

Parents' Perspectives on the Use of Artificial Intelligence in Early Childhood Education Settings, Sri Lanka

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Abstract

The rapid development of Artificial Intelligence has had a significant impact on many industries, including education. AI-based applications are also being implemented in the ECE field to improve individual learning, interaction, and competence. Nevertheless, effective adoption of such technologies will be greatly determined by acceptance by the stakeholders especially parents. This paper examined parents' views on the introduction of AI in ECE classrooms in Sri Lanka, their awareness, perceived value, and the issues and determinants of acceptance. The qualitative research design was utilized in the form of semi-structured interviews that were held with 20 parents of pre-schoolers. The information analysis has been conducted with the help of thematic analysis in order to reveal some regular patterns and major themes. The results showed that the majority of parents lacked advanced knowledge about AI, but overall knew about digital learning tools used at classroom. Parents mostly said that AI had been useful in supporting personalized learning, developing language and numeracy skills, and that it enhanced children engagement and motivation. People thought that AI might be used as a complement to the conventional teaching process and it would adjust to the learning needs of the individual. Although these perceptions were positive, a number of issues came out. Parents were also concerned about the problem of excessive screen time, possible loss of a teacher-child bond, and the problem of data privacy and system protection. Nevertheless, these fears did not manifest themselves in direct opposition. Rather, parents stressed the need to have teacher supervision, balanced screen time, ethical data collection, and open school-parent communication. In general, the research determined a significant rate of conditional non-rejection of AI integration in early childhood education, but under the condition of supporting the role of teachers, and as long as it is used to achieve a holistic development purpose. The results add to the scarcity of research on AI in early childhood education in the developing country context and present the relevance of culturally sensitive and ethically informed implementation practices. The research will also have effective implications to policy makers, educators, and school administrators who want to implement AI-based tools in early learning settings in a responsible manner.

Keywords: *Artificial Intelligence, Early Childhood Education (ECE), Parents' Perspectives, Pre School Education, Sri Lanka*

Introduction

Early Childhood Education (ECE) is well known as a crucial platform on which children develop cognitively, socially, emotionally, and linguistically. The events of early childhood have a strong impact on future academic success, social competency, and lifelong learning of children (UNESCO, 2022). Early childhood education contributes to the development of the brain, readiness to school, and the full growth of a person at the most formative period of life. Over the recent years, there has been high levels of change in the way education is conducted due to the rapid development in technology. Tablets and other learning applications like interactive platforms, educational applications and other digital tools are becoming more popular to improve the teaching and learning process. In more recent times, the Artificial Intelligence (AI) has become a revolutionary technology in the education field. Educational technologies based on AI comprise adaptive learning systems, speech-recognition tools, automated evaluation systems, intelligent tutoring systems, which can be used to customize learning interfaces to the specific needs of the student (Holmes et al., 2022).

Artificial intelligence is being implemented in primary and secondary schools around the world to enhance efficiency and deliver individualized feedback and differentiated instruction (OECD, 2021). Nonetheless, starting with the introduction of AI into the sphere of the early childhood education is still underdeveloped, especially in the low- and middle-income countries. Although AI technologies can potentially help and provide people with personalized learning paths and improve interactions, they also bring up the issue of developmental appropriateness, ethical concerns, screen time, and data privacy (Selwyn, 2019). Digital technologies have been embraced in Sri Lanka education more rapidly, in particular, after the COVID-19 pandemic, which imposed a certain emphasis on technology-based learning. Even though the use of technology has been on the increase in most institutions of learning, the use of AI-based tools in early childhood classrooms is still a relatively recent phenomenon. With the advancement in technology innovation, the perception of the stakeholders would need to be comprehended in a way that would make the implementation responsible and effective.

Parents are the major stakeholders of the early childhood education. Their values, attitudes, and beliefs have great impact on the learning experiences and exposure to technology among the children (Livingstone and Helsper, 2008). Studies show that parents usually have ambivalent attitudes towards digital technologies in early childhood, as they believe that it brings positive outcomes and, at the same time, they are worried about the negative effects of excessive screen time, lower socialization, and the possible dangers to privacy (Plowman et al., 2012). The confidence in technology and knowledge about its usage is the key to parental accommodation (Mascheroni & Holloway, 2019). Although there is an increasing debate on AI application in education in the global world, the studies have not explored parental attitudes toward the use of AI in early childhood education, especially in the Sri Lankan context. Cultural values, socio-economic factors, digital literacy levels, and educational backgrounds may affect the perceived AI-based tool by the Sri Lankan parents in the early learning settings. The effective application of AI to ECE can be met with opposition or lack of understanding without the consent and understanding of the parents.

