KUVEZA NEKUUMBA

THE ZIMBABWE EZEKIEL GUTI UNIVERSITY
JOURNAL OF DESIGN, INNOVATIVE THINKING AND PRACTICE

ISSN 2957-8426 (Print)
ISSN 3007-2204 (Online)

Vol. 4 (Issues 1&2), 2025

Published by the Zimbabwe Ezekiel Guti University Press
Stand No. 1901 Barrassie Rd,
Off Shamva Road
Box 350
Bindura, Zimbabwe

Typeset by Divine Graphics
Printed by Divine Graphics

SUBSCRIPTION AND RATES
Zimbabwe Ezekiel Guti University Press Office
Stand No. 1901 Barrassie Rd,
Off Shamva Road
Box 350
Bindura, Zimbabwe
Telephone: ++263 8 677 006 136 | +263 779 279 912
E-mail: zegupress@admin.uz.ac.zw
http://www.zegu.ac.zw/press

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The purpose of the *Kuveza neKuumba - Zimbabwe Ezekiel Guti University Journal of Design, Innovative Thinking and Practice is* to provide a forum for design and innovative solutions to daily challenges in communities.

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Kuveza neKuumba - Zimbabwe Ezekiel Guti University Journal of Design, Innovative Thinking and Practice

ISSN 2957-8426 (Print)
ISSN 3007-2204 (Online)

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Early Childhood Education as an Instrument for Design Thinking: Cases and Examples

GERRY MHLANGA[1] AND SHEPHERD GUMBO[2]

Abstract

The United Nations Convention on the Rights of the Child (UNCRC) has adopted Early Childhood Development (ECD) as a child rights issue, obligating every nation to implement it for it promoted design thinking. Though the 2004 ECD policy in Zimbabwe calls for the universal adoption of the ECD programme, most low-income rural communities still lacked behind, thus depriving children their right and opportunity to thrive. This qualitative study adopts the collective case study design and triangulated interviews, focus group discussions and observations, was undertaken to understand the challenges and to ultimately proffer suggestions on how ECD education could be utilised as an instrument for design thinking. The design thinking model informs the study. The themes that came up from the educators, parents and learners who participated revealed that, ECD packages, including play, promote creativity, confidence, collaboration and cooperation in learners and these were deemed important for design thinking. Even though, the mandate of ECD is misconstrued, hence less supported by some parents. Resources were inadequate and ECD centres were far apart, thus limiting some learners to enrol early. Experiential pedagogy,

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innovation shows, community advocacy and policy formulation, increased ECD centres and extensive training of ECD specialists are recommended.

Keywords: child learning, critical thinking, innovation, low-income communities, quality education, Zimbabwe

INTRODUCTION

Many countries, the world over, have enacted policies that prioritise the education of young children from as early as the age of three years. In most such countries, the education of young children is categorised as Early Childhood Education (ECE) or Early Childhood Development (ECD) and normally starts from the age of three up to the age of six years (Pyle *et al.*, 2020). The rationale for ECE/ECD is multi-fold and includes overall child development and setting frameworks for understanding the learning style needs of learners even for future studies (Taylor and Boyer, 2020). Due to its child preparatory nature, ECE can be utilised as an instrument for design thinking in the field of education. The introduction of ECE can thus be lauded as a giant step towards founding strategies to prepare any nation for future development. Yalcin (2022) commends the design thinking process with reference to secondary schools where it been has proven that it helps children in developing learning techniques and inquiry skills and enables peer learning by encouraging teamwork. Earlier, Carroll *et al.* (2010) appraise the design thinking process for encouraging children to express their opinions which makes them connect between academic learning and the design-oriented learning process. Yalcin and Erden (2021) also analyse the utility of design thinking in Science Technology Engineering Mathematics (STEM) programmes for ECD learners where they find positive correlation.

