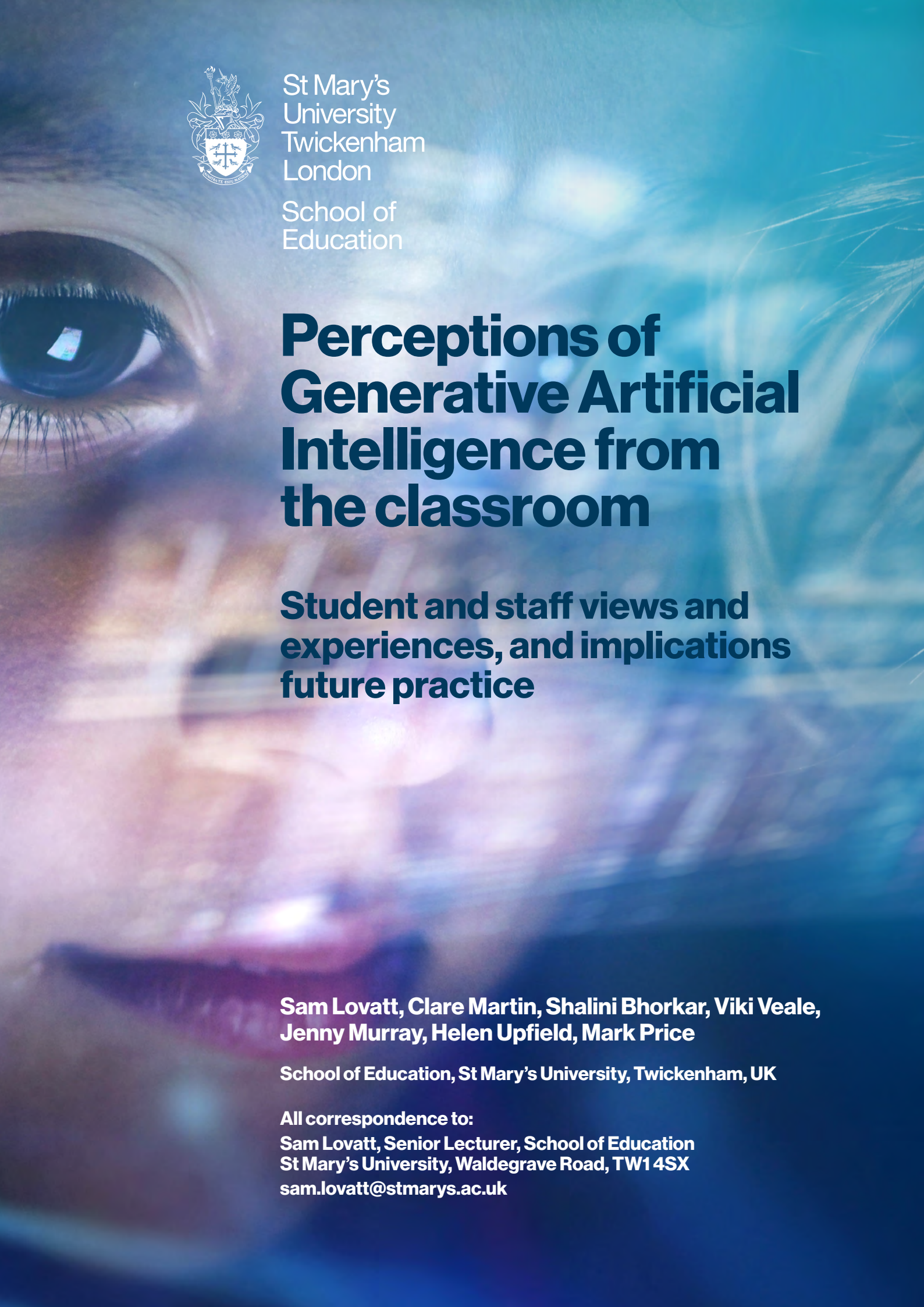

St Mary's University Twickenham London

School of Education

Perceptions of Generative Artificial Intelligence from the classroom

Student and staff views and experiences, and implications future practice

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Acknowledgements

Thank you to the schools who partook in the research and consented to us collecting data from their community. Specifically, a huge thanks to all the students and teachers who took the time to complete our questionnaire.

