What are New Zealand primary teachers' beliefs and understandings of using ChatGPT to support their own practice?

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ABSTRACT

The purpose of this study is to understand the current situation where practising New Zealand primary educators have utilised ChatGPT. More explicitly, the research considered how educators perceived the beneficial affordances and used them to support their classroom practice. Concurrently, negative implications of use are noted and an attempt to draw out their impact is also considered. A survey with open and closed questions was created and shared online for New Zealand Primary teachers. Sixty-one teachers responded to the survey. The data were analysed using both qualitative and quantitative methods using a mixed-methods approach. The findings from the study suggest ChatGPT has been beneficial to teachers and has also improved their teaching. It also showed teachers were actively taking measures to mitigate potential harm through their own use. Recommendations are made to support educators going forward.

KEYWORDS

ChatGPT, chatbots, artificial intelligence (AI), primary education

Introduction

ChatGPT was released in November 2022 and by December had registered over 100 million users, which at the time, was the fastest recorded growth of any website in history (Torrey et al., 2023). ChatGPT can be described as a highly effective 'chatbot' that incorporates machine learning software called Generative Pre-trained Transformer (GPT) to generate human-like responses to a written prompt (Adiguzel et al., 2023). The term 'chatbot' stems from combining the words 'chat' for conversation, and 'bot' from robots. It simply means a computer programme that can simulate human conversation (Chocarro et al., 2023). Many in the field of education are concerned about how ChatGPT will encourage unethical student behaviour such as plagiarism and a lessening of critical thinking skills (Zhai, 2022). Further, some in the field are worried about the potential for students to

be exposed to harm through algorithmic output that exhibits bias or is blatantly incorrect (Tlili et al., 2023). Fears related to ChatGPT use quickly exploded through mainstream media leading to some US States and even some countries banning ChatGPT for educational use. At the same time however, educators themselves were anecdotally reporting using ChatGPT in new and unexpected ways. Some in the field promoted its appeal to teachers as a tool to personalise learning instruction and help create effective planning outcomes. Others simply argued it would massively reduce a teacher's workload (Opara et al., 2023). Missing from the equation, was a deep understanding of what educators themselves thought of this new and potentially 'transformative' technology.

This study aims to understand how ChatGPT has affected educator practice, as the literature pertaining to its use is both emergent and conflicted. The purpose of this study is to identify what personal beliefs and understandings educators held in relation to their own ChatGPT use and how this supported their personal and professional practice. For example, this researcher wanted to identify if educators are utilising the full range of affordances as prescribed in the literature, for example, in assessment practices and planning personalised learning outcomes. Concurrently, the researcher wanted to identify if practising teachers were conscious of the risks involved and how they were mitigating potential harm in their own use.

Literature review

ChatGPT affords the educator the ability to plan material and assess learning that is both curriculum specific and also adaptive to age and ability range. Sok and Heng (2023) argue that ChatGPT can enhance pedagogical practices by allowing educators to quickly produce lesson plans, presentations and rapidly evaluate student's work. Kasneci et al. (2023) and Torrey et al. (2023) suggest that ChatGPT can be used to create adaptive, personalised lessons in a variety of subjects, including language, research, and writing.

Zhai (2022) reported that ChatGPT can be used to create engaging and interactive learning experiences for a wide variety of learners, therefore affording educators the ability to personalise learning outcomes. According to Opara et al. (2023) and Torrey et al. (2023), ChatGPT can offer educators the ability to enable true one-to-one learning scenarios in which students' knowledge gaps are promptly addressed by customised instruction. Adiguzel et al. (2023) also point to the way in which ChatGPT can personalise learning experiences for disadvantaged learners, pointing to research suggesting AI chatbots could successfully meet the needs of dyslexic students.

It is also reported in the literature that ChatGPT can effectively strengthen teachers' assessment practices. Sok and Heng (2023) relate that ChatGPT affords educators the ability to gain real time feedback and make formative judgements in areas such as writing. This position is also taken by Arora (2021), who states, teachers are able to create assessment content that is directly linked to effective learning outcomes. This includes the rapid creation of quizzes, surveys, and assessment rubrics.

Opara et al. (2023) and Karthikeyan (2023) promote the idea that ChatGPT can automate mundane administrative tasks and free teachers up to spend more time with their students. Iqbal et al. (2023) also found teachers surveyed in their study gained increased personal fulfilment from their job. In their study, Adiguzel et al. (2023) found that teachers were enthusiastic about the amount of time they saved by using ChatGPT, as they could see their overall workload decreasing.