While these prior studies contribute much to the development of the current study, the point of departure is that they all analyse how design thinking could inform ECD pedagogy while the current study considers ECD as an instrument which could be utilised to promote design thinking. The approach to anchor ECD education activities as impetus for design thinking has been adopted after realising the potential that ECD activities might have in promoting problem-solving skills, innovation and societal development (Gargiulo and Kilgo, 2020; McGinn, 2017).

However, the recognition of the education of young children and the ratification of international conventions which call for educational equality, such as the United Nations Convention on the rights of the Child (UNCRC), inequities in the provision of quality education still remain in Zimbabwe, thereby stalling design thinking (Nhundu, 2023; Sibanda, 2018). Studies carried out in Zimbabwe and in other African countries indicate that ECD education is perceived differently, hence unequal distribution of resources towards the sector (Gargiulo Mangwaya *et al.*, 2016; Kilgo, 2020; Nyarambi and Ntuli, 2020). The cited studies show that there are marked differences in terms of the quality of education, ranging from infrastructure, material provisions to human resources. Other than noting the differences and acknowledging that some low-income rural communities of Zimbabwe have been disadvantaged in terms of accessing quality early education, scholars remain largely silent about how the affected communities could get themselves out of the problems. It has been noted that the major problem is that communities have diluted understanding of the significance of ECD education in relation to future progression needs of the learners (Bipath *et al.*, 2021). Nhundu (2023) in a study in Zimbabwe notes that some parents still believed that ECD centres served less other than providing child care-giving services and such parents, therefore, do not largely commit

themselves to some requirements of ECE arrangements such as contributing in infrastructure development and attending school meetings.

Unfortunately, literature indicates that proficiency in academic achievement can be traced to the quality of ECE one would have received (Mbugua and Trube, 2018). ECE has been hailed in other countries such as China and the United States of America as an instrument for design thinking (Pyle *et al.*, 2020). The current study thus illustrates how ECE could be utilised as an instrument for design thinking within low-income rural communities of Zimbabwe, where research shows that it has not been fully embraced. The study thus draws from both literature and contemporary empirical evidence. Noting the poor quality of some ECE systems within the low-income communities of Zimbabwe and the evidence available that points to the efficacy of ECE to the success of the education systems in other countries, the current study is conducted to establish how ECE could be utilised as an instrument to promote design thinking within an education system that calls for homegrown innovative solutions to local problems.

This article is divided into four major sections which include the introduction, where the problem which motivates the study is briefly explained, followed by the literature review, expounding on ECE studies carried out elsewhere. After the review of literature, the methods adopted for the study, are described before the findings are presented and discussed.

CONCEPTUAL FRAMEWORK

The anticipated design thinking skills to be generated out of the ECE programme are summarised in Figure 1.

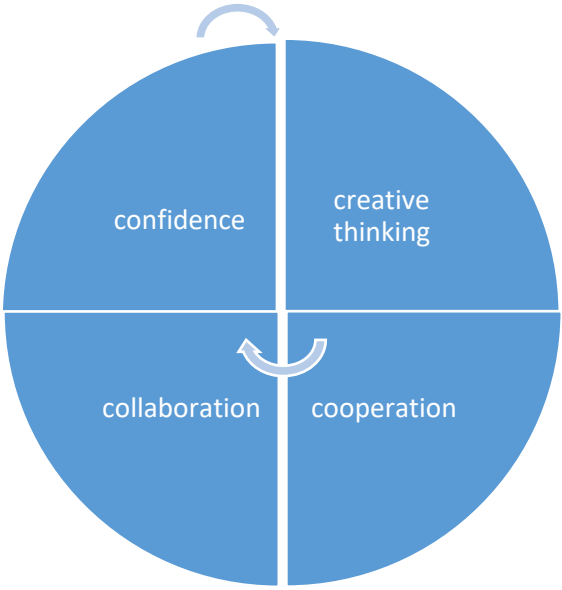

Figure 1: *Design thinking skills* (Authors, 2024)

