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From crisis to collaboration: the untold geographies of parents' involvement in preschoolers' learning during COVID-19 crisis in Kampala, Uganda

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ABSTRACT

In developing nations, the involvement of parents in preschool education is a pressing concern. This was further heightened the Covid-19 pandemic with prolonged preschool closure. By applying the transformative learning theory, we investigated the dynamics of parent's involvement in home-based learning in an urban context. Our study delved into diverse learning platforms and factors influencing parental involvement using a cross-sectional survey that involved a sample size of 119 respondents, comprising parents only. Household interviews were conducted for quantitative data. The qualitative approach involved in-depth interviews conducted using ten (10) KIs, comprising two (2) division education officials, six (06) head teachers, and two (2) school inspectors in Rubaga Division. The study findings underscored collaborative efforts between parents and educators, interactive digital resources, and parent's transparent communication for transformative learning. This study informs the ongoing reforms in Early Child Education across the world, especially in developing countries.

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Early childhood education; digital integration, COVID-19 crisis; collaborative teaching; transformative learning

1. Introduction

Education has been highlighted as one of the main Sustainable Development Goals (SDGs) that developing countries including Uganda need to achieve as it has been pointed out as an instrumental tool for economic development (Amorós Molina et al. 2023; Kouam and Asongu 2022). The family background is key to children's life and outside of school moreover it is the most important influence on children's learning (Abera 2023). The environment at home is a primary socialisation agent that influences a child's interest in school and aspirations for the future (Eshun, Golo, and Dankwa 2019; Hong et al. 2020). With the spread of Covid-19, countries including Uganda implemented emergency plans to slow down and limit the virus's transmission such as the closure of schools, either nationwide, regionally, or in a targeted way, for face-to-face educational activities (Datzberger et al. 2023; Ogwara 2021). Most of the governments around the world were forced to temporarily close educational institutions in an attempt to contain the spread of Coronavirus, impacting over 91% of the world's student population (Zhu and Liu 2020).

Globally, parents' involvement in preschool children's learning presents scanty reports especially in Africa in line with the dynamics of parents' involvement in preschool learning while at home (Adewumi and Mosito 2019; Tran-Duong, Nguyen, and Nguyen 2023). Within the context of this document, early childhood education pertains to formal education designed for children aged 0–

7 years. The term pre-primary education is employed specifically when denoting the year immediately preceding a child's entry into primary school, typically at the age of 6. Additionally, the term preschool is utilised to describe the facilities or settings where early childhood education is delivered (Mertala 2019). Some scholars have concentrated on the preschool teachers' practices of online learning during the Covid-19 pandemic and have left out the role of parents' involvement, and their perceptions towards learning platforms and perhaps show gaps in Early Child Education Curricula (ECEC), especially in developing countries such as (Chen and Badolato 2023; Hemdan Mohamed and Mohamed Marzouk 2022). Elsewhere, a study by Iskender and Nurullah (2022), explored how parents perceive the effects of the Covid-19 pandemic on both themselves and their preschool children in Turkey and revealed that parents encountered challenges and possessed limited knowledge and expertise in assisting their children with online learning (Iskender and Nurullah 2022). Yet parental involvement in children's education is one of the active measures to support them in the learning process not only during a crisis but also during normal days, taking into account their cognitive, emotional, social, and personality development (Lara and Saracostti 2019; Szumski, Smogorzewska, and Karwowski 2017).

In addition, teachers expect parents to help them create a positive collaborative learning environment that has no hard school-home boundaries. Such a family-school partnership may involve (a) parents discussing school matters with their child, (b) direct help with homework, (c) supervising the child's progress, (d) communicating with school staff, (e) participating in school decisions and (f) getting involved in activities (Tan, Lyu, and Peng 2020). Hoover-Dempsey & Howard M, (1997) explained that when parents get involved in children's learning there is a high acquisition of knowledge, skills, and an increased sense of confidence. Given that a person's education is closely linked to his or her life educational experience, income, and well-being, parental support is highly underscored (Luckyardi et al. 2022; Shan et al. 2023). To this end, parent's involvement in preschool education is a vital tool for development and is the most important weapon to bring changes in society by making people wise and rational (Kelty and Wakabayashi 2020).

2. COVID-19 crisis and preschool education in Uganda

Preschools were closed at a national level during the first wave of the pandemic on 18th March 2020. Uganda as a country had one of the longest school closures especially preschools for 22 months close to 2 years (Datzberger et al. 2022; Namatende-Sakwa, Langsford, and Lewinger 2022). The pandemic demanded that we rethink the trajectories to diffuse E-learning or any other means to replace our traditional classroom-centric educational delivery systems. Therefore, specific educational measures were implemented to mitigate these learning losses and different forms of online education and online education resources were mobilised to ensure teaching and learning continuity. Consequently, requirements for digital technology intensified significantly, despite the challenges that this meant for parents, learners, and teachers to ensure continuity of learning from home.