There is, however, consensus that ChatGPT use is marked by inherent risk. This is especially significant in education where privacy issues and bias may have severe consequences for the young and vulnerable. Nguyen et al. (2023) found that the stated policy of OpenAI (the overarching company behind ChatGPT) and the actual security of user data provided by ChatGPT itself were not consistent. Some in the field state that this should cause educators considerable concern. Students for example, should be able to use ChatGPT in the knowledge that their data would not be used for potential commercial gain (Kasneci et al., 2023). Further, Nguyen et al. (2023) argue educators could be liable if their student's data is harvested by ChatGPT without their consent. From this perspective, educators may need further assurances that their use of ChatGPT is safe and transparent in nature.

Researchers have also found algorithmic bias inbuilt into ChatGPT's data set which can tend to favour white, male American values over those of other genders and ethnicities (Tlili et al., 2023; Zhuo et al., 2023). Mhlanga (2023) affirms this position, arguing that ChatGPT may magnify existing prejudices in our society such as favouring the views of one ethnicity or gender over another. This view is reinforced by concerns within indigenous groups around data ownership and increasing calls for 'data sovereignty'. Data sovereignty is the right of Indigenous Peoples to own, control, access, and possess data that originates from them (Kukutai et al., 2020). Māori academics such as Te Kaka Keegan have, for example, strong concerns about how AI technologies may have negative consequences for Māori language sovereignty (Kirkby-McLeod, 2023).

Zhuo et al. (2023) argue that ChatGPT can be unreliable and its use must be tempered by human diligence and fact checking. Tlili et al. (2023) cite that ChatGPT can provide misleading or even completely inaccurate information known as 'hallucinations'. The literature unequivocally shows that ChatGPT can fabricate answers and provide outdated information. Both Iqbal et al. (2023) and Gupta et al. (2023) were able to show that educators were fearful of using ChatGPT with their students as they found the information provided was factually inaccurate and unreliable. Moreover, ChatGPT slowed down planning time for some teachers, who had to verify information and correct quiz answers (Gupta et al., 2023; Tlili et al., 2023).

Finally, it is argued, ChatGPT may also create an overreliance and dependence in students which may amplify laziness and reduce student curiosity as they conduct their own research (Adiguzel et al., 2023; Kasneci et al., 2023). Mhlanga (2023) contends that students may also lose the ability to distinguish fact from fiction, while Kasneci et al. (2023) argue students may lose interest and confidence in coming to their own conclusions and the use of their own critical thought.

Method

Both quantitative and qualitative data were collected and analysed using a mixed-methods approach. Primary teachers were chosen for the study due to the immediate proximity of the researcher in this area. There also appeared to be a gap in the literature about how teachers were using ChatGPT and how they perceived their own use. The participants answered a short online survey on Google Forms. These participants were recruited primarily from Twitter using the hashtag #edchatNZ, and from the Facebook group 'NZ Teachers (Primary)'. Sixty-one primary school educators answered the survey, 58 of whom were practising teachers. There were also three respondents involved in education but not directly in the classroom.

The online survey through Google Forms was shared in mid-August 2023. Likert scale data was gathered in order to quickly gain access to respondents' attitudes and beliefs. This could be measured in a reliable and quantifiable way and data compared. The survey data was collated automatically on a Google Spreadsheet. Respondents were also asked three written form questions that could be used for qualitative analysis to gain deeper insights.

The data were analysed using a mixed methods analysis. Quantitative data from the Likert scale questions were analysed by converting the raw data in Google Spreadsheets to find percentages and statistical frequency. The use of quantitative data allowed for objective surveying of the data, which enabled the researcher to identify patterns as well as compare trends amongst groups. Qualitative responses were coded using thematic analysis. Inductive coding was used to ensure no pre-existing conclusions or 'hunches' were reached by the researcher. Codes were analysed to find patterns or emerging trends from the written responses using a thematic map to show how the emerging trends connected to each other. The research was granted ethics approval by Massey University application OM3 23/01.

Findings

The results are presented in three parts. Firstly, educators found ChatGPT to be largely beneficial to their practice. Secondly, educators reported strong ethical concerns related to their own use. Thirdly, educators described an awareness of their own professional responsibility to their ākonga and the need for a critically conscious use of ChatGPT. Of interest, demographic analysis revealed that 63.9% of participants have been teaching for more than 12 years. Further, 62.3% of the respondents rated themselves as "experienced users of technologies". This indicates that these views are framed by educator experience, where the introduction of new technologies and pedagogies have been embedded into their existing practices and as such make the findings especially informative.