The study leading to the production of this article was anchored on the design thinking model. The design thinking model is a non-linear five-step model, structured around the following key concepts: empathise, define, ideate, prototype and test (Dam and Siang, 2018a). Design thinking is a process that helps us to understand individuals, examine possible solutions and redefine problems to develop new and different solutions (Dam and Siang 2018a; Yalcin, 2022). The proponents of the design thinking model ideate that for any programme to succeed, it has to involve full participation of the group to which it has to be implemented. Empathise means that the research ought to have a clear glimpse of the real problems experienced by the subjects and then be able to articulate them, thus the defining stage. Thereafter, ideas to solve the problem should be suggested by the subjects (ideate stage) and it is from the suggested ideas

that a model (prototype stage) can be drawn to be finally tested for its implementability. Though, it seems like it follows a particular pattern. Dam and Siang (2018b) hint that the five steps of the model cannot be religiously followed since they can interweave.

The current study on the place of ECE as an instrument for design thinking cannot be satisfactorily analysed without referring to the design thinking model for several reasons. First, the design thinking model emphasises the need to involve the subjects affected by a particular problem, to generate solutions to the problem and this idea resonates well with the need to involve ECD educators and parents in designing education programmes for young learners. The involvement of the people on the ground affected by the problem has the advantage of improving cooperation and collaboration towards finding a lasting solution to the problem. Secondly, design thinking encourages critical thinking, necessary when one intends to find home-grown solutions to problems. Challenges that impact proper setting up and management of ECE systems in low-income communities in Zimbabwe, can better be solved by the people in those communities utilising locally available resources, rather than relying on borrowed strategies which may not apply in some particular communities. The adoption of the design thinking model, critical review of literature and the interviewing technique, complement each other in revealing intricate data about how ECE systems could be improved. While the literature review provides data from elsewhere and from previous experiences, the empirical part extracts real issues obtaining on the ground, hence help in the reconstruction of consolidated knowledge. The design thinking model resonates with the current call for innovation within less functioning ECE systems in Zimbabwe as it encourages the subjects to generate new ideas to solve contemporary challenges. It is important to consider ECE as an instrument for design thinking because all

educational problems have some origins that need to be analysed to understand them to generate solutions for the future.

LITERATURE REVIEW

The current study intends to establish how the ECD education programme could be used as a design thinking instrument in some selected low-income rural communities of Zimbabwe. The literature reviewed thus borders on global trends on the development of ECD, ECD development in Zimbabwe, the importance of ECD, components of a model ECD system and challenges that can possibly impact ECD education in low-income communities.

The United Nations' Sustainable Development Goal number 4.2 entitled Early Childhood Development and Universal Pre-primary Education aims to ensure that by 2030, all girls and boys have access to quality ECD care and pre-primary education so that they are ready for primary education (UNESCO, 2022).

Children have been going through some form of education from birth in various ways in all societies through time. Even today, the informal education system persists in all world communities. It is important to note that when society educates the young, the intention is to prepare them to be critical thinkers such that they are able to innovate and solve problems for their future survival (Pyle *et al.*, 2020). Studies prior to the current one, testify that ECE is instrumental in children's language, cognitive, social and emotional development, forming the basis upon which future academic and social success are enhanced (UNESCO, 2008; Deiner, 2010; Macewan, 2015). As argued by Gargiulo and Kilgo (2020), the United States Government initiated the Head Start programming to expose children to foundational knowledge and skills which will help

them escape from poverty. In Nigeria, the federal government launched the Universal Basic Education (UBE) in 1999 and the programme was supported by the establishment of the Universal Basic Education Commission of 2004 whose major responsibility was to monitor the implementation of basic education. All this was done to ensure that the goals for the Education for All (EFA) were achieved.

The current ECE framework in Zimbabwe was officially launched in 2005 following the 2004 National Early Childhood Development (NECD) Policy that drew guidelines for the implementation of ECD services from the recommendations of the 1999 presidential inquiry into education (Nhundu, 2023). As argued by the NECD, all primary schools ought to have ECD classes. The primary objective of ECD education in Zimbabwe is to prepare young children (3 to 5 years) for literacy, numeracy and technological skills (Sibanda, 2018). Furthermore, it helps to develop in children some awareness of personal and national identity and demonstrate foundational skills for lifelong learning through self-learning and problem solving (Ministry of Primary and Secondary Education, 2005).