Amidst the Covid-19 crisis, preschool administrators grappled with sudden closures for learner-teacher physical classes; and parents needed to be at the steering wheel towards their children's continued learning. Before the prolonged school closure due to Covid-19, parental involvement in children's learning was majorly through counseling and guidance time or physical/ psychological contributions and financial support through fees, and requirements. Most of the teaching and learning work was in the hands of the teachers to achieve academic goals. Since this was a new normal, parents and children were facing a difficult time continuing learning due to the dynamics of the home-based learning environment and virtual lessons (Abed and Shackelford 2023). Although the government advocated for home-based virtual learning sessions for preschool children; they were less effective in transforming the child without parents' involvement (Hoover-Dempsey and Howard 1997; Steed et al. 2020).

However, there is no clear documentation regarding the dynamics of parents' involvement in learning for preschool children during the insurgence of Covid-19 that left preschools closed for

physical lessons. Preferred learning platforms, factors that underpinned the selection of particular learning platforms, and barriers to involvement are not documented. And yet, qualities necessary for a healthy nation with a vibrant economy and self-reliant population are laid in infancy stages. This explains the knowledge gap on fostering parent's involvement in preschoolers learning even after the crisis. And yet, programmes for policy reform frameworks that propel quality preschool learning certainly need scientific narratives and evidence from different stakeholders. Although the 2016 National Integrated Early Childhood Development Policy Action Plan of Uganda is geared toward engaging parents and families as stakeholders, it is finding difficulties in realising it without solid empirical evidence (Ministry of Gender Labour and Social Development (MGLSD 2016)). To this end, this study sought to discuss this urgent situation by assessing the role of parents' involvement in preschool children's learning by exploring the practices, factors that influenced parent involvement, and barriers faced in Kampala. This study advocates for transformative learning and teaching methods in preschool education calling upon all stakeholders to integrate internet and computer technologies to improve preschool education not only during times of crisis but fundamentally improving access to education in Africa.

2.1. Theoretical review and contextualisation

The transformative theory of learning by Mezirow (1996) was adopted to guide this study. The Transformative Learning Theory (Mezirow 1996) offers valuable insights into the transformative adaptive teaching and learning methods during times of crisis, commonly referred to as dilemmas. Previous scholarly research has successfully applied this theory in various contexts, including its recent application to the unique challenge of facilitating preschool education at home during the Covid-19 pandemic (Ryan et al. 2022; Shaik 2023). In the present global landscape, characterised by unprecedented crises like the Covid-19 pandemic, there is an urgent necessity to incorporate virtual learning systems into preschool education, particularly within the African context, to ensure the continuity of education in a sustainable and health-conscious manner (Alam 2022). At its core, the transformative learning theory highlights the significance of experiential learning, understanding one's frame of reference, and the pivotal role of a disorienting dilemma in prompting transformative change. Critical reflection, introspection, rational discourse, and meaningful dialogue with others are also underscored as essential components of this theory (Mezirow 1997). By establishing this foundation, learners can adopt novel perspectives, make informed decisions, and experience emotional shifts based on their own experiences.

The theory essentially involves reinterpreting and revising the way individuals understand the meaning of their experiences within the world. The implementation of online and virtual learning environments was primarily observed in higher education institutions rather than in preschools, exacerbating educational inequalities during extended periods of school closures, particularly for preschool-aged children during the pandemic (Datzberger et al. 2023). This partly explains why studies conducted in Uganda depict a lack of application of the transformative learning theory in effectively demystifying the complex interplay between COVID-19 and the learning process among preschoolers (Namatende-Sakwa, Langsford, and Lewinger 2022; Olweny, Ndibwami, and Ahimbisibwe 2022). The role of the parent is to support the preschoolers in the learning process since the learning environment is home and this has a strong relationship with preschoolers' performance. A study by Tan, Lyu, and Peng (2020) underscored the role of parental learning support at home, parental academic emphasis, and parent-teacher communication, especially in elite parents. Therefore, since transformative learning comprises disorienting dilemmas, perspective transformation, critical reflection, and critical self-reflection, parents can help disorient the learning dilemmas caused by a life crisis in this case, Covid-19 that caused individual transformation while trying to adapt to online classes amidst parents' involvement for the preschool children (Calleja 2014).

3. Methodology

3.1. Research procedure

The research study was conducted in Rubaga Division Kampala City of Uganda as shown in [Figure 1](#). Rubaga Division is one of the five divisions that make up Kampala Capital City in addition to Nakawa, Makindye, Kawempe, and the Central Division as seen in map (C) of [Figure 1](#). We used a Cross-sectional Survey Research Design (CSRSD) for this study. This research design effectively enabled the researchers to collect a combination of data sets in a shorter and more tricky time during the Covid-19 pandemic. In addition, the CSRSD enabled the researchers to describe and assess the prevalence of a parent's involvement and behaviour towards preschool children at the moment of a crisis. Furthermore, other scholars have found that the cross-sectional design is particularly pertinent for evaluating the prevalence of knowledge and attitude in a population ([Kesmodel 2018](#); [Xiaofeng and Zhenshun 2020](#)).