This report is produced as part of a range of initiatives arising from the work of St Mary's School of Education's Generative AI Steering Group, and we thank all those colleagues who have contributed to developing our thinking with regard to the issue of generative artificial intelligence in the classroom.

Finally, thank you to the Marketing team at St Mary's University, who supported in the production of this report.

Contents

Foreword

St Mary's University's School of Education is committed to generating new knowledge in how children and young people can learn even better in their schools and educational settings. Sharing successful pedagogical practices is at the core of teacher education and not least over the recent few years St Mary's has been examining how educators and teachers work with the affordances and challenges of generative artificial intelligence (AI). While recognising the rapidly evolving world of AI, and the emergence of national strategy and guidance, this research-led report shares how the School of Education's Partnership schools and their pupils experience the use of generative AI and how this has proved both a challenge and opportunity to learning more and doing more. This report provides a local benchmark of what it to learn in a world in which technology and generative learning can appear to outstrip the known knowns of what it is to be a teacher, yet it is optimistic for what how we can all teach with generative AI.

Dr Jane Chambers
Associate Professor
Head of the School of Education

Executive summary

This research explores the perceptions of generative artificial intelligence from the classroom. Teachers and students from Year 5, Year 9 and Year 12 completed an online questionnaire asking them about their uses of tools, such as ChatGPT, Microsoft Copilot, Google Gemini or My Snapchat AI, as well as what they see as the challenges and positives to these tools to support their learning. Over 250 participants from six schools completed the questionnaire.

Analysis of the findings suggests that children from Year 5 and upwards are engaging with these tools both for their learning and tasks outside of schools. There was a progression in understanding and an increased sophistication in use as the children got older, from knowing that the tools can help in Year 5, to knowledge search in Year 9 and testing for understanding in Year 12. Teachers used the tools for a range of reasons, such as generating lesson ideas, supporting them with administrative tasks and to develop their understanding of the tools.

All groups of participants discussed similar positives and challenges to using the tools to support learning. Applications varied from student group to teacher; students focused on using the tools to support understanding, whereas teachers largely use the tools to support planning and lesson idea generation. Finally, across all groups of participants there was a call for further learning in this field to ensure that the use of generative artificial intelligence is safe, ethical and efficient. This call was strongest from the teacher participants.

Although this was a small-scale study completed with schools partnered with St Mary's University, the findings have led to the following wider considerations and recommendations arising from the research:

- The need to invest in staff knowledge and understanding in the field of generative artificial intelligence, so they feel equipped to teach and discuss this with their students and peers.
- The need to consider the place of generative artificial intelligence in the curriculum so that students are taught how to ethically utilise the tools and consider their roll in future industry.
- The importance of promoting consistency in schools in discussing generative artificial intelligence amongst staff, to ensure key messages are communicated to students.

1. Introduction and context

The impact that free-to-use generative AI (GenAI) tools can have on learning and the process of learning is potentially significant (Felix and Webb, 2024). Although the notion of artificial intelligence has existed for some time and has been present in education (Holmes and Tuomi, 2022), this report exclusively considers GenAI tools, which have been defined as tools that generate new content, such as images or text, to a response given by a user (Fengchun and Holmes, 2023).

Tools such as ChatGPT, Microsoft Copilot, Google Gemini or My Snapchat AI can be used by children and teachers to support their learning, complete tasks or even produce work that can be passed off as their own (DfE, 2023b). The recent Department for Education (2023a) policy regarding the use of these tools suggests that there is the potential to transform teacher workload and impact on teacher efficiency. The DfE policy also acknowledges the lack of teacher knowledge in this area but is firm with its suggestion that these tools should form part of the school curriculum, with teachers being encouraged to engage with them. Hence, considerations for the use of these tools should extend beyond teacher workload and personalised learning for children, as there are wider ethical considerations that should be discussed (Yan et.al, 2023).