Prior to the 2005 ECD policy proclamation, the education of young children in Zimbabwe was not clearly spelt out. Pre-independence, the white population received education under the 1973 Nursery School Regulations superintended by the Ministry of Education, while the Department of Social Welfare was responsible for crèches and the general welfare of black children that had no education component as laid out in the Child Protection and Adoption Act of 1972 for black African children, (Mangwaya *et al.*, 2016). Following the attainment of independence, Nziramasanga (1999) reports that the 1982 Early Childhood Education and Care (ECEC) which was supposedly to see all schools introducing ECE, remained theoretical with little support for the cause from the government and other

stakeholders, hence only a few well socialised communities provided resources and initiated programmes to ensure that their children received some early education to prepare them for formal primary school (Samkange, 2016).

Nhundu (2023) observes how, soon after independence and in most rural Zimbabwe, Early Learning Centres were community-based programmes where resources, infrastructure provision and payment of the teachers was under the ambit of locals which, of course, unfortunately impacted the education of the children since unqualified teachers ended up teaching the children. As argued by Nziramasanga (1999), the ECE initiatives did not yield intended goals of providing universal education to all children in the country, thereby setting unequal conditions for learners as they started their primary school education. The ECD framework, in its current form, was therefore necessary to spearhead design thinking among all the children in Zimbabwe. While the current ECD policy in Zimbabwe has a universal face, the quality of education provided in low-income communities remains, poor thereby inhibiting design thinking. The current study thus seeks to get views of key stakeholders within the low-income communities on how ECD education could be used as a design thinking instrument.

Early childhood education has been hailed as a foundation for success for future education. The Kenyan government has prioritised ECDE as part of its Vision 2030 Development Strategy (2008-2030) to increase equity of access and improve the quality of early childhood education services (Government of Kenya, 2008).

Since the inception of the ECD programme in Zimbabwe, several benefits were realised in the education system and in the country at large. The benefits of ECE transcend the individual learner or families and the education system to other

social institutions. ECD programmes promote the quality of human capital; that is, individuals' competencies and skills for participating in society and the workforce (UNESCO, 2008). Other studies reveal that competencies and skills fostered through ECD programmes are not limited to cognitive gains, but also include physical, social and emotional gains and all these are determinants of health over the life course (Mbugua and Trube, 2018). Overall, the ECD programmes that incorporate and link health-promoting measures such as good nutrition, immunisation, participation, care, stimulation and protection promise sustained growth in physical, social, emotional, language and cognitive development which are key to design thinking and innovation.

Although the ECD programme in Zimbabwe brought about several benefits as outlined above, the programme has met some setbacks. One of the major setbacks has been the shortage of sufficient instructional and play materials, high pupil-teacher ratios, and inappropriate teaching methods remain persistent challenges (Republic of Kenya, 2017). The high teacher-pupil ratios, which were, as high 1:60 learners, impacted on proper implementation of inclusive education in ECD classes. Findings of a study in Zimbabwe on children with special needs show that lack of differentiated teaching instructions due to limited pedagogical skills from educators, results in learners with specialised individual needs not benefiting from schooling experiences (Chinhara and Kuyayama, 2024). With reference to the current study, scrutiny needs to be, therefore, taken to establish the level of proficiency among teachers who manage ECD classes because inadequacies may impact on the transferability of skills to the learners.

Although ECE is popular among communities, the way programmes are run differ from country to country and from

community to community within the same country. Generally, however, there are laid down expected standards for an ECE system that can encourage design thinking and proper progression of learners. One aspect is a play centre with all the equipment and space which allows children to experiment and explore. Smith (2018) commends ECD play centres in that they do not only provide physical training for the learners, but also foster social and emotional development which are critical for inclusivity in society. Good play centres offer protection to learners and ensure that children are healthy. In a well-resourced play centre, children experience challenges but are able to design problem-solving techniques either individually or in groups, hence effective in promoting design thinking. As argued by Bipath *et al.* (2021), it is the responsibility of both the parent community and the relevant departments to ensure that the necessary age-appropriate resources for children from birth to four years are made available.