3.2. Sampling procedure

A purposive random sampling method was adopted, selecting only parents with preschool-going children in Rubaga Division. The home teachers were identified through snowball sampling. We employed both qualitative and quantitative research approaches. A total of 199 interviews with the preschooler's parents through both physical household and telephone interviews.

For the qualitative approach, in-depth interviews were conducted using Key Informants (KIs) and Focus Group Discussions (FGDs). Ten (10) KIs were conducted with two (2) division education

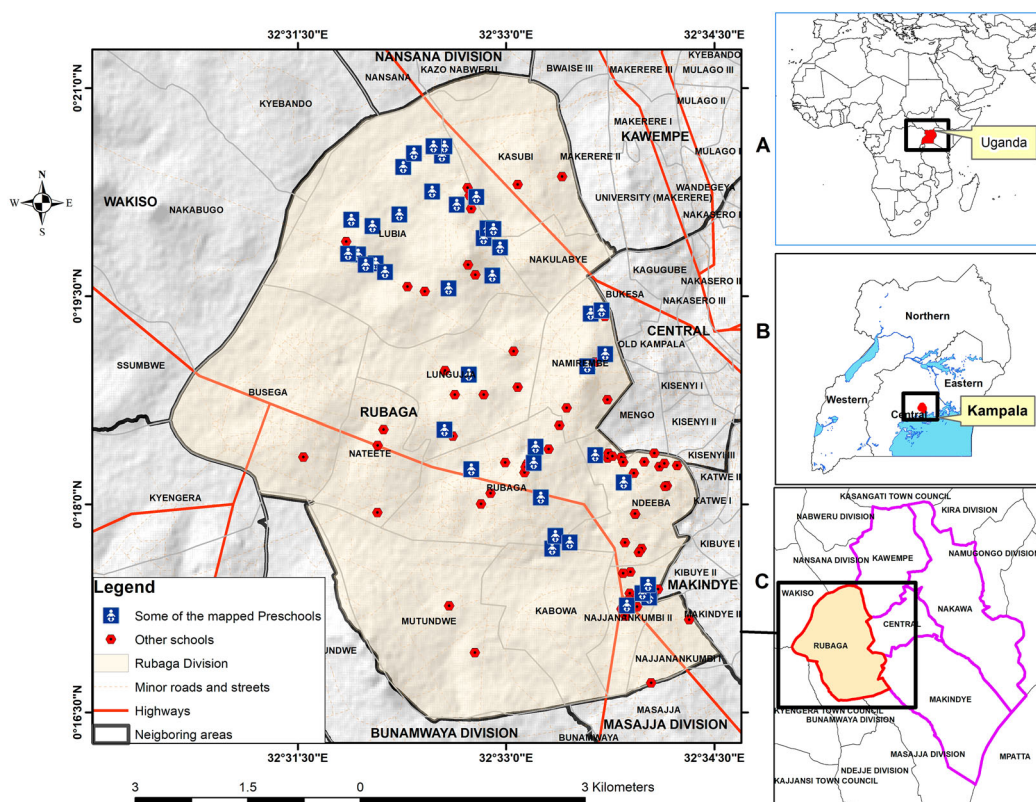


Figure 1. Location of the study area and the spatial distribution of mapped pre-schools.

officials, six (06) head teachers, and Two (2) school inspectors in Rubaga Division. A set of two focus group discussions were also employed including one for only Female participants and the other for only male participants. Each FGD comprised six (6) participants, making a total of 12 focus group participants. Preschoolers' parents, local leaders, teachers, and education activists comprised the focus group discussion. The research questions that guided the focus group discussions were;

RQ 1: What were the learning platforms that were used by the parents of preschool children during school closure amidst Covid-19?

RQ 2: What were the factors that determined the preference for these learning platforms by the parents of the preschool children?

RQ 3: How did the parents of the preschool children participate in their children's learning amidst Covid-19?

RQ 4: Which factors limited parents' involvement in the preschool children's learning during the Covid-19 school closure?

The mixed approach established in-depth narratives that explained the existing complex issues of preschool children amidst Covid-19. Conducting a mixed study curbed the intrinsic weaknesses in either qualitative or quantitative approaches separately and assisted in the comprehension of various facets of the theme under investigation as also underscored by McChesney and Aldridge (2019). To ensure validity, reliability accuracy, and consistency of surveys and questionnaires (Taherdoost 2016). A review of relevant literature in line with the study topic and objectives was carried out while developing the research data collection tools, especially the questionnaire and interview guides.

