Exploring the Use of Technology to Enhance Parental Involvement in Children's Education: A Qualitative Study in Selected Rural Schools in Limpopo Province

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The European Conference on Education 2023
Official Conference Proceedings

Abstract

Parental involvement is a crucial factor in enhancing children's academic achievement and success. However, in rural areas parental involvement in children's education is often limited due to challenges, such as the lack of resources, and inadequate communication channels between parents and schools. The study responded to the question of: How do teachers and educators perceive the role of technology in enhancing parental involvement in children's education? This qualitative study aims to identify and evaluate technology-based tools and applications that can facilitate parental involvement in their children's education in selected rural schools in Limpopo Province. The study used multiple case study design, and data was collected using a semi-structured interview guide with parents, teachers, and school principals who were purposively selected from the four schools. The data was analyzed using thematic analysis that yielded two key themes of resources and communication that related to the use of technology in enhancing parental involvement. The study recommended for the collaboration of schools' stakeholders and policy makers to ensure equitable access to technology in all schools, provide training and support for parents and teachers, and foster partnerships with community organizations. By harnessing the power of technology, rural schools can strengthen the teacher parent relationship, promote educational equity, and contribute to improved performance for their children.

Keywords: Parental Involvement, Technology, Children's Education, Rural Schools, Communication

Introduction

The constitution and the South African School Act of 1996, state that parents can make a substantial contribution to their children's education (Republic of South Africa, 1996). Therefore, the use of technology to enhance parental involvement in children's education is a promising approach, particularly in rural areas where traditional modes of communication and participation may be limited. The South African Schools Act (1996) including other policy documents recommends that the learners in South African schools should have access to the same quality of learning and teaching, similar amenities, and equal educational chances (Maphalala & Khumalo, 2023). Furthermore, government has pledged to intervene by providing technology among other strategies to allow the satisfactory delivery of services and resources to improve rural education (Maphalala & Khumalo, 2023). Technology in rural schools refers to the integration of digital tools and resources in educational settings that are in rural areas (Maja, 2023). This includes the use of computers, tablets, software applications, online platforms, and other digital technologies to enhance teaching and learning processes. Maja (2023) further suggest that the use of technology can improve teachers' method of teaching and the way children learn. While recent research established that low technology channels can easily be used by learners in the provision of education content in a meaningful way (Dlamini, Daltry, Jordan, Hills, & Evans, 2022).

However, the use of technology is not without challenges. According to Aruleba and Jere (2022) the socio-economic background of communities around rural based schools in South Africa is predominantly characterized by poverty, unemployment, and low educational attainment. Other studies highlight that many parents have not completed their own education, which could impact their ability to provide academic support using technology to their children (Letswalo, 2023; Aruleba & Jere, 2022, Mthethwa & Kutame, 2023) particularly in rural schools. The authors found that the lack of access to technology and limited digital literacy skills among parents are significant barriers, including inadequate infrastructure and limited funding for technology initiatives in rural schools (Mthethwa & Kutame, 2023). However, Themane and Thobejane (2018) established that teachers' resilience when resources are inadequate could overcome some of the barriers that are experienced in schools. This means that technology could possibly be used to facilitate communication between parents and teachers where teachers could use emails or messaging apps such as WhatsApp, Twitter, and others to communicate with parents about their children's progress, answer questions, and provide feedback (Dlamini et al., 2022). Technology use could enable parents to have a more direct and ongoing dialogue with teachers, which could lead to more productive partnerships and better outcomes for students (Maja, 2023).

The study responded to the question of: How do teachers and educators in selected rural schools in Limpopo Province perceive the role of technology in enhancing parental involvement in children's education? Based on the above, this study is important as it might contributes to the design and implementation of innovative programmes that could leverage technology to overcome barriers to communication and parental support. Again, harnessing technology in schools could create more inclusive and collaborative learning that benefits both students and parents in rural schools in the Limpopo Province, South Africa. The following sections will discuss technology in enhancing children's education, theoretical framework, methodology, findings, discussions, and the concluding remarks.