Hence, the paper will seek to understand the parental views on the application of Artificial Intelligence in the Early Childhood Education contexts in Sri Lanka. The study aims to deliver context-specific and meaningful research that has the potential to guide educators,

policy-makers, and early childhood institutions to implement AI in a responsible and ethical manner by assessing parental awareness, perceived benefits, concerns, and influencing factors.

Review of Related Literature

The literature on parental attitudes toward digital technologies and Artificial Intelligence (AI) in early childhood education highlights both opportunities and challenges. The American Academy of Paediatrics (2016) emphasizes the importance of balanced screen time for young children, while studies such as Asmayawati (2023) stress the role of parental involvement in fostering digital literacy. Parents often act as mediators of children's technology use, shaping both access and attitudes (Livingstone & Helsper, 2008). Research shows ambivalence, with parents recognizing potential benefits of digital tools but expressing concerns about excessive screen time, socialization, and privacy risks (Plowman et al., 2012).

Recent scholarship has begun to explore parental perspectives on AI specifically. Holmes et al. (2022) outline the promises of AI in education, including adaptive learning and intelligent tutoring systems, while OECD (2021) highlights its potential to enhance efficiency and personalized feedback. However, studies such as Deckker & Sumanasekara (2025) and Ho et al. (2025) emphasize the need to understand parental attitudes, as acceptance and trust are critical for responsible implementation. Parental acceptance is influenced by cultural values, socio-economic factors, and perceptions of developmental appropriateness (Kory & Breazeal, 2021). Methodologically, qualitative approaches such as thematic analysis (Braun & Clarke, 2006), semi-structured interviews (Kallio et al., 2016), and phenomenological inquiry (Moustakas, 1994) have been widely used to capture these nuanced perspectives.

Overall, the literature suggests that while AI offers significant potential for early childhood education, its success depends on parental awareness, confidence, and mediation. Understanding parents' perceptions is therefore essential for guiding educators and policymakers toward ethical, context-sensitive, and developmentally appropriate applications of AI in early learning environments.

Objectives

The objectives of the article are to understand parental views on the application of Artificial Intelligence in Early Childhood Education (ECE) within the Sri Lankan context. The study seeks to assess parental awareness of AI-based tools and to explore perceived benefits such as personalized learning paths, readiness for school, and improved interactions. It also aims to identify parental concerns regarding developmental appropriateness, screen time, ethical issues, and data privacy. Another objective is to examine the influence of cultural values, socio-economic factors, digital literacy, and educational backgrounds on parents' acceptance of AI in early learning settings.

The study further intends to analyse parental attitudes toward digital technologies, recognizing ambivalence between positive outcomes and worries about socialization and privacy. It aims to evaluate stakeholder perceptions to ensure responsible and effective implementation of AI in ECE. By focusing on parents as major stakeholders, the research seeks to determine their role in shaping children's exposure to technology and influencing institutional adoption. Ultimately, the objectives are to provide context-specific insights

that guide educators, policymakers, and early childhood institutions in implementing AI responsibly, ethically, and meaningfully, while ensuring that parental consent, trust, and understanding are central to the process.

Research Objectives

- To explore parents' perspectives on the use of Artificial Intelligence in Early to identify parents' level of awareness regarding AI-based educational tools used in early childhood settings.
- To examine parents' perceived benefits of AI integration in ECE.
- To explore parents' concerns related to AI use, including screen time, social interaction, and data privacy.

To determine factors influencing parents' acceptance or resistance toward AI in early childhood classrooms.

Methodology

In This chapter will detail the research design that will be applied in the proposed study to investigate the attitudes of parents regarding AI application in early childhood educational institutions in Sri Lanka. It describes research design, research strategy, study location, subjects, sampling, data collection, data analysis, credibility, ethical issues as well as limitations of the study. The research methodology was quite well thought out such that the results represent the attitudes, experiences, and concerns of the parents with the implementation of AI in the early childhood classroom.

The research in this study used a qualitative research design. The best strategy was that of qualitative research because the study seeks to understand the perceptions, beliefs, concerns and expectations about the parents in detail. Creswell and Poth (2018) observe that qualitative research is suitable in a study where a researcher attempts to comprehend the experiences and meanings that participants assign to a given phenomenon. The application of AI in early childhood teaching is a somewhat emerging and developing field in Sri Lanka, which is why a qualitative design is the most suitable choice since it enables the exploration of questions in detail instead of quantifying the predetermined variables. This research design is flexible as the participants are free to air their views and give personal experiences about the use of technology in the education of their children.