3.3. Data analysis

Quantitative data analysis followed steps including data cleaning, coding, and entry in a Statistical Package for Social Scientists (SPSS) software version 23. Preliminary analysis to establish data reliability was conducted using Cronbach's Alpha. Datasets that returned Alpha indices of 0.77 above the minimum threshold of 0.6 below which data depict significant gaps. A careful data cleaning exercise to reduce inconsistencies was used to increase the data reliability. To answer the research questions, descriptive analysis was automatically run in SPSS analysis software to generate summary statistics of frequencies, percentages, mean scores, standard error, and standard deviation that were crucial in interpreting the data sets. In addition, a one-sample *t*-test analysis was also used to assess the factors that underpinned the choice of learning platforms by the parents based on the sampled population profile depicted in Annex 1. A one-sample *t*-test model was also automatically performed to assess the factors that underpinned the choice of learning platforms. The one-sample *t*-test can be expressed as;

$$t = \frac{\bar{x} - \mu}{S/\sqrt{n}} \quad (i)$$

where μ , Population mean, \bar{x} , Sample mean, S , Sample standard deviation, n , Sample size, t , the *t*-value represents the difference between the mean of your sample and the population mean (or a specified test value) measured in terms of standard error. In a one-sample *t*-test the t , is a measure of how many standard errors the sample mean is away from the population mean (or the specified test value). *T*-test analysis is increasingly opted to assess responses with ordinal responses including the data collected using a Likert scale by scholars in humanities (Linjawi and Alfadda 2018; Monfort-Pañego and Miñana-Signes 2020; Perkins 2018). For example, Monfort-Pañego and Miñana-Signes (2020), used the one-sample *T*-test to generate mean scores and derive meaningful interpretations of their data on Back-Health-Related Postural Habits in daily activities. Qualitative data collected from focus groups, observations, or written materials were analysed through content and thematic analysis following the research questions under the study objectives (Wahitu and Guzu 2022). Content

and thematic analysis were used to identify, analyse, and report patterns within qualitative data (Bengtsson 2016).

3.4. Ethical consideration

We acquired consent and clearance from Ndejje University’s Directorate of Research and Training. During data collection, the researchers would obtain consent from all respondents before conducting any interviews. The researchers followed the Ministry of Health’s Standard Operating Procedures for preventing the spread of the coronavirus during the study, which included using masks and sanitisers and maintaining a social distance of 1.5–2 metres from respondents. Before heading to the field, each data collector ensured that they had taken a Covid-19 test even after vaccination. The study assistants also carried Covid-19 fliers encouraging the community to adhere to home-based methods of decreasing Covid-19 distribution, such as washing hands and sneezing to the elbow.

4. Results

4.1. The learning devices and platforms for preschool children during the pandemic

Figure 2 depicts the online/distance learning platforms used by preschool students while at home. Because of their accessibility, availability, and affordability, the majority of people used televisions and smartphones to learn.

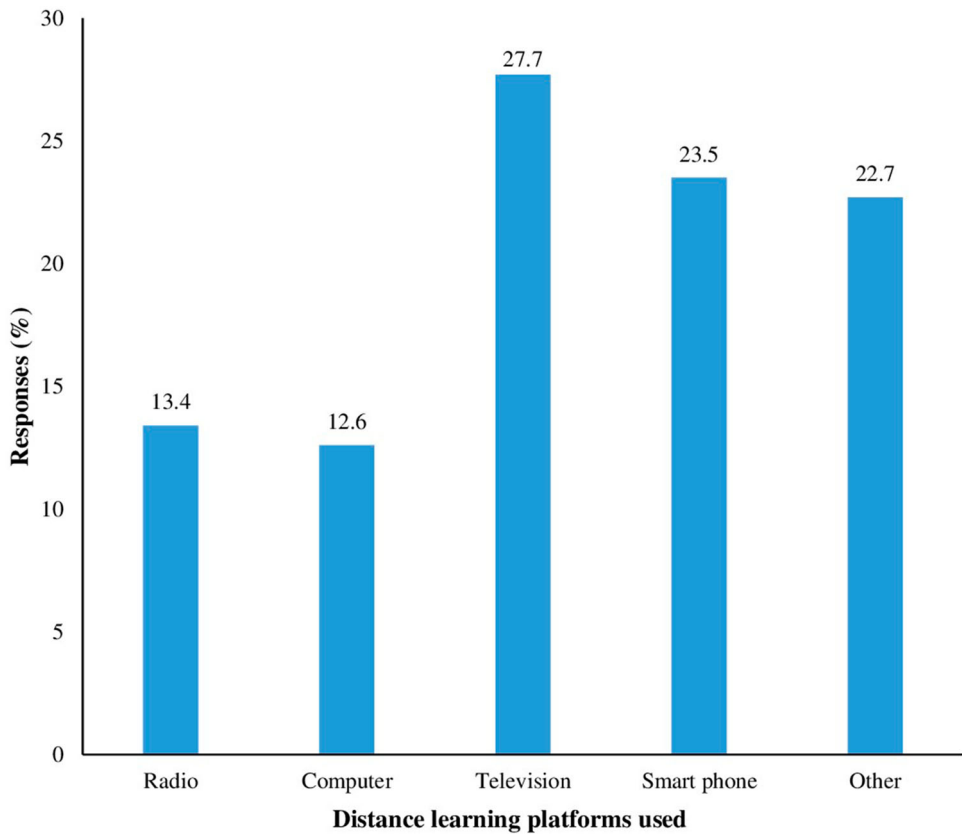


Figure 2. Distance Learning devices used by the pre-school children while at home for distance learning.

