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Abstract

Revolutionary technological advancements have introduced the integration of Conversational AI into a multitude of different settings. This widespread implementation has raised questions about the impact of AI on learning, its benefits are and its potential costs. This study aims to explore the perspectives of parents, investigating their confidence in allowing conversational AI tools to become part of children's learning. The study analyses survey responses of 101 parents to investigate how they feel about this emerging tool. Our primary hypothesis was that parents would be overall positive toward implementing conversational AI into education. Secondly, it was hypothesised that alongside the positivity, parents would also show moderate apprehension to their children using conversational AI. Results showed most participants would allow their children to use these tools in confidence, and believed they will learn quicker with authentic information provided by AI and when educational apps have AI integrated in their systems. In conclusion, participants generally had a positive outlook on the potential impact of conversational AI on the future of their children's education, in duality the study also finds a coinciding level of uncertainty and apprehension toward conversational AI is and its uses.

Introduction

In our digitalised world where computers are progressively being used as a substitute for human interaction, a new personified form of technology has arisen - Artificial Intelligence (AI). AI is a form of programmable technology that simulates human intelligence, including higher order functions such as decision making, learning from experience, teaching and speech recognition (Limna et al., 2023). Conversational AI is an increasingly popular and relatively controversial AI sub-version that mimics human interaction, the most common form being ChatGPT (Atlas, 2023). Conversational AI enables technology to educate and engage with users in natural free flowing conversations, just like how people interact with one another day to day (Kulkarni et al., 2019). Its wide knowledge base and unpoliced access makes it incredibly easy for children to use, and leaves question marks about whether caregivers feel comfortable allowing their children to utilise this powerful technology within an educational environment. Therefore, the aim of this study is to explore and understand parents' perception of the uses of conversational AI in an educational environment.

Across society, there are mixed perspectives on whether AI is wise to implement for students' learning. From a general school learning perspective, AI seems to be beneficial for both students and teachers. In a study by Kaplan-Rakowski et al. (2023) they investigated teachers' perspectives of conversational AI. In their study, they used 15 Likert self-report scale questions to gage teachers' perspectives on conversational AI such as ChatGPT in education. Overall, it was found that teachers had positive perspectives of conversational AI and positively agreed with 14 out of 15 of the statements. The study found that teachers believed conversational AI was a valuable tool for students and that it enhances professional development. This too was found in a study conducted by Lampropoulos et al. (2023), where a social media analysis revealed teachers had positive feelings toward the implementation of conversational AI into education, and that they themselves are likely to implement it into their teaching. Furthermore, AI also helps improve teachers' efficiency and speed for administrative duties such as evaluating students work (Alam, 2021). AI accomplishes this by collecting data from class exam results to find out which topics most of the students struggled with. This helps teachers to be aware of which subjects students need more guidance on. In terms of outside of school help, AI chatbots can provide extra assistance after or before school, when teachers and parents may not be available to aid students (Essel et al., 2022).

Rzepka and Berger (2018) also found positivity toward conversational AI within their study of investigating at how students perceive AI technology. Unlike Kaplan-Rakowski et al.'s (2023) study however, although there were perceptions of likeability toward AI technology, there were also perceptions of threat, particularly students perceiving robotic teachers as threatening. However, these perceptions of threat were not as prevalent when the children actually interacted with the robot AI. This study may be explained by the mere exposure effect, where the more you are exposed to something, the more you tend to like it and the higher you value it (Green, 2007). Perhaps then, parents too, like students will also view conversational AI more positively if they have more exposure to it.