Recent research from Ofcom (2023) finds that children as young as seven are engaging with these tools regularly. However, the true extent of use of these tools in schools and for education purposes is unknown. Students' perspectives have been overlooked within research and policy from the DfE and this research seeks to address that.

This project report has been specifically produced with both our Partnership schools and our St Mary's colleagues in mind, and sets out to present and explore data on how children from across their education journey and the teachers that teach them are currently using these tools to support learning and their practice respectively.

2. Method

Young people and teachers took part in a survey from across selected School of Education partner schools, academies and colleges. Participants were from primary (including Year 5 children), secondary and Sixth Form level (including those students in Year 9 and Year 12).

Both teacher and student surveys were undertaken online, as we worked in liaison with key school/academy leaders to reach staff, students (and their parents) in selected schools and academies.

In total we worked with six schools and academies, reaching a total of 214 children and young people and 60 teachers and other key staff.

The survey asked teachers to consider:

- their experiences of GenAI in school;
- their thoughts on the affordances/opportunities and risks/challenges of GenAI for teaching;
- their thoughts on the affordances and challenges of GenAI for pupils;
- their wider experience/engagement with GenAI beyond school;
- their thoughts/suggestions for GenAI and teacher training and development in the future.

Children and young people were asked to comment on:

- their experiences of using GenAI in school;
- their thoughts on the affordances/opportunities and risks/challenges of GenAI for learning;
- their thoughts on the affordances and possible opportunities, risks and challenges of GenAI for pupils in school;
- their wider experience and engagement with GenAI beyond school;
- what improvements and developments they might see for teachers' use of GenAI in school.

An inductive approach to data analysis was employed, looking for emerging themes from across survey responses from all those completing the questionnaire.

3. Findings

3.1 Overview

This section presents findings from both the student and teacher questionnaire. The students' responses are explored related to their year of study, Year 5, Year 9 and Year 12. All sections explore the themes of positive positioning, potential challenges and the next steps. These three themes are then discussed in relation to the findings from the teacher questionnaire.

3.2 Student responses

Year 5 responses

39 students from Year 5 completed the questionnaire. A lack of experience in relation to GenAI being used in learning at school was evident, as 71% stated they had not used GenAI tools and a further 10% of respondents did not know if they had engaged with GenAI in school. This theme of uncertainty continued throughout responses to all questions with several participants responding '*I don't know*', or interestingly, '*I don't know, I'm in Year 5*', to all questions posed. Similarly, 55% of respondents stated that they had not used or did not know how they had used GenAI out of school.

Themes emerged within the small group of respondents who identified an awareness of advantages for GenAI in school learning. These included opportunities to extend, broaden and speed up the learning process and were expressed through statements such as '*It will help us if we're stuck*.' and '*You can find out more things about many things*.' In relation to out of school opportunities afforded by AI, many respondents cited gaming and help with homework as key benefits. Three participants also suggested creative opportunities including photo editing and baking.

A significant reoccurring theme throughout the Year 5 responses related to risk and danger of online activity. Mentions of hacking, online bullying and seeing things that were not age appropriate were mentioned throughout the questionnaire. It is noteworthy that the language used by Year 5 respondents here aligned with terms commonly used in taught computing and online safety lessons.

Year 9 responses

Overall, 127 students from Year 9 completed the questionnaire. Their responses suggested that they are more likely to use GenAI tools to assist with tasks not associated with their learning. A third of students suggested that they use GenAI tools to support them with their learning. Of these, 30% of them further justified their use of the software. Most justifications were referring to receiving permission or as a last result, such as '*Yes for homework, with permission'*, or '*I only use AI when I am really struggling with something'* (*see Diagram 1*).

When asked to expand on the advantages of using GenAI tools, the Year 9 participants overwhelmingly saw the tools as helpful aid for their learning. 37% of responses referenced the tools being helpful at explaining concepts to them, whilst less than 10% of the responses referred to homework and the tool completing their homework for them. Students also referenced the efficiency of using the tools, with14% commenting on the ease of using them to support finding out information compared to a Google search, as it presents the findings in a written response. 10% of the responses demonstrated a more creative and sophisticated use of the tool.