This suggested that majority of parents (28%) favoured utilising television to engage their children in learning at home, owing to the fact that most families had easy access to a television. Parents also noted that television education did not require excessive parental supervision. Televisions were the most popular platforms, according to the findings, because some televisions aired preschool-appropriate educational programming.

... I prefer using a TV for my babies, one in Nursery and the other in kindergarten on Disney junior TV and Nicoledian because there are always programs for children on Monday at 8:00 am and Thursday at 11:00 am respectively. They even play kids' songs like, "Up in The Sky," "Jonny Jonny," and "Rain Rain Go Away" so I have always tuned in for my children to follow as I guide them ... [Focus Group Discussion participant, 2020]

Some parents downloaded Jolly Phonics apps, kids' songs, kids' poems, and kid-friendly riddles to their smartphones to help their kids learn. This made it easier for the parents to participate in their kids' education, as demonstrated by the 24% of parents who did so. A proportion of twenty-three parents made the decision to use additional resources, such as writing boards, building blocks (tablets), and block games, to help their kids study at home. Thirteen percent of parents used computers, including laptops, and radios. Some parents used radio programmes to teach children social skills, and some parents had children learning online through links from their preschool websites on PCs or laptops.

4.1.1 Learning platforms used by preschool children

Results of the learning platforms used by the preschool children are presented in Table 1. Forty-three percent (43%) of the parents in the area managed to provide paper-based learning materials to their preschool children during the pandemic while at home. Paper-based learning was perceived to be the easiest by the parents and children accounting for its preference by the majority. This was due to the government programme of distributing reading materials to 2.5 million pupils who could not access technology with support from UNICEF and other agencies (UNICEF Uganda 2020a; 2020b). However, during a key informant interview with one of the education officers, it was revealed that the supplied learning materials were not enough making the percentage of beneficiaries poor.

... in my area, many households missed the reading materials, I did not receive any yet I have preschool-going children, and most of the reading materials were for lower primary, upper primary, and high schools ... , the government seems not to have a holistic approach for preschool children ... [Key Informant Interview, 2020]

Of the parents who used the ICT tools, twenty-nine (29%) got their kids involved in online learning. Twenty-two percent (22%) of the respondents who had preschool-aged children tuned in to television shows that were teaching young children early life lessons. Using the radio, 7% of parents were able to assist their kids.

4.1.2 Factors affecting the preference of learning platforms by preschoolers' parents

Table 2 displays the findings of the factors influencing the learning platforms that parents of preschool-aged children prefer. These findings are based on how important the factors were thought to be, as indicated by a five-point Likert scale with 1 denoting strongly disagree and 5 denoting strongly agree. '4' for agree was the overall test threshold value used to compare the means and assess the practice's significance. Greater positive agreement was indicated by mean scores moving away from 4, and vice versa. The results show that, when it comes to supporting their

Table 1. Online learning platforms used by preschools during Covid-19.

Online learning platforms	Frequency	Percentage (%)
Radio stations	8	7
Television stations	26	22
Online tutorials (Zoom classes, Google meet classes, YouTube etc)	34	29
Paper-based learning (distributed ink learning materials)	51	43

Table 2. Results showing the level of influence of factors that underpinned the choice of the learning platforms.

Factors	Mean (μ)	Std. Deviation	Std. Error Mean	t	df	p-value
Access to technology	4.22	1.151	.106	2.071	118	.041
The learning environment at home	4.31	.918	.084	3.694	118	.000
Level of interaction with teachers	4.51	.901	.083	6.208	118	.000
Access to learning materials	4.13	1.038	.095	1.325	118	.188
Interaction with other learners	4.36	.954	.087	4.131	118	.000

Abbreviations: t: One sample T-test value in SPSS; df: degree of freedom.

children, the majority of parents firmly believed that the most important aspect influencing the choice of learning platform was the contact between students and teachers; one parent stated;

... My child's teacher can handle my child of kindergarten while learning, she has a better approach and uses illustrations while delivering her lesson but me, I expect the child to write fine work in a short time [FGD, 2020]

An Std. Dev of .901 and a maximum μ of 4.51 with $t = 6.208$ demonstrated this, with interaction with other students coming in second with a μ of 4.36 and a Std Dev of .954 with 4.131. A μ of 4.31 and a Std. Dev of .918 with $t = 3.694$ indicated that the learning environment had a significant impact on the learner's attention span and concentration level, which in turn affected the choice of learning platform. With a μ of 4.22 and a standard deviation of 1.151 with a t-value of 2.07, the accessibility of technical materials that could assist and aid studying from home came next; the accessibility of learning materials similarly had a μ of 4.13 and a standard deviation of 1.038 with 1.3. Table 2 illustrates the factors that were found to have a collective influence on the selection of learning platforms. These factors included peer interaction, quality of the learning environment, availability of technological resources, and accessibility to materials. The results highlight the importance of these factors.