Surprisingly, it seems the general public have more concern about conversational AI than teachers and schools. In a study by Tlili et al. (2023) investigating public discourse regarding conversational AI on twitter, the study found both positive and negative perceptions of conversational AI. It was found that there was overall strong enthusiasm and positivity amongst the public regarding ChatGPT's use in educational settings. However, Tlili et al. (2023) also identified caution in adults, including several ethical concerns when it comes to ChatGPT. The analysis found strong themes of apprehension around the use of ChatGPT, worrying that students may take advantage of its vast knowledge base and use it for nefarious purposes such as plagiarism and cheating (Tlili et al., 2023). The study also found general unease around how the easy accessibility of ChatGPT may breed laziness among users, particularly students. Furthermore, adults-worried students may unintentionally take ChatGPT information as gospel, leaving them prone to being influenced by false information (Tlili et al., 2023). This study shows that there is an overall approval for AI to be used within the education system like Kaplan-Rakowski et al. (2023) found in their study investigating teachers, however unlike the teachers' perspectives, TIlili et al. (2023) found that much of the public are relatively apprehensive of AI technology due to the risks and uncertainty it poses. While teachers and schools generally seem to respond to conversational AI positively, Tlili et al. (2023) and Rzepka and Berger's (2018) studies indicate that the wider public has mixed views on conversational AI, having a duality between positivity and apprehension. It is uncertain why there is this disparity in how teachers

view AI versus the wider public. It may be because teachers are more well versed in how to use AI, and thus perceive it as less dangerous or less of a threat. Teachers may have also had more exposure to AI and thus the positive effects of the mere exposure effect are likely more at play for them than the general public (Green, 2007). While these studies provide insight into how the public and teachers perceive conversational AI, they neglect to delve into parents' viewpoints which may be vastly different than both the general public and teachers. Parents are likely to have more of an emotional investment in this dilemma considering their children's futures are at the forefront, which may result in them having stronger opinions than the general public. There have been conflicting findings across research when examining parents' views of their children using conversational AI. In a study by Lin et al. (2022), they investigated how parents and students interacted with a story telling AI – Floppy, and how parents perceived the story telling agent. It was found that parents overall reacted positively to the story telling AI, stating that "Floppy helps them to think deeper about things" and that they "Miss Floppy when they're not around." Parents also believed their children were more engaged with Floppy than themselves, however parents did not find this disappointing and instead felt it gave them behavioural relief from their child's waning attention span (Lin et al., 2022). Similarly, Wu et al. (2021) found that parents generally expressed positive attitudes toward having AI robots working as educational assistants for their children.

Much to the contrast, Kucrikova and Hiniker (2023) interviewed eleven parents about their opinions of their pre-school children using AI technology. They found that parents viewed AI as a potential threat to their child's development as well as violating user autonomy. Parents also saw the technology's human mimicry and ability to engage in meaningful interaction as a means simply for companies to gain profit, and not for the betterment of society (Kucrikova & Hiniker, 2023). Garg and Sengupta (2020) too found negative perceptions in the eyes of parents with AI, where they worried about privacy issues, not understanding the technology, and not being able to contribute to their child's learning themselves. These studies indicate an overall strong negative perception from parents, the polar opposite of that found in Lin et al's. (2023) study.

When comparing perspectives of parents and children using conversational AI, Van Brummelen et al. (2023) found that children perceive conversational agents as significantly more human-like, warm and dependable than parents do. While parents were relatively positive toward conversational AI and believe it is useful, children tend to trust conversational agents more than their parents (Van Brummelen et al., 2023). This suggests children tended to be less reserved than parents around the implementation of AI and had more faith in the AI for giving them accurate information (Van Brummelen et al., 2023). This indicates that children would be more inclined to trust AI in educational settings than parents. This may be a biproduct of young children being raised in a technology rich environment, where digital assistance with work is commonplace. It also may be because parents are deeply emotionally invested in their children's futures and thus are more apprehensive to the risks the AI poses. It seems across different studies parents have different opinions on conversational AI. Our study seeks to further clarify parents' viewpoints of AI agents in education.

Indeed, it is important for parents to be wary of the potential dangers of AI, but it becomes disadvantageous when they let their worries consume them or get out of hand. In Van Brummelen et al's. (2023) study, researchers describe how if users are too averse to technology's advice and information, they cannot truly benefit from using

the devices, however, if they are too appreciative, users may make ill-informed decisions when technology presents incorrect information (Van Brummelen et al., 2023). The findings from this study indicate that in order to get the best use of the AI Chatbots, parents must be open to the idea of using AI to help them, but not to blindly trust all the information it gives, and remember to monitor their children or talk to the child's teacher if they are unsure (Van Brummelen et al., 2023).

