies used by pre-primary teachers to obtain them, and the enabling factors for their utilisation in the Tanzanian pre-primary context. The findings show that stakeholders generally have a positive conceptualisation of LCMs and recognise them as valuable resources that can be found from children's immediate environments. Such understanding is significant because it

gives a foundation for enhancing learner-centred and contextually relevant teaching and learning practices in the context of ECE. The study further reports that teachers use various techniques such as collecting materials from local environments, engaging children and parents in material collection, seeking community support, and, in some cases, using personal resources to ensure LCMs are available. These practices indicate teachers' commitment to addressing instructional resource scarcity. However, the findings recommend that the sustainability of these efforts relies on broader institutional and community support rather than individual teacher initiatives alone.

Furthermore, the study indicated that the successful utilisation of LCMs is influenced by various interrelated factors, including the availability of materials, teachers' knowledge and skills, teacher motivation, stakeholder support, and engagement in exhibition and competition programmes. These factors collectively create enabling factors that encourage teachers to prepare, adapt, and integrate LCMs into classroom instruction. Consistent with the socio-cultural theory guided this study, the findings show that the use of LCMs is shaped not only by individual teacher but also by the broader social environmental contexts where learning take place. The study, therefore, concludes that LCMs are not merely alternatives to manufactured resources but are strong pedagogical tools capable of influencing active learning, participation, creativity, and contextualised learning experiences for children. Nevertheless, their effective utilisation needs deliberate investment in teacher professional development, sustained stakeholder engagement, strengthened school-community partnerships, and supportive educational leadership. Strengthening these enabling factors will contribute to improving the quality, inclusiveness, and sustainability of pre-primary education in Tanzania and other resource-constrained educational settings.

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