4.3. Parent's involvement practices towards children's learning during the pandemic

Table 3 displays the findings regarding the parents' methods of involvement in their preschoolers' education. The Likert scale, with 1 denoting strongly disagree, 2 disagree, 3 neutral, 4 agree, and 5 strongly agree, was used to examine the parent practices data. Children gain a great deal from interacting with their peers, according to the majority of parents ($\mu = 4.01$, Std. Dev = 1.197) who actively supported their kids' social learning. Children, for example, learn language, form social bonds, practice sharing, and form real friendships through group play and energetic activities. Next in line was the tendency of parents to help their kids with everyday chores ($\mu = 3.98$, Std. Dev. 1.193).

Many parents choose to instruct their kids in household activities, lead them through daily routines, and help them understand concepts in their immediate surroundings. This is due to the realisation that these fundamental abilities and understandings are essential to each child's development. A mean of 3.86 and a Std. Dev. of 1.348 indicates that parents also adopted the strategy of providing necessary resources for distance learning. In order to support online learning, this entailed providing kids with laptops, tablets, PCs, and smartphones.

Table 3. Parents' involvement practices in children's learning.

Parents practices	Min	Max	Mean (μ)	Std. Deviation
Provided the necessary gadgets	1	5	3.86	1.348
Linked them to their teachers for coaching	1	5	3.55	1.448
Set rules to keep them learning from home	1	5	3.77	1.278
Helped them in their daily tasks	1	5	3.98	1.193
Promoted children's social learning	1	5	4.01	1.197

4.4. Barriers to parents' involvement in children's learning during the pandemic

Many parents lacked the skills to manage their children's learning at home, leading to challenges of low concentration and lack of attention ($\mu = 4.27$, StdDev = .997). Furthermore, the high cost of learning materials contributed to the difficulties ($\mu = 4.21$, Std. Dev = 1.327). With a prolonged period of unemployment, parents faced financial constraints, exacerbated by increased prices of educational resources during the crisis. Consequently, the entire learning process became expensive for families. Additionally, parents deviated from the National Curriculum ($\mu = 4.11$, Std. Dev = 1.080) due to a lack of awareness about what to teach and when. As a result, some started with unfamiliar topics, leading to children becoming fatigued with learning and impacting parental involvement.

Some parents ($\mu = 3.99$, Std. Dev. = 1.238) were not aware of the content to offer to their children. As a result, some ended up simply acquiring play materials, while others completely ignored the children in favour of their own free will, meaning that parents' involvement in their children's education was significantly reduced. The least burdened parents ($\mu = 3.96$, Std. Dev. = 1.217) were greatly bothered by their children's forgetting regarding the issue offered. Some children, especially those with poor focus, have restricted cognitive capacities. So, whatever their parents taught them, they could easily forget, making it impossible for their parents to continue aiding them. Some parents felt inadequate, believing they lacked the necessary skills and knowledge. During a Focus Group Discussion, a female parent aged 36yrs revealed that;

... My husband and I, are both essential workers, we remained working even during Covid -19 Lockdown. We, therefore, struggle to provide the attention or interaction my children need along with our work ... [FGD participant aged 41 years, 2020]

[illegible]

Although it was a crisis, parents needed to be educated on the best ways to get involved in their children's learning, as well as the skills and knowledge required to handle a child as a teacher rather than a parent. Parents also needed to be aware that kindergarten pupils struggle with short attention spans, so they could create an appealing environment at home by spreading reading and talking materials on the walls to keep the children busy with discovery learning.

5. Discussion

Amidst all the dilemmas, parents tried to participate in preschoolers' learning during the two years of school closure in this urban setting through a myriad of platforms. The Internet virtual learning platforms were challenging because of the high cost of the Internet. However, parents who used e-learning platforms saw that online learning helped ensure that learning took place, and learners could easily access the teachers' tutorials and teaching materials (Maatuk et al. 2022). The virtual learning devices and platforms used were the pivotal media of teaching and learning rested in the utilisation of computer technology and the Internet, as reported by Maatuk et al. (2022). This element assumed a paramount role within the educational context, sparking transformative shifts throughout the educational system, ultimately becoming a favoured avenue for academic pursuits (Samir Abou El-Seoud et al. 2014).