Educators reported clearly in the survey that ChatGPT is a tool that saves them time, is useful for planning, finding ideas and reducing their overall workload. When asked about the beneficial affordances of ChatGPT, 62.3% agreed or strongly agreed that using ChatGPT had been beneficial to their practice (see Figure 1). Further, 42.6% of participants agreed or strongly agreed that ChatGPT had improved their teaching (see Figure 1).

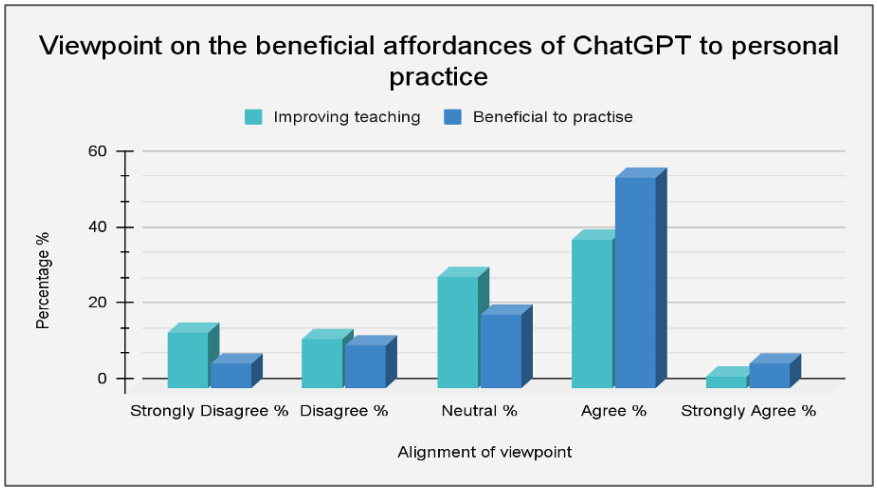

Figure 1. Viewpoint on the beneficial affordances of ChatGPT to personal practice

When asked more specifically about the affordances ChatGPT offers teachers, there was consensus that ChatGPT is a tool that is useful for planning processes. Seventy percent were in agreement that ChatGPT was a useful tool for finding ideas on a topic before they launched into planning (see Figure 2). Further, 57.3% agreed that ChatGPT was useful during the planning process (see Figure 2). Many respondents agreed that their overall planning time was reduced due to the speed with which ChatGPT could generate content. Respondent 59 (R59) wrote, "with specific and clear prompts, ChatGPT can reduce my planning time, e.g. in creating reading passages and comprehension questions and lesson plan outlines". R57 wrote that ChatGPT allowed them to "quickly develop content based on needs and curriculum demands. [I] can write and refine lesson plans/sequences much more quickly than alone. [By] working WITH ChatGPT". Educators reported benefit from the speed and also, the detail found in the planning process. R43 wrote, "I've found it incredibly useful for generating ideas! Once I have a list of ideas, I take the one I like most and get it to expand on it. It's been amazing for planning inquiry and writing. My planning is more detailed and therefore, I've become a better teacher!"