Other than a viable play centre, a proper ECE programme should be managed by competent and qualified members of staff. The members of staff should be able to plan learning programmes that foster creativity among the learners. In addition, empathy should be exercised, taking due consideration that children enrolled are from different backgrounds, hence require specialised treatment in accordance with their needs. Well-trained members of staff are also able to relate with the parents and guardians of the learners and promote cooperation which is important for design thinking.

As argued by Nhundu (2023), the Zimbabwe Network of Early Childhood Development Actors (ZNECDA) stipulates that the standard expected of an ECD programme should address the following aspects: physical environment, curriculum, schedule

and staffing, nutrition, health, transportation, staff qualifications connections with families' operations and administration. ZNECDA is a trust established in 2012 to mobilise non-state actors from the 10 provinces of the country to create a platform for championing ECD issues at national, regional and international levels (Mangwaya *et al.*, 2016; Sibanda, 2018). Despite the existence of organisations such as ZNECDA, which call for quality ECD education across Zimbabwe, evidence of inequalities are still visible, especially if one compares low-income rural communities and some urban set ups, hence the current study intends to see how improvements could be made to promote design thinking among all the learners in the ECD age group.

RESEARCH METHODOLOGY

The current study is meant to illustrate how ECE/ECD could be used as a design thinking programme to propel the future education of children, thereby promoting the socio-economic development of Zimbabwe. It thus adopts a qualitative research approach which incorporates the case study design because the approach seeks to delve into descriptions, interpretations and understanding of little-known phenomena (Creswell and Creswell, 2018). The case study design is deemed appropriate in the current study because of the design's inquisitive and depth seeking nature on little understood phenomena (Cropley, 2021), such as the applicability of and ECD programme as a design thinking instrument. It triangulated the key participant interview, the focus group discussion and participant observation as data collection techniques. The interview technique ensures that participants share detailed experiences about the utility of ECE in promoting lifelong education and in creating a platform to solve societal challenges. The efficacy of the qualitative research approach when collecting data is premised on the fact that it utilises techniques such as face-to-

face interviewing and focus group discussions both allowing, the participants and the researchers to interact, share experiences and explore issues in depth thereby ensuring data saturation (*ibid.*).

Thus, the interview technique physically helps in extracting real experiences of the participants because all misconstrued questions are clarified by both the interviewers and the participants. Since the study explores ECE, the research held interviews with nine ECE teachers equitably and purposively selected from three schools for their richness in early childhood education experiences. One group consisting of seven parents from each of the selected schools, participated in focus group discussions for they had first-hand experiences of how their children were developing as a result of the exposure to ECD education. Since the study seeks to critically consider how ECD could be used as an instrument for design thinking, it adopts the participant observation technique too to collect data. The study observed two lessons conducted by each of the nine teachers who made up the study sample. The observations were intended to establish activities that promoted the design thinking skills, namely collaboration, confidence, cooperation and critical thinking.

The findings of the study were thematically analysed. The data that were recorded verbatim were transcribed before they were translated. Codes indicating related data were marked after repeated reading. These were then discussed with the participants for validation purposes. The validated and coded data were then developed into themes in line with guidelines as provided by Creswell and Creswell (2018).

FINDINGS

The study was carried out to establish how ECE/ECD could be utilised as an instrument for design thinking for further

educational accomplishment and societal development. Data were drawn empirically from ECD educators and from the parents of children from some selected schools in low-income rural communities of Zimbabwe. The findings show that the success or failure of the implementation of ECE as an instrument for design thinking, hinges on society's perception of the role of ECE. Evidence of ECE as an instrument were gathered. The participants also suggested some strategies that could be employed to strengthen ECE in its role as a design thinking instrument**.**

The major challenge that seemed to slow the process of implementation of ECD programmes in some low-income rural communities in Zimbabwe relates to poor understanding of the role of ECD education by some of the parents and guardians. Participants demonstrated this challenge thus, 'The children are still young, what exactly do you think they can learn at three years? We send them to School for the teachers to baby mind them' (Chipo-parent School B).