For example:

> **'Giving a more comprehensive overview of a topic. Helping to create art and songs for those who can't make it themselves.'**

When asked about the challenges, Year 9 students warned that the overuse of the tools could distract from the learning process and hinder them becoming an effective learner. Students also demonstrated that they are not looking beyond the use of these tools for their learning and did not discuss the possible impact of these tools in their future careers or professions.

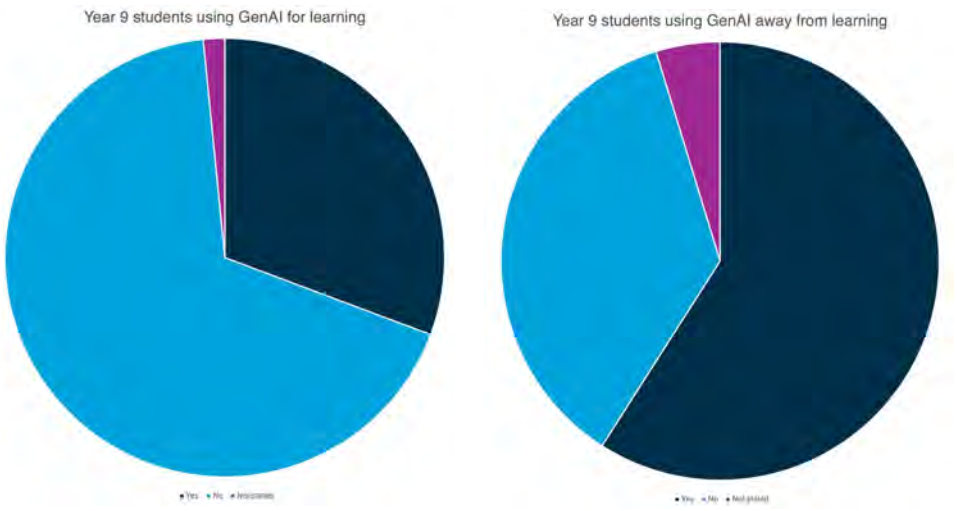

Diagram 1: Year 9 participant's use of the tools for learning and away from learning.

> **‘It can give answers too quickly without showing the “thought process” on how to get to an answer.’**

Finally, when asked about how these tools could be further used in schools, participants asked for more support from their teachers about how to use the tools ethically and proficiently. Two responses also refer to teachers modelling these tools ‘live’ in front of them.

Year 12 responses

53 Year 12 learners completed the questionnaire. Their responses demonstrated the greatest overall familiarity with GenAI with 61% suggesting that they use it to help them with their learning within school or college, and 59% stating they used GenAI at home. When asked about the use of GenAI within the classroom, 37% of the students who selected ‘yes’ when questioned about AI use, provided a further qualifier, clarification or description to demonstrate that they were able to use GenAI responsibly. This resonates with the responses of students in Year 9 and demonstrates that as children develop a more sophisticated understanding of GenAI within their studies, they are careful to position themselves as aware of both the affordances and dangers of these new tools (*see Diagram 2*).

The Year 12 group expressed the main advantages of GenAI in terms of key themes of clarification, summary, revision and structure. These responses suggest a recognition of GenAI’s potential to help them comprehend and revise, but frequently this was positioned as a starting, rather than end point. This was also reflected in the theme of creativity, with GenAI being viewed as something that inspires learners at the outset of a piece of work. Often this was coupled with an acknowledgement of the ease and/or speed of AI:

> **‘It saves you time during research and helps me get ideas to start my work. It is not very useful to write a whole essay as it isn’t fully accurate.’**

Whilst the responses suggested that this year group do use of GenAI to access knowledge content, this was often pre-modified with word choices such as ‘specific’, ‘detailed’, or ‘certain’. Many responses suggest that this age-group view and use the actual content value of GenAI in quite careful and precise ways.