Technology in Enhancing Children's Education

The use of technology to enhance parental involvement in children's education in rural schools has substantial possibility. This is supported by a study that was conducted in Zimbabwe, which exposed the need to ensure that rural institutions have access to technologies that ensure productivity and develop collaborative encounter with students (Maphosa & Dube, 2020). Moreover, Maja (2023) stipulates that technology can enhance parental involvement in children's education, particularly in rural schools. Maja (2023) argued that technology provides parents with a better understanding of their child's academic progress and increases their engagement with the school community. Furthermore, technology can enable parents to communicate more effectively with teachers, receive timely updates on school events, and access learning resources that can support their children's learning (Dlamini et al., 2022). In addition, technology can facilitate communication between parents and teachers, enabling them to collaborate more effectively and share information about their children's academic and social progress (Dlamini et al, 2022). Technology was used in the advent of Covid-19 pandemic where schools opted for online and blended learning by using various smart and mobile technologies to continue with teaching and learning. In that way parents were able to monitor their children's academic performance (Ogbonnaya, Awoniyi, & Matabane, 2020).

Although several studies have shown the possible benefits of using technology in schools, there are challenges that are worth noting. According to Maja (2023), one of the major challenges facing the use of technology in rural schools is the lack of resources. This includes inadequate infrastructure, insufficient funding, and limited access to technological devices such as computers and the internet (Ogunshola, 2015). These challenges could result in a lack of parental involvement in their children's education, which could negatively impact student achievement. Researchers have suggested the need for increased government funding and support for rural schools (Maja, 2023; Maphalala & Khumalo, 2023). Moreover, Letswalo (2023) recommend the provision of ongoing professional development opportunities for teachers to improve their technological skills and increase their confidence in using technology in the classroom. Improving communication between teachers and parents through regular meetings and the use of technology can help to overcome some of the barriers to parental involvement in children's education (Maphosa & Dube, 2020) as well as improving the perceived usefulness.

Technology Acceptance Model (TAM)

The study adopted the use of Technology Acceptance Model (TAM) that was introduced by Davis in 1989. The TAM by Davis (1989) suggests that individuals' attitudes and perceptions towards technology play a crucial role in determining their willingness to use it. TAM is a model that predicts and explains the acceptance of technology by users, in this case by parents and teachers alike. TAM is based on two key factors: perceived usefulness (PU) and perceived ease of use (PEOU) (Davis, 1989). Perceived usefulness refers to the intensity to which an individual believes that technology will enhance their performance or productivity. While perceived ease of use refers to the point to which an individual believes that using technology will be easy and effortless (Davis, 1989). TAM can enhance parental involvement in their children's education by increasing their perception of its usefulness and ease of use. For example, the use of educational technology such as online learning platforms, parent-teacher communication applications, and virtual parent-teacher conferences can help parents and teachers to stay connected while improving the children's education (Dlamini et al,

2022). These technologies can also make it easier for parents to communicate with teachers, access academic resources, and monitor their children's progress (Dlamini et al, 2022).

According to Lwoga and Chigona (2019), barriers that can prevent the successful implementation of TAM in enhancing parental involvement in their children's education in rural schools include the lack of access to technology. Many parents in the rural areas do not have access to computers or the internet, which makes it difficult for them to use technology to get involved in their children's education (Ogbonnaya, Awoniyi & Matabane, 2020). Another barrier is the lack of technology skills and knowledge among parents, which can hinder their ability to effectively use technology to support their children's learning (Letswalo, 2023). The latter author identified issues of limited comprehension by teachers towards parental involvement, while parents lack the confidence, time, and adequate skills to use technology to support their children's education (Letswalo, 2023). Letswalo further indicates that attitudes can also be a barrier to the adoption of technology for parental involvement in rural areas, as some parents may believe that it is the sole responsibility of teachers to educate their children, and therefore may not see the need to get involved in their children's education using technology. To overcome these barriers, Maphalala and Khumalo (2023) recommended that education policymakers and school administrators should provide training and support to parents to improve their technology skills and knowledge. Nevertheless, TAM can be strengthened by Epstein's (1995) model of school-parent-community partnerships with its six types of involvement: parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community (Epstein, 1995). Although in rural areas, parental involvement could be affected by geographical and socio-economic factors.