One guardian of an ECD learner at School C, Mrs Zindoga, said

> 'There is nothing that they learn, its playing throughout the day. So, when one is home, one cannot send the child to school, it's distressing to the child spending the whole day with strangers at school. What do you think the teachers can do that I cannot do as the mother of the child?'

The misconception about the role of ECD education among some communities was further revealed by Ms Tachiona of School A who shared that,

> 'Some of the parents do not support the children because they think that the ECD learners just come to spend time before they start Grade One lessons and that is the reason most of the learners are not even in school uniform.'

Mr Hoto believed that the communities' lack of support to the education of the ECD learners was largely as a result of jealousy, because,

> 'You are not respected as a teacher. When we came as qualified teachers, we replaced some locals who were manning these classes, so they view us as enemies because they say we snatched their jobs, hence little support from some members of the community.'

However, there were some participants who had positive perceptions of the ECD programmes in the school system. Mrs Hove, a teacher at School B testified that,

> 'The current ECD programme helps to standardise the education of all the learners because, unlike before, now we have a common syllabus. Besides, the policy states that all the learners should be manned by qualified teachers, although we have a critical shortfall at this school.'

Echoing Mrs Hove's perception, another parent, Mr Chari from School A said that, as he saw it, ECD education was integrating the society since:

> 'It exposed children early to the broad national socialisation patterns, thus weakening the usual socio-cultural gap that normally characterises the urban-rural distinction. Naturally, it improves equality in terms of knowledge acquisition among the children from different geographical locations'

While most of the parent participants cited what they called negatives about the education of ECD learners, they also highlighted some positive cases about how the programme has helped the education of the children in their communities. Mrs Hota, a parent from School C shared that:

> 'All my six children passed through this primary school. Out of the six, the only two who underwent the ECD programme performed well at Grade Seven, so I strongly believe the programme is important for the future academic development of the learners.'

Mrs Hota's testimony was confirmed by Mrs Sarr, a teacher at School A, who also revealed that:

> 'Progression from one grade to another becomes easy because once the learners grasp a concept at an early age, they live by it for the rest of their lives. Our Grade Seven pass rates have improved since the introduction of ECD classes and you can trace the impact because classes that have been deprived of such lessons due to staff shortage normally underperform at higher grades.'

The other major positive attribute about the ECD programme cited by the participants was that it fostered life-long discipline in the children. Concerning this, Mrs Moyo, a guardian from School B narrated that:

> 'I look after these children whose parents are in the diaspora; their behaviour is different. This one who passed through the ECD system is well disciplined, he wakes up early, tidies the house and is respectful. These other two are arrogant and they had never been to school because they stayed with their parents in Botswana before they came here.'

Ms Moyo, a teacher at School C, explained:

> 'The lessons help to develop social skills that are vital in later life. When these children first enrolled, we had many cases of bullying, fighting and stealing but that has since dropped because of the experiences the children are exposed to as they interact and play.'

Evidence of hard work, academic proficiency and discipline cited by the participants of the current study as products of ECD programmes in schools have been hailed too in South Africa (Biparth *et al.*, 2021). Discipline in learners has been considered by several studies as key to promoting design thinking in that disciplined learners have been reported to do well in education and in life in general (Gargiulo and Kilgo, 2020; Nyarambi and Ntuli, 2020; Selepe *et al.*, 2024), hence the importance of ECD programmes for low-income rural communities of Zimbabwe where progression in education has been unpredictable.

While the participants revealed that ECD programmes were vital for propelling design thinking, little could be achieved in the

low-income rural communities of Zimbabwe where the current study was conducted, due to the challenges cited. The common challenge was the unavailability of qualified teachers as one parent, Mrs Choto be mourned:

> 'There are very few teachers teaching our children, hence most of the time the children are just playing without meaningful learning taking place.'