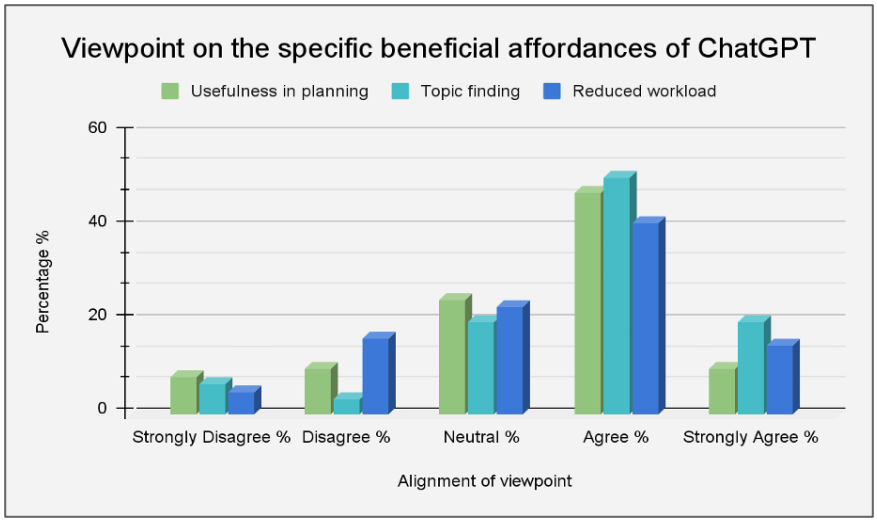

Figure 2. Viewpoint on the specific beneficial affordances of ChatGPT

Educators were in agreement that ChatGPT automated many time consuming administrative tasks which freed them up to spend more time teaching and planning. Fifty-five percent of respondents reported that ChatGPT had reduced their overall workload (see Figure 2). One common reason stated was ChatGPT had helped reduce stress levels amongst day to day tasks. R56 wrote that ChatGPT "enab[les] me to spend less time on my planning so I am less stressed – therefore improving my teaching". Another common explanation was in the reduced time spent on administration tasks such as email, and other communication. R33 wrote, "I see ChatGPT firstly as the PA/EA most others in management have. Teachers are all managers of people, and have a lot of admin that goes with that … this is where I use ChatGPT most … as it cuts admin tasks down hugely".

Table 1 is provided to illustrate how educators' viewpoints aligned with a diverse range of affordances. Clearly highlighted are some of the strongest points of consensus such as disagreement that ChatGPT is a good way to identify need. Further, it shows agreement that ChatGPT is perceived as a good way to find ideas on a topic, and for creating writing exemplars.

Table 1. Alignment of educator viewpoint on ChatGPT's affordances

Area of focus	Strongly Disagree %	Disagree %	Neutral %	Agree %	Strongly Agree %
Usefulness in planning	8.2	9.8	24.6	**47.5**	9.8
Topic finding	6.6	3.3	19.7	**50.8**	19.7
Reduced workload	4.9	16.4	23	**41**	14.8
Assessment	14.8	14.8	**50.8**	19.7	0
Report writing	8.2	14.8	**41**	29.5	6.6
Parent communications	16.4	29.5	**39.3**	8.2	6.6
Writing exemplars	9.8	3.3	18	**49.2**	19.7
Identifying need	27.9	**29.5**	26.2	14.8	1.6
Teaching in new ways	9.8	19.7	31.1	**32.8**	6.6
Personalising learning	11.5	16.4	32.8	**34.4**	4.9
Improving teaching	14.8	13.1	29.5	**39.3**	3.3
Beneficial to practice	6.6	11.5	19.7	**55.7**	6.6

Further evidence suggests educators use a wide range of affordances selected to support their teaching practices. During qualitative analysis, five themes emerged: "content creation", "assistance with administration", "time saving", "idea generation and inspiration", and "support for a diverse range of teaching needs". The final theme proved to be the most commonly coded theme found in 41.8% of longer form answers. Educators reported that ChatGPT could help them differentiate learning tasks, quizzes and break learning into easy-to-digest chunks for learners. R12 wrote that ChatGPT was beneficial in "breaking down learning, assisting in differentiation of text and questions,

exemplars". R61 reinforced this view, writing that ChatGPT was beneficial for "structuring tricky topics to share with parents, [and] quickly creating differentiated reading lessons". 68.9% of respondents shared that ChatGPT was a useful way to create differentiated writing exemplars for their students. A further 39.3% of respondents agreed that ChatGPT afforded them the ability to personalise learning tasks amongst their ākonga.

Educators reported strong ethical concerns about ChatGPT's influence in education and in their own practice. A major factor reported was the reliability of information presented by ChatGPT. 68.9% of respondents either "agreed" or "strongly agreed" that the reliability of information was a concern for them in their use of ChatGPT. This sentiment was reinforced during thematic analysis in the second longer form question, "would you care to elaborate on any of your concerns about ChatGPT in education?" 33% of answers aligned with the theme of ethical concerns such as "reliability". The third question asked respondents more personally, "do you have concerns related to your own use of ChatGPT in your practice?" 26% of responses were coded in alignment with the theme "quality control". This coded theme echoed the thoughts of 15% of educators who elaborated on personal concern that ChatGPT's output was inconsistent and needed rigorous cross checking by educators before it was used in teaching materials. R36 wrote, "I have concerns about the reliability and accuracy of responses. While it can be a valuable tool for planning, there is a potential challenge in ensuring that the information provided is always trustworthy". Figure 3 is provided to highlight visually how the participants' viewpoints align with the negative implications of ChatGPT use.