Methodology

This study was conducted in a rural area of Limpopo, South Africa with rural schools that are located within and around the surrounding community's poverty (Maja, 2023). Some of the classes in these rural schools are congested while others meet the South African primary school-teacher ratio (Department of Basic Education, 2016). This study used an interpretative paradigm and qualitative research approach. The use of qualitative nature was to explore the experiences, meanings, beliefs, views, and perspectives that participants assign to a social phenomenon (Nieuwenhuis, 2020). Purposive sampling was used to select four rural schools to participate in a multiple case study design that was found to be helpful because persons and locations are selected for holding information and features in which the researcher is interested (Creswell, 2014). McMillian and Schumacher (2014) regard the primary purpose of the research design as to specify the plan to draw conclusions from empirical evidence. The participants comprised of four principals, nine teachers and six parents who were sample as key informants of the study from the four primary schools, making a total of nineteen.

All the participants were interviewed individually using a semi-structured interview guide (Greeff, 2017) at their respective schools. According to Greeff (2017), semi-structured interviews are defined as interviews organised around an area of a particular interest, while still allowing considerable flexibility in scope and depth. The inclusion criteria were to select teachers who have had more than ten years' teaching experience in those schools and parents who were currently serving in the school governing bodies (SGB) in all the four rural schools. The believe was that the teachers were familiar with issues concerning the parents of children and therefore, could better respond to the questions as key informants who are knowledgeable about the school and its environment. The author has access to the designated

primary schools as part of the community engagement project; therefore, data were collected through in-depth face-to-face interviews during the baseline and intervention support phases. English Language was used to gather data from the individual interviews that lasted for about forty to sixty minutes with each participant. Thematic analysis following Braun and Clarke (2006) style to analyse qualitative data was embarked, whereby data was transcribed, coded, and categorized to identify themes to answer the research questions. Some of the field questions that were asked are:

1. Which technologies does the school allows for children to use during learning? (Follow-up: Which social media page does the school use?).
2. How do teachers communicate about the learners' needs to their parents? (Follow-up: how is the communication facilitated? Do you use technology to communicate? How do parents inquire about the progress of their child?).

To protect the participants, pseudonyms were used to anonymise all the participants, also by adhering to the ethics per the ethical clearance that was granted by the University of South Africa (Ethics certificate no: 2016/09/14/90171969). The participants were informed about the purpose of the study and that they were free to withdraw from participating at any time without consequences. In return the participants granted and signed the informed consent forms.

Findings

The data yielded the themes of 1) Resources and 2) Communication. The responses from all the participants were presented using the selected direct quotations to support the identified themes.

Resources

Teachers were asked about technological resources that are used in the school by both teachers and children for teaching and learning such as smartphones or any mobile devices. The responses received indicated that children were not allowed, and that it was against the school policy. Shiella from School C said:

> I know technology is very important at school, but we say no because it's not easy to manage these kids with technology; just look at one child at home, when you try to send them somewhere when they are having the phone in their hand, they can't even hear you. So, it's the same with these kids when they bring the phones into the school. They google these irrelevant things other than education. And then during breaks, you will always solve issues… So, it's not, it's not something that we can promote. (Shiella, teacher, School C)

The same was confirmed by Vuma, a parent on the same school who said, "*No, the school policy does not allow phones.*" He further indicated that "*Some children do not use these phones for education purposes. They watch TikTok and videos. While some may use them honestly.*"

On the same issue Thando corresponded:

> Unless if we have our tablets, where we put them at school, for children to use, then after that we collect them to a safe place, but with them [children] bringing their

phones, you don't know what's inside the phone. We try to avoid reports that so and so is saving a phone with video… what can you say? to who? Even on weekends, because there's no one at home, there's not even an elder person. So that's why it's a total No, at school. (Thando, teacher, School D)

Resources could be challenging for the socio-economically disadvantaged children as Lilly pointed out that:

And this [use of technology] will make one learner to feel excluded, not having the phone and going back home it means they will have problems as they [parents] will again come here to say principal you want these kids to have phones, where do you think we can get money to buy phones? Because the school is not providing data for learners, so, that can be a problem for us. (Lilly, teacher, School A)

Teachers reported that children do not use technological resources such as mobile devices for learning at school because it is against the school policy. A follow-up question was asked as to why the children were not made to become part of the bigger community that is using technologies, because during the covid-19 pandemic, life continued because of resources such as technology. The principal of school A responded by saying "*And it's true, you know, you just open my eyes, you know, I'm studying ICT with Wits. Now, they're also encouraging us this thing.*" On the same issue, School B principal said:

I think we need to talk about it in our principals' meeting, [and] in the parents meeting, just to encourage parents, sometimes we are the ones who are encouraging them [parents] not to buy these smartphones for the kids, they don't buy them because they're taking all their minds, they're not learning. (School B Principal)

The use of technology resources is perceived negatively by teachers in the selected rural schools. This means that even the parents are discouraged to buy the smartphones for their children simply because teachers believe that if children can be provided with technology, they can be distracted not to do their work. Teacher Thando from School D indicated that if they had tablets, they would allow children to use them. On the same issue, Thelma from School C said:

Yeah, I think we need to address this. And we need to allow these kids because we can even control them. Let's say the Grade 7 can bring their phones in the morning and put them on my table. When it's time for Natural Science then the teacher can come and take the phones and tell them that to go to WWW dot one two three … check this after that you take the phone with you. After school they can just collect them. (Thelma, teacher, School C)

The benefit of using technology was supported by a parent when saying:

Technology is important for our children. Usually when they come back from school, they request us to buy data for them. So, if they do not have such it becomes difficult for him or her to search for information and do their homework. But it can help our children too much. (Themba, parent, School A)

Tim from School B said, "*We don't use technology in this school, more so, the policy does not allow that.*" On another note, Simon from School D stated:

> We do have tablets for the school, well sometimes us teachers are using those tools for teaching and learning. And sometimes we give [tablets] to those Grade 7s in subjects like NS [Natural Science] but sometimes when you are out of class, they [children] will be googling something else. (Simon, teacher, School D)

Some parents supported the use of technology, although they reported the awareness of what the policy entail. Steven said:

> The policy does not allow children to bring their phones to school but there are days where teachers make special arrangements with learners for them to bring along their gadgets so that they could perform a particular task. (Steven, parent, School D)

It can be noted that some schools have tablets that are used on arrangement by some teachers with children in some of these schools. While some teachers and parents thought that if technology could be allowed, children could search for relevant information to enhance their learning. It is interesting to note that the schools' policies do not allow children to use technology resources, which is a challenge for these schools. This had serious implications for education as well as the impact on the future lives of the children particularly in this digital age. The lack of resources therefore, affected communication.

Communication

When responding to the question of whether the school has a social media page where they communicate with parents about their children's needs or to make any announcements, Selby, a teacher from School B responded by saying, "*No, we call a meeting. If the child has psychological needs, we call sisterly departments such as the social workers to come and address the issue.*" Another teacher, Tim in the same school indicated that "*We call them [parents] when we have functions like the end-of-year events to thank them.*" Tim further indicated that "*I have so many videos for awards giving. I have all the evidence of what we are doing that I can share with the community.*" The same sentiments were shared by Vuyo, a parent from school B who said, "*The secretary does phone us whenever there is a meeting.*" A follow up question was asked as to how the schools facilitate communication between teachers and parents.