When considering the risks GenAI poses, the strongest themes emerging from this were around reliance and a loss of the quality of learning itself. Responses in this theme included expressions of ‘laziness’, ‘demotivation’, ‘limits creativity’ as risks associated with an overreliance or dependency on AI. Also, this group conveyed a strong sense that using GenAI to fully complete whole pieces of work is inauthentic and ‘*not really learning*’.

In terms of the affordances of GenAI to help teachers, there were many responses which suggested the generative value of GenAI in terms of how teachers could use it to create a range of resources. Overall, however, the answers from learners in this year group suggest that there is a much higher value placed on the learning that takes place between people rather than machines:

> **‘Schools as of now do not need to use AI because teaching using a real human will be able to explain the lesson in different ways with much better examples.’**

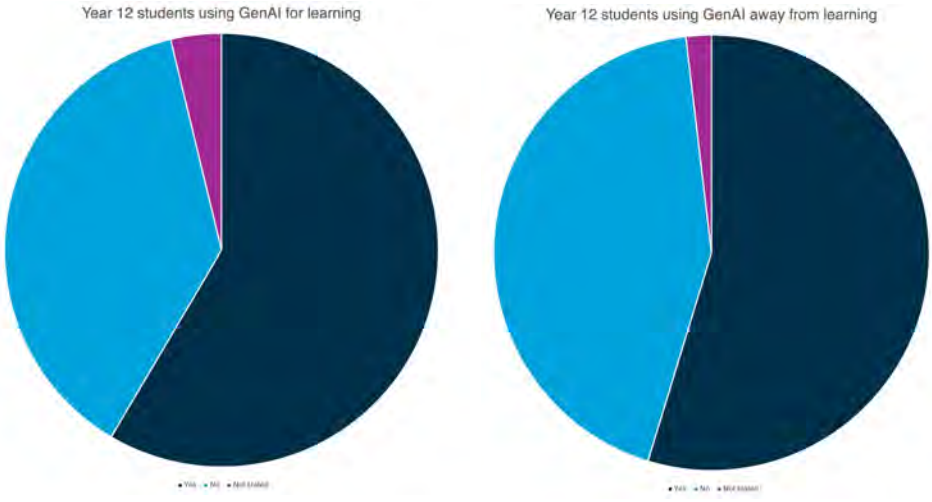

Diagram 2: Year 12 participant’s use of the tools for learning and away from learning.

3.3 Teacher responses

Analysis was undertaken by school phase. Responses from secondary teachers have been combined as the majority of teachers worked across different key stages. Overall trends do not show significant differences between school phase/age groups taught. Rather, differences appear to reflect the different demands of roles and the nature of pupil work.

Secondary teachers reported more experience of using GenAI. Of all those who declared they had used GenAI for work-related activities, there was an equal divide between activities that aid administration and reduce workload and those that are rooted in pedagogic activity (*see Diagram 3*).

Positive influence of the tools

Teachers across all phases reported 'time saving' and 'reducing workload' as a key benefit of AI. The potential for timesaving related mostly to the administrative elements of the teacher role (framing emails, writing reports etc) rather than the more situational elements – those that required an understanding of the pupil and their learning experience, or of the topic and curriculum and the learning situation. Nevertheless, secondary teachers, in particular, highlighted the usefulness in providing differentiated teaching-learning, fact-checking and in providing starting points for discussions.

Responses suggest that teachers see GenAI as another tool to do their current work better, rather than recognising the potential of GenAI to open up new ways of working. A common view expressed was that the technology is not yet able to assist with the elements of the job where teachers would find this most useful. A further common theme was that respondents did not yet know how to use GenAI effectively, even that GenAI might use more time than it saved.