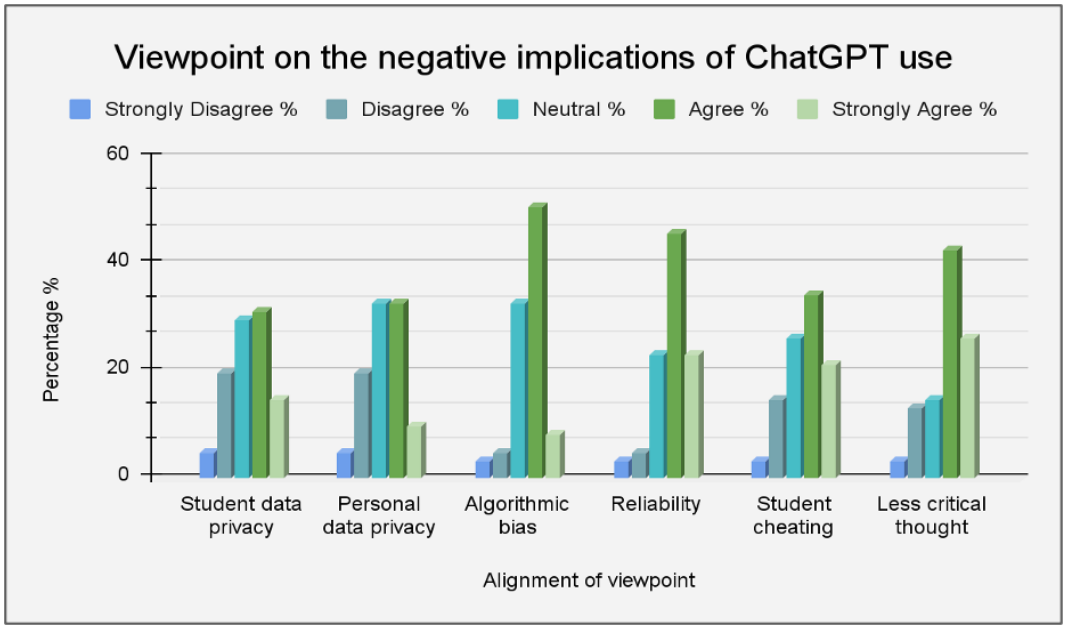

Figure 3. Viewpoint on the negative implications of ChatGPT use

68.8% of respondents were in agreement that students could become overly reliant on ChatGPT at the cost of critical thought and student creativity. This view was reflected through thematic analysis of the longer form answers. When respondents were asked about their specific concerns of use, 33.3% were coded as "impact on student thinking and creativity". Educators were concerned ChatGPT would create "lazy" habits amongst students who could outsource their thinking. One

wrote, “I am concerned that it will be used as a shortcut by some students … I worry that it will remove the need for students to think critically” (R26). R60 wrote, “I am definitely concerned that students will use it indiscriminately rather than make informed decisions about when it is beneficial and when it is harmful to their own development”. R39 reinforced this idea by writing, “my biggest concern is over reliance on ChatGPT by students to do the critical thinking for them. There is a difference between someone with well developed critical thinking skills using ChatGPT for critical reflection and a student trying to bypass learning the skill by using ChatGPT”.

Algorithmic bias was a concern for 59% of surveyed educators. This response was not as strongly reflected in the longer form answers however, with the theme of “bias” only featuring in a total of three longer form answers. R45 wrote powerfully however, about their concerns over cultural appropriation, bias and reinforcing the aforementioned concerns around data sovereignty. They wrote “[Māori] histories are predominantly orally passed on and much information about my people is not online. I’m concerned about cultural appropriation e.g. people writing songs and karakia in Māori with no understanding of what they are doing. ChatGPT provides general info but not iwi specific info. If you’re not Māori you could really do some damage … using this tool … whose knowledge is seen as correct?”

Students using ChatGPT to cheat was reported as a concern by 55.7% educators. During thematic analysis a number of comments reflected that cheating was not a strong concern for them in their immediate primary school environment, however, they were fearful of the impact it may have for secondary teachers. Finally, educators reported that privacy issues were a concern, however, this was the lowest ranking issue. 42.6% rated their own personal data privacy as an issue, with a slightly higher 45.9% concerned about student privacy through ChatGPT use.