Teacher Lilly from school A said "*It is difficult because most of them[parents] do not have phones. We write letters to the parents via children. We tried to use WhatsApp group but only 10 learners have it.*" In another response teacher Taylor from the same school A elaborated that "*Yeah, those with WhatsApp are in Gauteng, so grannies are the ones taking care of the kids. We do have the WhatsApp group for the school but only for less than 15 people.*" Similarly, Peter from School B indicated that many parents were illiterate especially the grandmothers who were looking after the children. Further, he stated that some parents were not on WhatsApp because they usually indicate problems with their phones. In his words, "*Their phones are not working… It's like the parents keep changing the SIM cards… while some are unable to read especially the illiterate grannies at home, they are not able to read from WhatsApp.*" This was mentioned by another parent, Zihle from School A when saying, "*I stay alone with a child, and I am not able to read and write, therefore, I cannot help my child with homework.*"

Most children were reported to be raised by their grandparents. Some of these grannies were described to be illiterate and therefore could not read if messages were communicated

through WhatsApp. This implies that technology is a big challenge to the grandparents, which could also affect their involvement in assisting children with schoolwork. On the question of how teachers get the parents to visit the school and to make follow ups on progress of their children's work, the responses varied. A principal in School C reiterated that:

> They [teachers] give them time depending on the timetables, whether the teacher is free or not. And if the teacher is still in class the parents have to wait for the teacher. So that's why we encourage parents to talk to the teacher first before visiting. They [parents] must make an appointment before they come to check on the progress of the learner. (School C Principal)

Parents reported that they make follow ups with teachers on account that they are challenged by the content:

> My challenge is I don't get examples or guidance on how to help him, especially that what I learned during my school days differs from what is learned today. To address that I make a follow-up by going to ask the teacher if what my child has written is correct. (Mabel, parent, School B)

On the same issue:

> I do help him where I can, but there are questions which I am not able to assist with because today's curriculum differs from what we learnt. I call those siblings who can help him with his homework. Then later I do the follow up with the teacher. (Thomas, parent, School A)

Parents stated that they randomly walk to the school to make follow ups on their children's progress with the teachers, even though they must wait for the free time. Another response from School D showed that parents are given the reports when the term comes to an end:

> We give them reports each term. Again, when we want to communicate with these parents, there's a responsible person who will give us all the details and we use those contact numbers to give them feedback. And sometimes by calling them from the office like if the learner is not performing well for the continual assessment, then we'll call them individually to the school. (School D Principal)

Parents confirmed what the principal reported. For instance, Brian from school A said, "*I do come to check my child's performance and the teacher show me.*"

> Where we experience challenges, we come to school to report. And teachers do call us when they experience challenges with our children. But the burning issue is the ability to read and write. (Thembinkosi, parent, School C)

> We go to the principal who directs us to the teachers. In most cases teachers know about our children's problems that we bring. For instance, I have a child who is in Grade 5 and is not able to read and write. I talked to the teacher, and we agreed that my child will attend extra classes in another school and that helped him a lot. (Purple, parent, School D)

The principals in these rural schools reported that parents would sometimes walk to schools to make follow ups about their children's progress, which was confirmed by several parents. The active role played by parents signify their interest in their children's education, which technology could be harnessed to foster a sense of community among parents and teachers, allowing them to collaborate, share insights, and learn from each other's experiences. This could be easy as the reports by principals showed that they have records of parents' contact numbers. However, if teachers cannot be persistent about the use of technology in schools, it could be difficult for them to encourage parents of children to use it, for whatever reasons including communication.