Overall, as AI becomes much more common there will be ample opportunity for it to be put into the education system. While there are many studies that investigate student and teacher perceptions of AI in the classroom, as well as the wider publics perspectives on AI, far fewer have investigated parents' views of using AI in the classroom. Those studies that have investigated parents' opinions have each derived incredibly conflicting results with one another, making the need for further research vital. Despite parents themselves not spending time in the classroom with their child, they are largely responsible for the child's learning outcomes, and thus It is incredibly important that their views on the matter are investigated. In addition to a lack of research involving parents, research has also often neglected to delve deeper into perspectives on conversational AI by only using qualitative or quantitative data, not both. Therefore, the present study seeks to fill this gap by using a mixed methods design: utilising both qualitative and quantitative data to get a rich depth of information of parent perceptions of AI. Considering most of the previous research suggests a level of optimism toward conversational AI, our main hypothesis was that parents would have overall positive attitudes toward using AI in technology. In addition, much of the past research showed a duality with apprehension alongside positivity due to a lack of public knowledge on what it is, therefore our secondary hypothesis is that parents would show moderate apprehension to AI.

Method

Participants

111 parents started the survey study, however, five people did not agree to take part in the study and an additional five were not parents. Therefore, the data from 101 participants were used in the final analysis. In relation to the number of children participants had, 78 (77.2%) participants had one child, 19 (18.8%) had two children and 4 (4.0%) had three children. The age range of participants' first child was 1-312 months (M = 48.2 months, SD = 45.2 months). The second child's age range was 12-216 months (M = 51.9 months, SD = 44.7months). The third child age range was 12-120 months (M = 45.0 months, SD = 50.3 months). Participants were recruited through different social media including Twitter, WhatsApp, Instagram and LinkedIn.

Materials

Our survey consisted of 9 items. Seven of the questions were closed, with two requiring a 'yes'/'no' answer (e.g. "Have you heard of conversational AI?") and five questions required participants to rate on a 5-point Likert scale from 1 'Strongly Disagree' to 5 'Strongly agree' (e.g. "Conversational AI in online education elements will help children or students to learn"). The final two questions were open-ended (e.g. "Describe in no more than 10 words what AI means to you."). The survey took less than 10 minutes to complete.

Procedures

Ethics approval was obtained from the authors' institution (Ref: 001-JULY23). Participants were provided with an information sheet detailing the study's objective and the option to withdraw from the study if they did not want their data to be used in the final analysis. They each signed consent forms prior to commencing the survey, personal safety was also reassured. The study was conducted using Microsoft Forms. After reading the information sheet and indicating their consent to participate, participants were directed to the questions. The survey was self-paced, participants first answered the seven closed answered questions. After participants had answered the first open ended question "Describe in no more than 10 words what AI means to you" they were given a brief written explanation of what AI is to help educate them. Similarly, after answering the second open ended question "Describe in no more than 10 words what conversational AI means to you" they were given a brief written explanation of what conversational AI is. Once participants had provided their responses, they were provided with a debrief sheet, thanked for their participation and could close the browser window.

Design and Analysis

Data were pre-processed in Microsoft Excel and analysed using IBM SPSS Statistics version 28 (IBM Corp, 2021). Closed questions were analysed by frequency analysis. Likert ratings were analysed using frequency analyses. The two open ended questions were analysed using a thematic analysis, where participants responses were rigorously analysed, and common ideas were pulled together to form themes across responses.

Results

In response to the first yes or no question "Do you have any idea about Artificial Intelligence (AI)??" 70% of participants responded yes and 30% answered no. In response to the second yes or no question "Have you heard of the term Conversational AI?", 33% of participants responded yes and 67% responded no. Overall, across all 5 Likert scale questions, participants were more likely to agree or strongly agree than to disagree or strongly disagree.

For the first Likert scale statement "conversational AI in online education elements will help children or students to learn" 46% agreed or strongly agreed, whereas only 20% disagreed or strongly disagreed. In response to Likert scale question two "I think I will allow my child to learn from mobile apps using conversational AI" 48% agreed or strongly agreed and 33% disagreed or strongly disagreed. In response to Likert scale statement three "I would imagine that my children will learn quickly using conversational AI", 38% agreed or strongly agreed and 31% disagreed or strongly disagreed. In response to Likert scale statement four "I feel very confident giving my children conversational AI tools" 40% agreed or strongly agreed and 32% disagreed or strongly disagreed. Finally in response to Likert scale statement five "Authenticity of the information provided by conversational AI is great, near to perfect" 42% agreed or strongly agreed and 23% disagreed or strongly disagreed. See a detailed breakdown of results in Table 1 and Table 2.