Thematic analysis of the longer form answers revealed an unexpected outcome. Namely, there was consensus amongst educators who felt a deep seated responsibility to use ChatGPT in ways that supported students to be critical users of ChatGPT and for students to be prevented from harm. At the forefront of this thinking was the idea that educators should explicitly teach students the associated benefits and consequences as students may not have a full understanding of what ChatGPT does, how it was designed and what harm it may cause. One educator wrote, “I am definitely concerned that students will use it indiscriminately rather than make informed decisions about when it is beneficial and when it is harmful to their own development” (R60). Reinforcing this opinion, one educator wrote, “I am worried that students … will be using ChatGPT without really understanding what it is and how it works, so they will not be the most critical users. I feel we need to teach more about AI and generally how to work with information” (R1b).

These sentiments were reinforced in the theme “educational responsibility”, coded for 40% of the responses to the long form question about educational concerns. Educators expressed an awareness of their own role in introducing AI technologies responsibly in a fast changing landscape. R50 expressed this concern, “how can we as educators prepare students for a world where AI is going to feature heavily, how do we balance its use while still maintaining students’ own creativity and critical thinking?” Multiple educators expressed concern that educators needed to be professional and considered in their own practices when using ChatGPT. 43.4% of longer form answers were coded as

"professionalism". Ideas expressed in this theme reinforced a view that educators needed to critically assess ChatGPT's output and be able to justify their own use. One respondent wrote, "we need to explicitly teach how to use critical thinking, evaluation for students. As teachers we need to be able to justify our use, consider ethics and check accuracy ourselves" (R12).

Further, Likert scale data reinforced this view that a "professional educator" should retain a human touch in the classroom. Respondents for example, were strongly opposed to the use of ChatGPT in assessment and communication with families. 82% reported they had never used ChatGPT for assessment practices and 73.8% had never used it for communications. 29.6% of respondents disagreed that ChatGPT was beneficial for assessment practices while 50.8% remained neutral. Many expressed the viewpoint that certain practices in education should sit entirely with the educator alone. R55 wrote, "I believe we should 100% be authors of report comments, not AI. I can get lazy and rely on ChatGPT exemplars, rather than create my own. I believe my own work is superior". A sentiment of "irresponsibility" and "laziness" was found in many comments, such as one respondent who was concerned "that teachers outsource their report writing … as a parent I would be horrified at this happening but I see many teachers extolling ChatGPT as great for this" (R40). Stigma and professional tension attached to use can be seen reflected through one teacher who wrote "I feel judged for using it. It's seen as lazy or cheating, even though really it is far more efficient … sometimes, I can be lazy in terms of checking [if the] correct information is presented, so that is something for me to consider" (R7).

Table 2. Frequency of ChatGPT use

Area of focus	Never %	Once a month %	Once a week %	2-4 times a week %	Daily %
Planning support	18	**32.8**	27.9	21.3	0
Finding ideas on a topic	24.6	**27.9**	**27.9**	18	1.6
Assessment and grading	**82**	11.5	4.9	1.6	0
Writing exemplars	**32.8**	31.1	23	13.1	0
Report writing	47.5	**49.2**	3.3	0	0
Language translation	**85.2**	8.2	1.6	4.9	0
Parent communications	**73.8**	21.3	3.3	1.6	0
With students	**75.4**	14.8	8.2	1.6	0

Table 2 is provided to show the frequency of ChatGPT use by the respondents. It reveals that very few educators are using ChatGPT for assessment practices, parent communications, language translation or with their students. Analysis revealed that 85.2% have never used ChatGPT for language translation, while 82% have never used it for assessment or grading. 73.8% have never used it for communications with parents while 75.4% have not used it with their students. The table also

shows that use is infrequent across all affordances. The most used affordance was planning support used by 21.3% of educators 2-4 times a week.

Discussion

The study revealed that educators perceive ChatGPT to be a beneficial tool to support a wide range of very specific teaching needs. The study also points to how educators have seen their workload reducing because of ChatGPT and how they see specific benefit to their own practices as a result. The responses also indicate that while ChatGPT presents significant potential for risk, educators are critically aware of their professional responsibility to mitigate harm.