Even a teacher from one of the schools stated that:

> 'Staff turnover is very high here. Teachers come here just to get into the system and normally it is just for a term before they transfer to other better schools.'

Mrs Sarr added:

> The challenge is that these young learners need continuity in order for them to build strong rapport, so regular changes in staff does not help them because approaches differ.'

Another teacher, Mr Moyo from School A, weighed in and said that:

> 'One teacher ends up manning 80 learners against the recommended maximum of 20 and you know what that does even to the attitude of the teacher. The learners' individual needs cannot be catered for in such a working environment and that defies the logic of preparing the learners to future challenges'.

Other than the high teacher-learner ratio, the other impeding factors include non-availability or sub-standard infrastructure. One teacher, Mrs Hove, explained that,

> 'The infrastructure at our school does not challenge the learners to be creative because it is either not enough or inappropriate. You see, when play materials are supposed to unite the learners as they work collaboratively, due to shortage they end up fighting for the materials.'

Another teacher from School C, Mr Tembo, grudgingly explained that:

> 'You see when the materials are inadequate, as a teacher you then stop the children from using them and it pains because you know what is supposed to be done but without means.'

Ms Tachiona from School A, even said:

> 'Some play centres are derelict and are now potential sources of danger to the learners so we always say safety first, so, although ECD programmes are theoretically in full force in all the schools in Zimbabwe, not all learners are exposed to similar experiences, hence the inequality divide still remains.'

The negative impact on the promotion of design thinking attributed to inadequate infrastructure and equipment, a major highlight of the current study, was noted too in South Africa where Bipath *et al.* (2021) carried a study on the leadership and policy implementation in the context of inclusive ECD centres.

The participants shared what they thought could be done to bring the level of ECD education in low-income rural communities to expected standards. Mr Chari, a parent from School A, suggested that:

> 'As a community, we need not rely on the government for everything. It should be our responsibility to install state of the art play centres such that our children experience relevant education in ways similar to what others are exposed to.'

Another parent echoed similar sentiments and challenged the parents thus:

> 'Each parent or guardian should buy play materials and surrender them to the school for easy management. We may institute committees as parents that monitor how our children learn.'

Even before the parents can be asked to provide materials and other resources for their children's education, a teacher from School B was of the view that;

> 'There is need for ECD advocacy in the communities such that the parents understand the rationale for sending their children to school at the age of three.'

The idea of advocacy got a buy in from a parent, Mrs Moyo, who suggested that:

> 'Each village should have a trained parent who should educate other parents about the importance of ECD education because if it is said by the teachers some view it negatively due to the suspicion that teachers want to milk the parents whenever they request school necessities.'

Another teacher, Mrs Sarr suggested that:

> 'Schools need to arrange some exchange visits involving parents for them to occasionally go to other schools, especially to those whose ECD programmes are thriving so that the parents can learn from good practices.'

Mr Moyo weighed in:

> 'To promote creativity among these young learners, exhibition shows can be held starting from class level, progressing through the school level. up to cluster level, where ECD learners would be asked to show case games, ideas, products they would have created or some innovations.'

The participants of the current study's analysis of the utility of play as an instrument of design thinking share similarities with findings of a related study in South Africa by Selepe *et al.* (2024) who recommend play pedagogy and suggest that educators could use low-cost, locally available materials such as natural resources, recycled materials or everyday objects to create play-based activities which could involve indigenous songs and games relevant to the children's cultural and social context. Their study further recommended that teachers could collaborate with parents and community members to develop and implement play-based activities, leveraging the knowledge and skills of the local community, hence the current study's proposal for community-based innovation shows.

In addition to the findings gathered from interviews and focus group discussions, the researcher also recorded what was observed from the lessons conducted by the ECD teachers as shown in Table 1.