Table 1. Yes or No Statement Responses as Percentages

Statements	Yes	No
Do you have any idea about Artificial Intelligence (AI)?	70.3%	29.7%
Have you heard of the term Conversational AI?	32.7%	67.3%

Table 2. Likert Scale Responses as Percentages

Statements	1 (Strongly disagree)	2 (Disagree)	3 (Neither agree nor disagree)	4 (Agree)	5 (Strongly disagree)
Conversational AI in online education elements will help children or students learn	7.9%	11.9%	34.7%	37.6%	7.9%
I think I will allow my child to learn from mobile apps using Conversational AI	9.9%	22.8%	19.8%	39.6%	7.9%
I would imagine that my children will learn quickly using Conversational AI tools	7.9%	22.8%	31.7%	27.7%	9.9%
I feel very confident giving my children a Conversational AI tool to learn	9.9%	21.8%	28.7%	32.7%	6.9%
Authenticity of the information provided by Conversational AI is great, near to perfect	8.9%	13.9%	35.6%	29.7%	11.9%

A thematic analysis was carried out to better understand parents' responses to the two short answer statements; 1. "Describe in 10 words or less what AI means to you" and 2. "Describe in 10 words or less what conversational AI means to you". While the full 67% of participants responded to our first statement only 31% of participants responded to the second statement. This may indicate that fewer parents had any knowledge of what conversational AI is and thus neglected to answer the question.

In response to statement one "Describe in 10 words or less what AI means to you", we were taken aback by the overwhelming amount of positivity found in the responses. Although there were a few apprehensive responses from parents such as "Machines can catch what is going on in my mind" and simply "scary" the vast majority

were positive and excited for the implementation of AI. This aligns with our quantitative data results, where the majority of parents were positive about AI and there were lower negative responses than positive across all five Likert scale ratings. Much of the positivity from the open-ended questions came from the ease of use of AI technology, shown in a multitude of answers including "AI is a process made from collective data for getting easy outputs" and "a tool to ease human efforts". Another optimistic theme that emerged was parents' belief that AI enhances learning. Parents believed AI would aid individuals promising and rich learning experience, however their responses were quite broad, and it is uncertain whether their positivity toward AI improving learning was related to children specifically or simply a general outlook. Participants commented "AI intelligence leverages computers and machines to mimic the problem solving and decision-making capabilities of the human mind" and "digital tool which helps for better work efficiency, if it is used for good cause." Participants also made sure to highlight the importance of human interaction alongside AI use "AI can enhance learning processes but cannot replace the value of human interactions in education." This indicates that while parents value AI within education, they want to ensure that human interaction remains an integral part of learning.

Another interesting theme that emerged was parents seeing conversational AI as a futuristic tool, and a strong focus on how it will change the world we currently live in. Change is generally a phenomenon that people dislike and try to avoid due to its uncertainty (Oreg, 2003), so we were surprised to find that most people who mentioned AI changing the world seemed relatively positive. Some answers relating to AI as changing the future include "AI is something that changes our vision to technology", "Enormous potential if it can be regulated and managed ethically", "Artificial intelligence is an advancement in how we think and process information about tasks" and one that simply said "It is future". A curious theme we found was the duality between human and artificial intelligence. People often referred to AI technology as mimicking human intelligence "Futuristic technology mimicking human intelligence," and "Simulating human intelligence by computer systems". It seems from our data that when comparing conversational AI and technology, the lines become blurry on what the distinction is between human thought and computer thought. One participant described AI as 'Thinking like us", another referred to AI as a "Replicating of intelligence through machine." People often referenced human like traits in terms of conversational AI such as "Decision making capabilities like a human in a computer" and "Where human intelligence meets machine." One person even went to far as to say "Computers' ability to think and act," this was particularly interesting considering how people used words generally ascribed to those with a conscience such as 'act' and 'think' to a programmable computer system.