> **'If they could mark essays using a mark scheme it would save hours.'**
> **(Secondary teacher)**

> **'It is not good enough to reduce workload. It still requires playing with the correct prompt, then proof reading and making it make sense - which sometimes takes more time than just doing it yourself.'**
> **(Secondary teacher)**

There were fewer comments on where teachers saw a positive role of GenAI for students. These were rooted in enrichment, expansion and adaptive teaching. GenAI was considered beneficial for scaffolding, promoting independent learning and for giving feedback-in-the-moment. These could align with ideas expressed regarding improving engagement and attitude to learning. Several teachers also alluded to the ability of GenAI to create lesson resources beyond a teacher's skill or time constraints (e.g. bespoke images, simplifying text by reading age). The response of one secondary teacher was particularly noteworthy in terms of how GenAI might empower and render agency to students, which could potentially necessitate systemic changes:

> **'It's going to make life much easier in the future. I also believe it will empower students to 'beat the system' which will mean that education has to make fundamental changes. I believe it really empowers the students and gives them agency that they've not had before.'**
> **(Secondary teacher)**

The significance of a third of respondents (20 participants) declaring '*don't know*' when asked about positives, has yet to be determined. Six participants who gave '*don't*

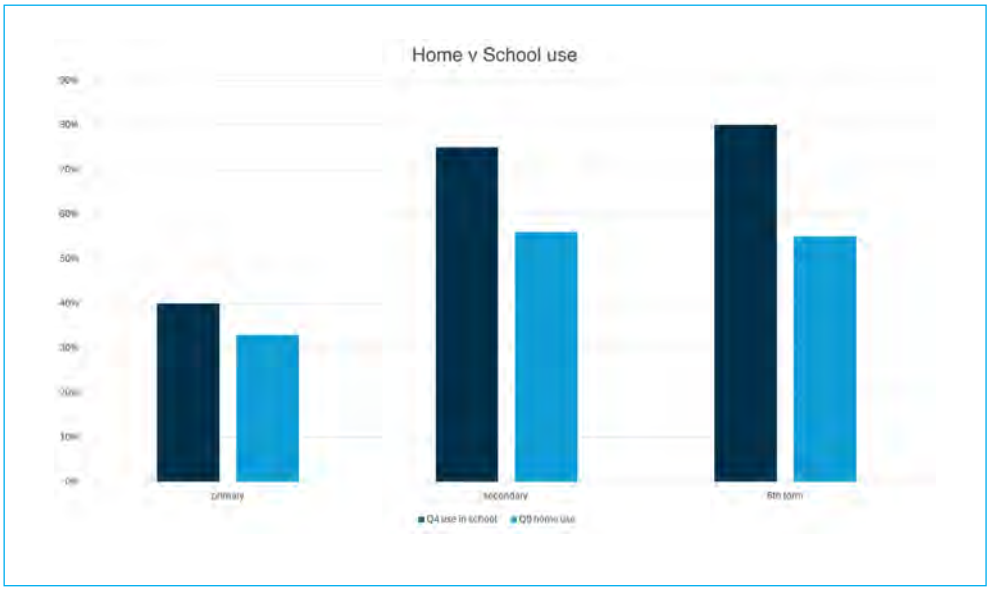

Diagram 3: Teachers' use of the tools for work and tasks not associated to work

know' responses regarding positives for teachers were from those who had not used GenAI for school or at home. These views could stem from lack of knowledge of the potential of GenAI, rather than that they have explored AI tools but are yet see a value in them. Half of respondents stating 'don't know' regarding student positives had used or experimented with AI in a work context.

Challenges and concerns for teachers and teaching

There was seemingly little difference in the tone of comments between those who had used GenAI and those who had not. Rather, the same issues were declared. Further work would be needed to determine whether non-use equated with lack of awareness and/or understanding of potential, or whether both groups might be offering broader generalisations.

Many of the concerns voiced regard learning. Concerns were expressed over the quality and appropriateness of content, which may be compounded if the teacher is not in a position to check and finesse what GenAI has created. Concerns were also expressed over teacher over-reliance on AI, though there was no overt suggestion that this might promote laziness or complacency, or simply that it would stem from an interest in saving time. Comments report some disquiet that time saved in one element would be filled with additional demands. Nevertheless, there was hope expressed that GenAI might be able to support with some roles.