In developed countries such as Belgium, E-learning was characterised by the incorporation of diverse forms of ICT and electronic tools into teaching methodologies where preschool children could easily access quality educational materials as stated also by Gaebel et al. (2014). This sentiment aligns with the findings of Sanz-Labrador, Cuervo-Mir, and Doncel-Pedreira (2021), who discovered that affluent regions in the United States, endowed with superior internet access and well-equipped schools, experienced notably higher surges in online learning resource searches compared to less privileged areas. A similar situation was observed in various developed countries where the shift to online and virtual teaching methods, along with assessments, occurred creating what is called 'pandemic-induced shifts in educational approaches' such as Canada (Mazzucato et al. 2022). Saudi Arabia, for instance, embraced virtual and online education as schools temporarily shuttered. Alharthi (2023) reported that the transformation of Saudi Arabian homes into virtual classrooms to ensure the fulfilment of academic requirements for the 2019–2020 academic year was a great deal.

Concerning factors that underpinned the choice of learning platforms for preschool children, Jæger and Blaabæk (2020) also observed that families with higher socioeconomic statuses consistently accessed more digital children's books before and during the Covid-19 lockdown, in contrast to less affluent counterparts in Denmark. During the pandemic, this gap further widened, and families with elevated socioeconomic standings consistently availed more digital children's books across the three phases of the Covid-19 lockdown. Elsewhere, this perspective was underscored by the works of Isikoglu et al., (2019) reflecting the acknowledgment of the role of digital tools in enhancing learning experiences during the formative years. However, in the Ugandan context, more evidence emerged indicating that learners were less likely to extract optimal benefits from the prevalent educational approach of using digital reading materials (Lizcano et al. 2020).

In the realm of early childhood education, the integration of ICT and digital resources is needed to gain significance and increase parents' involvement in preschool education. Unfortunately, most of the parents who managed to access online reading tools could not operate them well. In addition, a report by OECD Library (2020), revealed that educationists still believe that it is not yet suitable to integrate technology and digital reading materials to enrich and support learning among preschool pupils. Most of the parents did not prefer virtual classes limited student-to-student and student-to-teacher interactions (Darling-Hammond and Hyler 2020). High preference for turning on Television programmes to engage their children in learning while at home was due to the low technical skills needed to operate. However, TV online classes were challenged by load shading and non-interactive learning since the instructors were TV studio-based. Here the learners could not ask questions in case

they needed clarification, making it impossible to assess the online learning by the studio-based teachers.

Concerning parents' involvement practices, a significant number of parents prioritised fostering their children's social learning. In a study titled 'Covid-19 Educational Disruption and Response: Rethinking E-learning in Uganda', Tumwesige (2020) highlighted that parents whose children engaged in ongoing learning not only encouraged them to read but also embraced virtual classes. Particularly, many mothers strived to be consistently available for their children, supplying necessary devices like laptops, tablets, computers, and smartphones to facilitate online learning from home. The research findings suggested a considerable portion of parents made a deliberate choice to provide active assistance to their children in their day-to-day tasks. They also took the initiative to convey practical skills and promote hands-on learning experiences within their immediate surroundings (Abed and Shackelford 2023). This implies that parents recognise the importance of not only theoretical education but also practical life skills, and they could take steps to ensure their children acquire a well-rounded education.

Furthermore, research conducted in Italy reported that the women engaged in additional caregiving and household responsibilities during Covid-19 disproportionately depending on the age of the preschoolers at home (Del Boca et al. 2020). Similarly, amidst the pandemic, working mothers with preschool-aged children were more likely to work from home compared to fathers (Yamamura and Tsutsui 2021). There has been an increase in parental involvement during the Covid-19 crisis between both mothers and fathers (Spinelli and Pellino 2020). Among the middle classes in Saudi, Alharthi and Lebeau (2021) also observed that mothers increasingly took on the role of making educational decisions for their children, particularly influencing the learning journey of preschoolers within the home environment.

It was more challenging for parents who worked or looked after more than one child and sometimes with special needs as also reported by Liu et al. (2021). This made some parents choose to connect their children with teachers for guidance since they lacked the know-how to support their children's learning, due to the dearth of content, knowledge, and pedagogical skills. In Uganda, parents opting to connect their preschool children with teachers for coaching typically arranged these sessions through family friends. They jointly determined meeting days and agreed to compensate the teacher with a specified sum, often around \$4 to facilitate learning, either within the child's home environment or the teacher's residence (Fleming 2020). Parents develop a stronger connection with their children's educational journey through various ways depending on affordability, skills, and technical know-how (Garbe, Rau, and Toppe 2020). Those parents who expressed uncertainty in providing remote learning support for their children were more likely to have attained secondary education or a lower level of education. Conversely, parents who cited being too occupied to assist their children with remote learning during the pandemic tended to possess post-secondary education (Tan, Lyu, and Peng 2020).