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The sample population in this study included parents whose child was attending early childhood education programs (3-5years old). The choice of parents was, they are main stakeholders in early learning of children and have a great influence in determining exposure of children to technology. The number of the parents that took part in the study

was 10-15. This figure was thought to be adequate in saturating the data in qualitative research where the researcher would not find any new themes in case a few more interviews would be used.

The research employed the purposive sampling. Purposive sampling enables the researcher to choose the participants that have some first-hand experience or first-hand knowledge on the research topic (Patton, 2015). The following were the criteria used to select the parents: Having a child in a centre of early childhood education. Knowledge concerning the existence of digital technologies in classrooms. Willingness to work on a voluntary basis. This approach was important in making sure that the participants would give meaningful and relevant information on the research problem.

Findings and Discussion

Table 1: Summary of Thematic Analysis of Parents' Perspectives on AI in Early Childhood Education (N = 20)

Main Theme	Sub-Themes	Description of Findings	Frequency (n=20)	Sample Participant Excerpt
1. Awareness and understanding of AI	General Understanding of AI	Parents described AI as “smart technology,” “adaptive systems,” or “computer programs that help children learn.” Understanding was functional rather than technical.	16	“AI is like a smart system that adjusts according to my child’s learning level.” (Parent 3)
	Awareness of AI Tools in Preschools	Parents reported awareness of digital tools such as interactive apps, smart boards, and adaptive games used in classrooms.	15	“They use learning apps that change the difficulty based on how my child answers.” (Parent 8)
	Exposure to AI-Based Tools	Many parents confirmed that their child’s preschool uses some form of digital or AI-supported learning tools.	14	“My child uses an interactive storytelling app in class.” (Parent 6)
2. Perceived Educational Benefits	Personalized Learning	Parents believed AI can adjust to individual learning speeds and provide customized activities.	18	“Every child is different. AI can give activities based on my child’s ability.” (Parent 7)
	Enhancement of Academic Skills	AI tools were perceived to improve language, literacy,	17	“My child learned new

		numeracy, and problem-solving skills.		English words through the app.” (Parent 14)
	Increased Engagement & Motivation	Parents felt children are more interested and motivated when learning through interactive tools.	16	“Children enjoy learning more when technology is involved.” (Parent 2)
	Complementing Traditional Teaching	Parents emphasized that AI should support teachers, not replace them.	19	“Technology is good, but teachers are still very important.” (Parent 9)
3. Concerns and Challenges	Screen Time	Parents expressed concern about excessive screen exposure but accepted moderate, controlled use.	15	“Too much screen time is not good, but limited use is okay.” (Parent 5)
	Social Development	Some parents worried AI might reduce peer interaction and teacher-child bonding.	10	“Children must interact with others, not only with screens.” (Parent 18)
	Data Privacy & Security	Parents showed moderate concern about how children’s data is stored and protected.	12	“I hope the school ensures our children’s data is safe.” (Parent 12)
4. Acceptance and Influencing Factors	Comfort with AI Integration	Majority expressed comfort with AI use under supervision.	17	“If teachers guide them properly, I am comfortable.” (Parent 1)
	Teacher Supervision	Acceptance increased when AI tools were used with teacher involvement.	19	“AI should be guided by teachers.” (Parent 11)
	Transparency & Communication	Parents wanted clear information about tools, data use, and screen time policies.	18	“Schools should explain clearly before introducing

				AI.” (Parent 10)
	Cultural and Personal Values	Parents supported AI as long as it does not interfere with moral, social, and play-based learning.	16	“Technology is fine, but children must also learn values and social skills.” (Parent 4)

Conclusion

This paper shows that Sri Lankan parents have rather positive and progressive approaches towards integrating AI into early childhood education. Although there are issues of screen time and data security, they are offset by the acknowledgment of the ability of AI to improve personalized learning and interaction. The results highlight the importance of the fact that the effective implementation of AI in early childhood education requires, in addition to the technical level of development, such concepts as ethical accountability, the engagement of teachers, cultural consistency, and clear communication. AI is not to be regarded as a substitute of human interaction but an educational companion. Finally, AI should always bring value to early childhood education, be developmentally appropriate, and supported by solid ethical principles so that technological advancement can support, not harm the comprehensive development of children.

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