> **'It is just very helpful to help teachers along when they have so much to do in so little time yet are expected to be so engaging, fun and creative 24/7.'**
> **(Secondary teacher)**

Although some responses indicate that GenAI might help stimulate thinking and raise new ideas, several responses indicate that this could be something of a 'double-edged sword'. It was suggested that GenAI might be de-skilling, leading to mundane teaching. One respondent cautioned over any loss of serendipity. Similarly, it was suggested that GenAI could lead to a loss of creativity in planning and preparation and the view that GenAI could not replace the teacher's need to know and understand their pupils, in order to finesse their lesson content.

> **'Sometimes the organic planning process means you come up to new and innovative teaching ideas, but with AI you wouldn't go through this process and miss out.'**
> **(Primary teacher)**

> **'Deskilling – you need to experiment as a teacher and see what works with a class. One size doesn't fit all… Embrace it, move with the times but don't forget the human touch. …[T]he key is to get to know the children in your room. AI can't do that…'**
> **(Secondary teacher)**

Two primary school respondents raised issues of job security.

Perceived challenges regarding pupil use

Many challenges were centred on pupil over-reliance and unquestioning use of AI-generated content, such that pupils were not alert to bias or inaccuracies. Responses show a concern that GenAI might lead to a loss of creative thinking, reduced ability to construct arguments independently and reduced motivation to engage in traditional study skills. One A-Level teacher suggested that GenAI might give a false impression regarding a pupil's ability, progress and study skills, whilst five secondary teachers expressed concerns regarding a push towards more formative testing. Equally important were the responses highlighting the implications for digital equity, which could potentially exacerbate existing educational inequalities.

4. Discussion

Key themes can be observed across both the student and teacher findings. Here we now seek to explore the potential influence of these tools on education and learning as perceived by the participants.

Positives and challenges

Overall, the findings from the sampled teachers and students indicate several parallels in their respective recognition of **the complex mix of benefits and challenges presented by using GenAI in education**. The enrichment benefits, in terms of extending and broadening learning processes and providing starting points of discussions, revision and independent learning opportunities, were highlighted by both teachers and students. Similar findings were also seen in the DfE's call for evidence (2023b).

Regarding the challenges, stakeholders expressed **concerns about the overreliance and overuse of GenAI tools and its potential to inhibit creativity and effective learning**. This indicates the dilemma faced by teachers and students, wherein they believed GenAI could either support or hinder independent learning, depending upon how and for what it is used. The **ethical and responsible use of GenAI** as a common theme in both student and teacher responses points to **the need for proper and adequate guidelines** illustrating where the use of GenAI is recommended and where it needs to be avoided.

Findings show that students are more likely to experiment with the tools away from tasks associated to their learning. Whereas if teachers use the tools to support their work, they also experiment away from work. Greater work-related use for teachers suggests that respondents may not be aware of home-leisure possibilities, that they had no access to GenAI tools, or that their existing go-to apps and methods sufficed such that they had no reason to change. It may also be because of in-school influences, such as voices of colleagues, GenAI becoming a hot topic in school or the media. This difference demonstrates **students' willingness to experiment and play with new technology** (Resnick, 2017). Both positives and challenges were demonstrated by all groups of participants, but there was a difference in keenness to experiment and develop uses of the tools.

Application of GenAI for learning

Juxtaposing teachers' and students' views on the opportunities and challenges also brought forth the differences in the way they view GenAI usages. Some teachers consider how GenAI could help them save time by cutting down their administrative and repetitive tasks. Contrastingly, some of the sampled teachers also mentioned how GenAI could also potentially lead to spending more time in in figuring out the right prompts for producing the best outputs. Furthermore, teachers seemed to be interested in using GenAI to provide **differentiated learning opportunities**, reflecting affordances in tool usage as highlighted by Kehoe (2023) in a parallel study. The students, specifically those in Year 12, however, did not seem to focus on aspects other than the revising, structuring, summarising and clarifying roles, which were also highlighted by the teachers. As the usage and experience of the younger students (Year 9 and Year 5) were limited, their comments also were restricted to a few opportunities regarding homework help and information search. Such differences indicate that despite students' predisposition to experiment with GenAI tools more broadly (including those away from school), they may need more support in a deeper understanding of the potential educational uses of AI.