A similar trend was underscored by Liu et al. (2021) who emphasised that parents assumed fresh responsibilities in distance learning, becoming more actively engaged in their children's educational experiences. The literature indicates that the growth of distance learning was evident before the pandemic's onset (Garbe, Rau, and Toppe 2020). Consequently, parental involvement plays a pivotal role in shaping children's learning journeys, as explored within the framework of Hoover-Dempsey and Sandler's model.

For barriers, the study revealed substantial expenses tied to internet data, auxiliary power supplies, and internet-enabled devices emerged as obstacles hindering remote learning. The unaffordability of learning gadgets by parents during the pandemic hampered the use of online learning platforms (Alawamleh, Al-twait, and Al-saht 2022). The difficulty for parents to fulfil their new role of helping these learners while studying from home could have emanated from failure to provide the tools. Parents exposed gaps in their skills and confidence. Alharthi (2023) highlighted that some parents grappled with insufficient knowledge, while others aimed to foster their children's independence, only to find attention spans and unconventional circumstances posing hurdles.

In disadvantaged households, the absence of technology, internet access, and educational resources presented insurmountable obstacles (Di Pietro et al. 2020). Forgetfulness of content and low attention spans compounded the difficulties, leaving parents feeling overwhelmed and even doubting their abilities. As Covid-19 reshaped parental roles, the struggle for balance became palpable. The pandemic upended job dynamics, with women disproportionately affected, intensifying childcare responsibilities. To bolster parental involvement in home learning, it's vital to initiate awareness campaigns, empowering parents to engage effectively and bridge gaps in understanding. This journey towards improved involvement holds the promise of nurturing children's learning even amidst unprecedented challenges putting into consideration that virtual classes can not only serve as an alternative but also a method of conducting some classes.

In summary, although the ECD policy of Uganda targets to 'ensure equitable access to quality and relevant ECD services for the holistic development of all Children from conception to 8 years', what happens is the traditional learning domains of reading, writing, and socialisation. Teaching pre-schools need ICT integration information of online classes, and reading materials, among other digital modern approaches. Yet, these pupils are curious and have higher learning abilities and talent development while at that age (Gjelaj et al. 2020). A review study by Undheim (2022) revealed that in kindergarten, pupils of baby, middle, and top (0–6 years) classes were engaged in soft skills acquisition, especially computer skills even before Covid-19 outbreak. Batrakova, Ushanov, and Ioseliani (2021) further argue that these skills are eventually developed into strong programming abilities, model developers, AI developers, and content creators, which are the trending skills in today's world. So as the policy advocates for holistic development for all children, there is some sort of outdated curricula in most of the kindergarten schools in Uganda. As recommended by Mertala (2017), preschools in developing countries and elsewhere need to fully integrate technology into their education approaches since it proved to be a strategy and practice to foster teaching and learning.

6. Conclusion

Parents significantly shape children's character as they approach adulthood. Covid-19 offered unprecedented parental engagement and appreciation for teachers. Amid the pandemic, digital platforms such as Television programmes, computers, tablets, and smartphones became key for accessing learning programmes and materials. Amidst unfulfilled promises from the government in Uganda, some parents fostered preschoolers' learning through social engagement, gadget provision, rule-setting, and teacher connections. Barriers included poor learning settings, curriculum deviations, and material availability. With schools shut, some parents took dual parental and teaching roles, balancing remote work and children's education. Many felt overwhelmed, seeking equilibrium amidst children's disruptions. There is a need for transformative Learning approaches by fully integrating ICT and other learning approaches to improve access to preschool education amidst the crisis.

Recommendations

Addressing crises like the one posed by Covid-19 requires a multi-faceted approach involving policy-makers, school administrators, and parents. Policy-makers should focus on flexible education frameworks and digital infrastructure, while school administrators must create continuity plans and prioritise learner involvement. Parents play a pivotal role by fostering a conducive learning environment at home and maintaining open communication. By working together, we can ensure that education remains resilient, inclusive, and responsive to the evolving needs of children in times of uncertainty. Additionally, it's crucial to conduct more research on suitable learning platforms for Early Childhood Development Education (ECDE) in times of crisis.

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Data availability

Data will be provided on request from the corresponding author

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Annex 1. Socio-demographic characteristics of the respondents (n = 132)

Socio-demographic x-tics		No.	No. of respondents (%)
Age	20–30 years	52	43.7
	31–40 years	37	31.1
	41–50 years	23	19.3
	51 and above	7	5.9
Sex	Male	45	37.8
	Female	74	62.2
Marital status	Married	85	71.4
	Separated/Divorced	7	5.9
	Widowed	2	1.7
	Never married	25	21
Education level	Never attended school	10	8.4
	Primary	6	5
	Secondary	34	28.6
	Tertiary / University	69	58
Presence of pre-school child	Yes	97	81.5
	No	21	17.6
Level of preschool child at home	Nursery School (baby)	51	42.9
	Kindergarten (Middle)	26	21.8
	Pre-Primary (top)	42	35.3