In terms of statement two "Describe in 10 words or less what conversational AI means to you", it was more difficult to form concrete themes due to the lower number of responses, however, like statement one, a few main ideas came through. A similar theme of positivity was found in response to statement two it was in statement one, with people showing a similar feeling of warmth and excitement toward conversational AI. This was shown in answers such as "My child is very happy", "Great tool humans can use for talking with machine" and "can promote standard of education." Overall, it seems parents believe AI will help their child grow and foster their education for good, and that AI is a step in the right direction for the advancement of education. Like statement one, human/technology duality emerged in response to statement two. Many answers focused on conversational AI as an agent for replicating human interaction "Conversational AI is a type of artificial intelligence that can simulate

human conversation" and "An artificial Intelligence which is a substitute of human intelligence". In both statement one and two this human mimicry theme wasn't necessarily positive or negative, instead it was simply descriptive.

Overall most parents who answered statement two seemed to have a good knowledge basis of what conversational AI was, understanding that it talks to humans in a conversational manner to communicate knowledge and promote understanding, this understanding is shown through the following answers "Conversational AI uses technology to formulate discussions and provide responses for questions" and "Conversational AI is a term used to describe various methods of enabling computers to carry on a conversation with a human." However, considering only 31% of the 101 participants answered the second question, and 67% of participants indicated they did not know what conversational AI is, this may indicate that those who did not answer were unsure of what conversational AI was. This may mean participants knowledge of conversational AI may be overestimated and indicates we may not have a representative sample of all parents. Furthermore, our found theme of positivity may also be overestimated, as those who have less knowledge on conversational AI may be more apprehensive toward the idea due to lack of exposure to it (Green, 2007).

Despite the large amount of positivity shown toward conversational AI in statement two responses, there was a few parents who were apprehensive to the idea of its use, some even incredibly negative. One individual called conversational AI "Idiots friend", others believe there should be a balance of both technology and traditional learning methods. Some seemed to not understand what conversational AI is, answering "I heard it at college" and "A type of AI". This indicates that there needs to be further efforts to educate parents on what conversational AI is so they can form more grounded opinions. Nevertheless, the negative perceptions from participants were largely in the minority, suggesting promising attitudes from parents towards conversational AI.

Discussion

In our study, our primary objective was to delve into the viewpoints of parents concerning conversational AI and its potential integration within educational contexts. To achieve this, parents' viewpoints of conversational AI were measured through a survey including seven closed ended questions and two open ended questions in order to derive rich, informative data. The study revealed several key findings regarding the use of conversational AI. The greater majority of participants answered positively with 'agree' or 'strongly agree' to all five Likert scale statements. This same general positivity and agreeableness with AI technology was also seen within our qualitative answers, with parents responding overall relatively warmly to AI, indicating a promising degree of enthusiasm for its implementation into education. These findings support our primary hypothesis – that parents would respond positively to children using AI in education. In addition, the frequency of 'neither agree nor disagree', 'disagree' and 'strongly disagree' was also relatively prevalent, indicating some level of apprehension toward conversational AI despite the general positivity. Therefore, our secondary hypothesis – that parents would show moderate apprehension toward Conversational AI was also supported. The prevalence of 'agree' and 'strongly agree' gives a clear understanding that participants were mostly in favour of conversational AI being used and its potential future in educational settings for their children. The positive attitudes derived from our results aligns with Kaplan-Rakowski et al.'s (2023) and Lampropoulos et al.'s (2023) study, finding that

participants were very positive toward the use of AI technology within education.

Parents stated their confidence in letting their children use these tools themselves which implies they are comfortable with such tools being used within educational apps. However, the still relatively prevalent frequency of the response 'neither agree nor disagree', ‘disagree’ and ‘strongly disagree’ in each question including about the educational benefits and authenticity of information provided by conversational AI, may be a reflection of a general unfamiliarity with these emerging technologies (Han & Lee, 2022). We believe this general uncertainty is attributed to the relatively nascent nature of conversational AI and its applications, particularly among individuals who may not be well-versed in cutting-edge technological advancements such as parents (Nordström, 2022). The uncertainty regarding the potential for conversational AI to expedite learning may signify a lack of awareness regarding the specific areas where AI can augment a child's development, compared to what traditional teaching methods can already offer (Albacete et al, 2019). This uncertainty was not only reflected in our quantitative results but also in our qualitative data, where only 31% of participants answered statement two “Describe in no more than 10 words what conversational AI means to you”. We attributed this low response rate to a lack of knowledge of Conversational AI, as virtue of 67% of participants indicating that they did not know what conversational AI was.