The need for further learning

Several comments about the effective use of GenAI by the sampled teachers and students demonstrate that more support is needed to fully exploit GenAI's potential to optimise learning. Furthermore, teachers were also interested in knowing how GenAI could be of use in marking and assessment and wider roles. This view is best encapsulated by one participant who suggested '*If AI can do my marking, then great, but it can't*'.

Participant comments regarding the implications for learning, particularly those pertaining to quality of learning, questions about what constitutes learning and teacher-student and peer relationships, all suggest that discussions regarding generative AI in education need to encompass wider relational and person-centred aspects of education.

Some of the comments underscoring the importance of training and staff development in the safe usage of GenAI tools emphasise the need for minimising risks and dangers associated with data security and online activities, specifically in the case of younger children, echoing the focus of Fengchun and Holmes (2023). Cautious description and application of these tools in the youngest participants will ensure future generations of learners understand the importance of digital literacy. However, this also illuminates the limitation of space in the present primary curriculum to explore how such tools work and how best to use them.

The final point to consider is the wide range of responses from among both students and teachers, is the blend of those with proficiency is using GenAI, those sceptical or unsure about its usage and those not currently using it all for want of adequate 'know-how'. For both teachers and students, this suggests the need for adequate technological support. Furthermore, for teachers, this could also suggest support in responding to students with a range of GenAI proficiency and usage within their classrooms. Seen throughout all the groups of participants in the research is an interest and a call to find out more and learning more about how best to utilise these tools. Developing digitally literate student and teachers is vital in ensuring GenAI tools are ethically utilised (DfE, 2023a). Equally important is to consider equity and social justice implications resulting from the varied use of GenAI tools by both teachers and students.

To conclude, these findings demonstrate a need for further training and support for teachers in how to utilise and maximise possibilities and affordances of GenAI tools for teaching and how to support children in their ethical and effective use.

5. Conclusions, recommendations and next steps

This research study sought to explore perceptions, experiences and perspectives on the use GenAI tools from the classrooms of St Mary's University partnership schools and academies. By collecting and analysing data from students at key points of schooling, as well as from their teachers, findings and possible implications regarding how GenAI is being used to support schoolwork and beyond has been presented.

It is clear that GenAI tools, such as ChatGPT, Microsoft Copilot, Google Gemini or My Snapchat AI, are being used by teachers and students across all groups of participants. There is, however, a varying degree of use from resourcing lessons to generating new recipes and songs. The findings for the research have indicated that teachers use is generally restricted to work related jobs, whereas students increasingly indicate that they use the tools to support their learning but also for tasks away from their learning. Both students and teachers recognise significant advantages and affordances in using these tools for learning, as well as demonstrate caution, such as overreliance and data security, when using the tools. The final finding is a call for further support and CPD for how to best utilise GenAI, which was seen across both the teacher and student respondents.

This is a small-scale, local study and as such the conclusions from the findings should be viewed as such. The nature of GenAI is set to continuously evolve. The findings from this research have allowed both teacher and students to share their opinions on the tools and their use in schools. As such, the findings will support the development and positioning of the Initial Teacher Education curriculum at St Mary's University. Further research is needed in this field to inform and progress thinking and practice in ensuring these tools are effectively utilised by staff and students. Prioritising digital literacy and digital skills is vital for future generations and the teachers of these students.

Key considerations and recommendations arising from the research include:

- The need to invest in staff knowledge and understanding in the field of generative artificial intelligence, so they feel equipped to teach and discuss this with their students and peers.
- The need consider the place of generative artificial intelligence in the curriculum so that students are taught how to ethically utilise the tools and consider their roll in future industry.
- The importance of promoting consistency in schools in discussing generative artificial intelligence amongst staff, to ensure key messages are communicated to students.

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