The survey results indicate that educators are in agreement that ChatGPT serves a large range of teaching needs and it is beneficial to their practice. However, it has not become a tool that educators are reliant upon, rather it has become a useful aide in their planning practices. As such, educators are leveraging its current potential to suit their own diverse needs in their practice. The survey found positive attitudes towards ChatGPT's usefulness in their own practice. This would help to explain the agreement upon the usefulness of ChatGPT to quickly generate differentiated writing exemplars and generate new ideas on a topic. Respondents talked enthusiastically about the ease of use, how useful it was to their planning practices and how ChatGPT reduced their stress levels and overall workload. Granić and Marangunić (2019) describe that a technology's 'ease of use' will increase the relational satisfaction of the user. The survey results are in alignment with this argument (see Figure 1), as it was overwhelmingly perceived to be a beneficial tool to aid personal practice. Kasneci et al. (2023) observed that teachers would appreciate the ease in which they could plan personalised lessons for a wide range of needs. This is consistent with Torrey et al. (2023), who suggest educators could use ChatGPT to quickly create levelled plans, levelled content and ideas on how to support a wide range of learning needs including dyslexia.

Granić and Marangunić (2019) argue that a teachers' personal beliefs and attitude towards any technology can have a significant impact on their willingness to use it. This may also help explain why so many educators felt negatively towards ChatGPT as a tool for assessment practices, as seen in the longer form answers. This finding is consistent with Ottenbreit-Leftwich et al. (2010), who describe how our personal belief systems, existing pedagogies and even unconscious bias are integral to our technology use. This could signal, as Kim et al. (2020) found, that teachers are skeptical of AI's effectiveness in their own practice when their value system does not align with the affordances of the technology. In this instance, the evidence suggests, educators perceive their own skill set in assessing student learning is more beneficial when placed in the hands of a human.

Further evidence from the study indicates that ChatGPT has proved effective in reducing the workload of educators. The evidence suggests that educators were able to reduce their workload through improved planning outcomes, topic finding, personalising learning and, for over a third, in improved communications and administration tasks such as report writing. Opara et al. (2023) suggest that teachers are overburdened with administrative tasks. They argue that educators will appreciate how ChatGPT can reduce their workload and feel empowered to connect in more

personal ways through the automation of the mundane. Farrokhnia et al. (2023) is in agreement, observing that educators would appreciate the automation of tasks such as emails, planning and rubric formation, freeing them to spend more time connecting with their learners.

These findings played out in the survey, where a majority of educators responded that their workload had reduced through ChatGPT use. Some noted their personal stress levels were reduced with direct and positive impact on their personal teaching practices. This finding is new to the literature and one that was perhaps surprising to the researcher. While the beneficial affordances of ChatGPT are numerous and well supported by the literature, the concept of improved teaching practices was unforeseen and is potentially significant. Many respondents directly referenced how their teaching practices had improved as a result of ChatGPT use. The common themes were "time saving", "reduced stress", and "idea generation". These findings are consistent with authors such as Zhai (2022), Cotton et al. (2023), and Baidoo-Anu and Owusu Ansah (2023), who all argue that ChatGPT has revolutionised the educational landscape and that teachers will quickly adapt to using these new practices. One finding that aligns with this reasoning is the large number of educators who agreed that ChatGPT had allowed them to teach in new ways. Mhlanga (2023) references this line of thinking, arguing that ChatGPT was a transformative tool that had the "potential to bring about a sea change in the field of education" (p. 1). There is not a complete consensus however, as while a majority of respondents agreed that ChatGPT was beneficial to their own practice, and over two fifths agreed it had improved their teaching, nearly one third of respondents rated themselves as 'neutral'. This may perhaps indicate that educators have not had long enough time using ChatGPT to be able to reflect fully on how it may or may not have transformed their practice.

The survey indicates that teachers are critically conscious of the risks associated with ChatGPT use and are taking steps to mitigate potential harm. Specifically, educators were concerned about algorithmic bias, output reliability, weakened critical thinking skills amongst students and student cheating. The results showed that specific ethical concerns such as algorithmic bias, as reported in the literature, are a large concern for educators. Ferrara's (2023) study found algorithmic bias can be common practice in generative large language AI models such as ChatGPT. This is in part due to the vast tracts of data the model was trained on which can still seep into the data set, even with preventative measures. This in effect means that educators are correct to be concerned about how they introduce learning materials to their students, as there is a real chance they may be biased against a gender, ethnicity or culture (Baidoo-Anu & Owusu Ansah, 2023).