Within the responses to statement two, some parents seemed unsure of what conversational AI was, using rather broad descriptions such as describing conversational AI simply as “a type of AI” or reflecting from past experience “I heard it in college”. This data highlights a gap in parents’ knowledge of conversational AI and makes it clear that there is a general unawareness of parents in terms of conversation AI. The general lack of awareness may have heightened apprehension in participants, contributing to the relatively common level of ‘disagree’ or ‘strongly disagree’ responses from parents. This seemed to be a theme across multiple studies, where participants were apprehensive toward conversational AI due to a lack of knowledge around it (Rzepka & Berger 2018; Tlili et al., 2023). This may be explained by the uncanny valley hypothesis, which describes a person’s discomfort toward a robot that is humanlike, but fails to achieve a humanlike phenotype (appearance) (Rzepka & Berger). An important finding of our study is that a large percentage of the parents (46%) who took part said they would allow their children to use conversational AI on a mobile app and only 20% disagreed or strongly disagreed. This too was found in Lin et al.’s (2022) study, where parents generally expressed positive attitudes toward the idea of using storytelling robot Floppy to teach their children (Lin et al., 2021) and Wu et al.’s study where parents had positive attitudes toward AI as an educational assistant. These findings are in line with our own and indicate that parents normally take the approach of using the help of AI to educate their children positively as well as believing it will aid their children positively rather than hindering them.

Within the qualitative data participants seemed to view conversational AI as well as AI as futuristic and visionary technology, and were relatively positive toward this idea. Participants stated “AI is something that changes our vision to technology”, “Enormous potential if it can be regulated and managed ethically” and one that simply said “It is future”. We found this surprising considering that people are usually apprehensive to change, and resist deferring from the status quo (Oreg, 2003). This defied our expectations and suggested parents are warming to AI despite its quick implementation, and its potential to change the future of education despite the risks it may pose.

Even though the parents displayed a willingness to let their children use apps with conversational AI functions in the survey, A large proportion of parents also selected ‘neither agree nor disagree’, with 'disagree' and 'strongly disagree' being the less frequently selected options. This was particularly true for statement four ‘Authenticity of the information provided by Conversational AI is great, near to perfect.’ It was found that for this question, the largest proportion of people (36%) neither agreed nor disagreed, when compared to the other four statements. This indicates that although parents overall believe AI will aid their child, they are not completely trusting of AI to give their child accurate or informed information. This is not surprising and aligns with past research from Van Brummelen et al. (2023) and Tlili et al. (2023) where people were generally are apprehensive about AI technology due to being unsure whether it provides people with accurate and reliable information for their education. Similarly, while most people were positive in the qualitative data, there were a few negative and judgemental responses from parents as well in regard to conversational AI usage, examples including a participant calling it “Idiot’s friend” and “scary”. This too corresponds with the results found in other studies, where it has been revealed that some parents have certain concerns and problems in trusting conversational agents (Kucirkova & Hiniker, 2023; Garg & Sengupta, 2020; Van Brummelen et al., 2023).

A further interesting finding that arose from our results was that the number of people who agreed to allow their children to use apps with conversational AI functions (48%) did not match with the number of parents that felt very confident in giving their children a Conversational AI tool to learn (40%). A potential explanation may be that parents are fine with letting their children to use conversational AI experimentally for fun, but do not want them to use it for something as important as education, where it could potentially lead the child astray by giving them the incorrect or biased information (Baidoo-Anu & Ansah). Indeed, both Garg and Sengputa (2020) and Kucririkova and Hiniker (2023) where parents have concerns about children having decreased social awareness through using conversational AI in education as well as worrying about their privacy and security. Overall, these concerns that parents have about children using AI tools might have made them less confident in trusting their children completely with AI tools within education. Considering those who indicated they knew about conversational AI in our study tended to respond more positively toward it than those who did not know much, we believe that if parents have more exposure to Conversational AI, they will grow to like it more through means of the mere exposure effect (Green, 2007). We believe if parents were educated more on AI, they may quickly warm to it and its future potential within education. This highlights a need for more education toward parents about what Conversational AI is.