Discussion

The study was conducted to explore the use of technology to enhance parental involvement in children's education in the selected rural schools in Limpopo Province, South Africa. It was found that resources are a challenge in these rural schools, which confirms recent research (Letswalo, 2023; Mthethwa & Kutame, 2023). This finding is like what Aruleba and Jere (2022) established about the limited access to resources, which is challenging for rural areas and schools in South Africa. Similarly, this finding is concurring with Themane and Thobejane (2019) and Maja (2023) who stated that the use of technology to involve parents can be a challenge in rural schools. The findings revealed that these schools' policies do not allow children to use technology (smartphones and other mobile devices) at the school premises. This was a unique finding particularly in this digital age where technology is advancing in almost all spheres of life, including its use in education, especially after the recent scourge of covid-19 pandemic (Ogbonnaya, Awoniyi, & Matabane, 2020). Interestingly, the plans by government to provide technology as a strategy to enhance the schools' performance, in addressing challenges faced in rural education is not realized by some schools in the rural areas of Limpopo Province (Maphalala & Khumalo, 2023).

The use of technology to assist children by parents seemed to be a far-fetched issue as teachers in this study revealed that they were discouraging parents from buying the mobile devices for their children. This suggested that teachers do not support the use of technology by children, which could imply that parents may not be keen to use technology in assisting children with schoolwork at home. The challenges highlighted point to the need for targeted interventions and support (Maphalala & Khumalo, 2023) for all: teachers and parents in the rural areas to bridge the digital divide and enable technology-based parental involvement in children's education. This is because some teachers do not use technology to teach and might perceive it as an obstacle that disturbs children from learning rather than it being an assistive resource as indicated in TAM (Davis, 1989). There may be several reasons to this limited use of technology by teachers, including their attitudes and little understanding (Letswalo, 2023). Besides their compliance with their school policies that do not allow the use of technology by children in the school environment, teachers may lack the digital skills and professional development in the use of technology. The lack of technology skills by teachers confirms what Aruleba and Jere (2022), Mthethwa and Kutame (2023) and Letswalo (2023) revealed which stipulated that without proper training, teachers may not be able to effectively integrate technology into their lesson plans, resulting into limited impact on children's learning outcomes. This implies that teachers could not challenge the school policy due to how they might perceive technology, which tallies with TAM with its aspect of how people may perceive the usefulness of technology including its easy to use (Davis, 1989). However, studies have indicated that teachers can survive the challenges even when resources are

scarce (Themane & Thobejane, 2019), which is different from what was found in the rural schools of Limpopo Province.

Furthermore, the findings illustrated that communication by these rural schools is relying on traditional ways of writing letters to parents through their children when they call parents meetings. This finding refutes recent research that encouraged the use of technology for effective communication by teachers and parents (Dlamini et al., 2022). It was revealed that many children stay with their grandparents, who were described as illiterate and therefore, making it difficult to communicate with them using the communication applications such as WhatsApp. Additionally, teachers reported that most of the grandparents either do not have cellphones or keep changing their contact numbers. This finding confirms issues raised by Aruleba and Jere (2022), Mthethwa and Kutame (2023) and Letswalo (2023) regarding the poor socio- economic background of some rural schools and their surrounding communities. The findings reflected that parents walk to schools to make follow-ups on their children's progress with teachers due to the inadequate use of technology, which could save them time and distance. This finding refutes what Maphosa and Dube (2020) indicate, that technology can foster frequent meetings and smooth communication by teachers and parents to ensure for the children's improved performance in schools.

Conclusion

In conclusion, recent research has sheds light on the significant role that technology can play in enhancing parental involvement in children's education, particularly in rural schools. However, the selected rural schools in Limpopo Province have acknowledged the challenges that may arise with the integration of technology, in terms of resources and communication. Limited access to reliable internet connectivity, technological illiteracy among parents and teachers, and the unavailability of gadgets to use are some widespread obstacles.

Therefore, the recommendation is that policymakers, educators, and school stakeholders could collaborate and address these challenges by ensuring equitable access to technology, providing training and support for parents and teachers, and fostering partnerships with community organizations. This study emphasizes the immense potential of technology in enhancing parental involvement in children's education, particularly in rural schools. By harnessing the power of technology, rural schools can strengthen the teacher- parent-school relationship, promote educational equity, and contribute to improved performance for children.

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