The ethical concerns of educators aligned with weakening critical thinking skills mirror Mhlanga (2023), who argues students need to be explicitly taught to challenge the output provided by ChatGPT. Many longer form answers reflected this argument, suggesting their students were at risk of accepting every output if they were not explicitly taught about the limitations of AI. This finding supports the reasoning of many respondents who took critical thinking skills one step further, arguing students needed to be provided with the opportunity to be technologically prepared for an unknowable future. Akgun and Greenhow (2022) share these sentiments, arguing that students should be presented with opportunities to seek out biased and incorrect outputs by their teachers as a way to learn about the limitations of AI chatbots. Additionally, many survey respondents were concerned about the reliability of information provided by ChatGPT. These concerns are validated by

Zhuo et al. (2023), who reports that ChatGPT outputs can be prone to both disinformation and misinformation. In this sense, the respondents showed an awareness that their use and that of their students could be harmful without careful implementation.

The final finding explores the theme of the individual's personal responsibility to cast a critically conscious eye over their own use. The data showed that the respondents clearly had thought about their own use and were aware of the risks. They saw ChatGPT as a tool that fulfilled specific tasks and they saw strong benefit in specific affordance, but nothing more. Kasneci et al. (2023) describes the importance of educators using AI chatbots as a supplement to their teaching, not as a replacement. This is in alignment with Farrokhnia et al. (2023), who posit the need for educators to develop a critically conscious relationship with AI technologies by utilising them as a tool for students to identify and solve real-life problems, rather than merely using them to generate knowledge. The data also indicates that there is a professional tension amongst educators in this fast evolving space. This played out in two ways. The first was between educators who felt judged for their use of ChatGPT as a form of 'laziness', and those who fervently believed ChatGPT should never be used for tasks such as report writing as this was "lazy and irresponsible". This suggests that the respondents held an implied relationship with what a good teacher "does" and "does not" do. The second tension reflects the observations of Torrey et al. (2023) and Nguyen et al. (2022), who describe growing inequality amongst students who do not have access to specific technologies, a concept called the 'digital divide'. Some respondents were concerned about schools that had blocked access to ChatGPT. They identified their own desire to upskill their students in current technological practices, thus preventing them from being 'left behind'.

Conclusion

The study has revealed that ChatGPT use can afford very specific benefits to educators. However, the known risks associated with usage demand that educators openly and frankly reflect upon their own use and discuss their use with colleagues and potentially with whānau. Such openness will ensure that future use is framed by critical awareness and guided by proven pedagogy that safeguards the rights and needs of the learner. This study has specifically confirmed that a majority of participating educators found the affordances of ChatGPT beneficial to their practice. The study also suggests educators should be cautious in their own use and continue to critically analyse the risks involved. For example, whānau and students require transparency should ChatGPT be used for assessment practices or reporting. As such, professional development that targets responsible and ethical AI use should become a priority for educators and the wider educational community in an attempt to mitigate potential harm (Iqbal et al., 2023; Tlili et al., 2023).

The study also confirms that students themselves require explicit opportunities to explore, use and find the limitations of the technology. Further, future professional development should also promote how educators can utilise the beneficial affordances of AI to inform their planning practices, meet a diversity of teaching needs and reduce their workload. Explicit professional development would help to dampen down potential technological idolatry and misuse. Currently, the majority of professional development associated with AI is globally generic and generated on individual social media

accounts, rather than from recognised educational institutions. This study confirms it is imperative that New Zealand educators require professional development that is in a New Zealand context and is curriculum specific. New Zealand educators require more than the very narrow and cautious guidelines as published by the Ministry of Education (2023).

There are a number of limitations related to this study. Firstly, it is easy to overstate use in schools based on this data set alone, as the number of respondents is relatively small (61). Thus, it is hard to make generalisations about New Zealand primary teachers or even more broadly, educators as a whole. Finally, the summative aspect of the survey meant the researcher was unable to ask follow up questions to dig deeper into the data. This has proved especially pertinent to the finding of 'improved teaching practices' as there is a specific lack of qualitative data to back up this finding. It is clear that further research is needed into what specific affordances teachers see as improving their practice. How is ChatGPT for example, specifically improving teaching and learning? Another research pathway could consider the potential implications AI chatbots may have on indigenous rights. Notably, this research targeted only ChatGPT and although broadly its use applies to chatbots in a wider sense, research into newly released AI chatbots such as Bard, Bing and Llama 2 are recommended. Finally, the AI space is moving extraordinarily fast. Research in this area must adapt with the change in use that is likely to come.

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