Table 1: ECD activities generating design thinking skills

Design thinking skills	ECD activities generating the skills
Collaboration	Cleaning, group puzzles. Block building. Role playing. Group art projects. Team games.
Cooperation	Playing games. sharing and talking. Doing problem-solving tasks. Group games.
Confidence	Counting, dress up corner. independent play. Praise and encouragement. Self-assessment
Creative thinking	Drawing, painting, modeling, using recycled materials. Music and movement. Art stations. Design and imaginative play

DISCUSSION

The findings of this study reveal that there is positive correlation between activities undertaken in ECD education systems and innovative thinking**.** Studies indicate positive correlations between ECD and design thinking. The structure of most ECD programmes promote critical thinking, which is important for innovation thus, key to design thinking. Nyarambi and Ntuli (2020) in a study in Zimbabwe, establish that 90% of the teachers, who were participants in their study, have the view that ECD prepared learners for successful primary school, while over 80% testify that children who go through ECD have less difficulties adjusting to formal schooling. Literature shows that there are four major design thinking skills, namely collaboration, creativity, cooperation and confidence (Selepe *et al.*, 2024). As argued by the ECD syllabus in Zimbabwe, learners are exposed to a variety of play activities where they are supposed to interact collaboratively. During play, learners may be engaged in group puzzles, block building, role playing, group art projects and team games. The teacher or educator should provide large puzzles, building blocks, set up pretends play scenarios, provide collaborative art materials and other team games to encourage children to work together collaboratively. These encourage learners acquire social interaction skills, team work and communication skills. All these skills are important for the future development of the

learners as they matter even in adulthood. As argued by Lunga *et al.* (2022), if well implemented, the ECD education programmes can be utilised as good instruments for design thinking. ECD programmes are commended by Chebutuk and Mbera (2019) who, after carrying out a study in Kenya, observe that learners who would have undergone early education training outperformed those without early exposure to the system. This revelation confirms that ECD education can be a good instrument for design thinking, if well implemented.

The other design thinking skill that links with the ECD education is the creativity skill. In ECD lessons, learners are exposed to a variety of problems they are expected to solve either individually or in groups. During play, educators set up various art stations to allow learners to explore and express themselves. They can also provide recycled materials for imaginative play, self-expression and challenge learners to create something new. Unfortunately, in the current study, the play centres were reported to be in bad shape or non-existent, thus not affording learners in low-income rural communities the platform to exercise creativity so undermining their future education. The current study also reveals that although the ECD policy was explicit in what was expected of schools to promote creativity, collaboration, cooperation and confidence in learners, that was thwarted by lack of cooperation by some parents who had a poor appreciation of the role of ECD programmes. Community-based advocacy through training of some opinion leaders who would then cascade information about ECD education, could help in a great way. More ECD centres need to be established to reduce distances travelled by some ECD learners so that they start their programmes early in life since it has been established that children who come later are difficult to re-socialise what they could have experienced in the home.

CONCLUSION AND RECOMMENDATIONS

It appears that, to some parents, especially in the rural communities of Zimbabwe, ECD saves nothing more than child care-giving, thus some send their children to ECD centres so that the children can have somewhere to grow up as they wait for their time to enrol for Grade One. The practice shows that when the ECD policy was introduced in 2004, it was not disseminated well to all the stakeholders. The responsible government departments should thus engage in vigorous marketing strategies whenever something new is introduced such that implementation of such programmes are easier. All schools in the country should strictly implement the policy that first primary school graders should have evidence of having undergone ECD. The practice of enforcing all the parents to send their children to ECD centres ensures that quality and equitable education is received by all, thus fulfilling the United Nations Convention on the provision of quality education for all. Furthermore, in the case of Zimbabwe, the practice goes in line with the government mandate of leaving no one and no place behind. The government should also carry out regular policy evaluation to monitor compliance by the implementers. One suggested way of checking policy implementation is to physically visit schools for the purpose of verifying real experiences which learners go through. Such will help in understanding the challenges and opportunities in some specific communities. If policies are to be community-based and are able to serve the best interests of the children, the better. It is also important for the government to consider policy grounded on the views of the implementers.

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