Limitations and Strengths

A limitation of our study is the lack of responses to statement two “Describe in less than 10 words what conversational AI means to you.” Considering that only 31% of participants responded to this question, it was difficult to derive themes from the data that we could be sure was representative of the whole sample. The lack of responses may indicate there was a lack of knowledge on conversational AI. This is a viable theory considering that 30% of participants indicated that they didn’t have any idea of what artificial intelligence was in the survey and 67% responded saying they hadn’t heard of conversational AI. Although our study gave an explanation of what AI and conversational AI is after answering statement one and two, it was rather brief meaning it couldn’t

give participants a full understanding of the tool. Furthermore, the description was given after participants answered each of the statements, thus not being able to aid them in their answer. In order to rectify this limitation, we suggest future research studies make it compulsory to answer all questions as well as giving an in-depth explanation of what conversational AI is before the survey is commenced.

Another limitation of our study was that our two open ended statements were not targeted precisely to find out how parents felt about their children using conversational AI within education. The two statements asked participants about what AI and conversational AI meant to them, but neglected to ask them what they believe it would mean for their children, or how they feel AI would impact their education. Due to this, participants answers were very broad, where participants often simply gave definitions of what they believed the technology to do rather than explaining their perspectives of the AI technology. Upon reflection, we believe it would have been more beneficial to tailor questions more towards parents' perspectives of conversational AI in terms of their children rather than in terms of themselves such as "Describe in 10 words or less how you would feel about conversational AI being implemented into your child's education.". A strength of our study is that we incorporated both quantitative and qualitative data, meaning we could get a more in-depth idea than many other studies on parents' views of conversational AI. Using a mixed methods design allowed us to explore themes and make links between the open ended and closed ended data to heighten our understanding. Other strengths of our study included providing greater insight into parents' perspectives of conversational AI, as well as identifying a need for parents to be more educated on AI technology so they can make informed decisions on their views of conversational AI. This is particularly important considering AI technology will not only be affecting the future of their child, but their future as well, making the need to educate older adults – who perhaps are not as confident with technology as their children, all the more important.

Future Research

One recommendation for future research is to do cross-cultural studies across parents. This is because there could be cultural differences when it comes to acceptance and concerns regarding AI in education and how cultural factors impact their views and expectations of AI-powered educational tools as cultural differences between educators and culturally linguistically diverse (CLD) students can have negative effects on the education of CLD learners (Chamberlain, 2005). For example, eastern countries who have a strong focus passive learning may be more apprehensive than Western countries who are more focused on active learning and interaction with classmates and technology within the classroom (Hassan et al., 2010).

Furthermore, future research could educate parents on what conversational AI is and then have them take a survey to understand how they feel about it. This way, researchers could get more in depth and informed answers about how parents feel about conversational AI. This could be done by conducting a study where parents are assessed on their AI knowledge before and after parental training, looking at how their knowledge developed overtime as well as their opinions. This also likely means researchers would get a higher response rate to the open-ended questions as parents would confident enough with the knowledge they have to answer them.

Conclusion

To conclude, this study focused on investigating parents' perspectives on conversational AI. The study revealed that the majority of participants responded with 'agree' or 'strongly agree' when asked about whether they believed conversational AI would help their children. The results from our study contributes positively to the field of AI in education, as many parents agree with the use of AI in education for their students. The study also provided insight into the fact that parents are overall positive toward the idea of conversational AI into education. The study also identifies a lack of knowledge of how conversational AI can be used, providing suggestions that parents should be further educated on AI. The main limitation was that there was a lack of responses to both of the qualitative short answer questions, particularly statement two, making it difficult to generalise our qualitative data findings. Overall, to further investigate the topic of parents' views on conversational AI in education it would be beneficial to educate parents before taking the survey on what conversational AI is so they can make grounded, informed opinions. Future research may also look into conducting cross-cultural studies where parents from other countries are involved as parents from different cultures will have views that vary on this topic.

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