Pallavan Learning Systems

RITINJALI

CENTRE FOR ESCALATION OF PEACE | CEP

TECHNOLOGY AND ARTIFICIAL INTELLIGENCE IN EDUCATION

PART 1

EXPLORING THE BENEFITS AND UNINTENDED CONSEQUENCES

31st July 2024

Webinar Report

Moderator
PRANAV SHARMA
Author, Astronomer,
Science Historian
India

TECHNOLOGY AND ARTIFICIAL INTELLIGENCE IN EDUCATION

PART 1

EXPLORING THE BENEFITS AND UNINTENDED CONSEQUENCES

Panelist
SONAL RAWAT
Principal
Bluebells School International
India

Wednesday, 31 July 2024
5 PM IST

Panelist
SANGAY YANGDEN JURMI
Teacher
The Royal Academy
DGI, Bhutan

This two-part webinar series is designed to provide a nuanced understanding of how students, teachers, and school leaders are using technology and AI in education, and how coders, IT specialists and policymakers are responding to refine its application in the educational field.

Panelist
PRANSHU NARAYAN
Student
St. Mary's School
India

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INTRODUCTION

On July 31st, 2024, Pallavan Learning Systems hosted its 15th webinar on the theme, "Technology and AI in Education: Exploring the Benefits and Unintended Consequences'' in association with Ritinjali and Centre for Escalation of Peace.
This webinar was the first part of the two-part webinar series designed to provide a nuanced understanding of how students, teachers, and school leaders are using technology and AI in education, and how coders, IT specialists and policymakers are responding to refine its application in the educational field.

Technology and AI are revolutionising education by providing personalised learning experiences, offering innovative teaching learning tools, and enhancing administrative efficiency. AI-powered platforms have the ability to adapt to individual student needs with customised content and real-time feedback, allowing them to take ownership of their own learning. Through technology, Teachers can focus on personalised instruction and use AI tools for efficient and effective assessment and progress tracking. School leaders can streamline administration, improve decision-making, and enhance communication using technology.

Despite the benefits, challenges such as unequal access to technology, digital literacy issues, rise in plagiarism, and privacy concerns persist. Unforeseen consequences also include reduced social skills and mental health issues for students, job insecurity and burnout for teachers, and financial strain and cybersecurity threats for school leaders. These challenges highlight the need for a balanced and thoughtful approach to integrating technology and AI in education, ensuring effective risk management and support.

The webinar sought to explore AI's impact on education and creativity, highlighting both the benefits and challenges of integrating AI in education, including its role in

shaping intelligence, the importance of non-AI-assisted learning, the potential erosion of trust, and the need for maintaining human mentorship and creativity while leveraging AI tools for enhanced teaching and learning.

ABOUT THE SPEAKERS

Moderator: Pranav Sharma
Author, Astronomer, Science Historian, India

Pranav Sharma is an astronomer and science historian known for his work on the history of the Indian Space Programme, with a specialisation in international networks of science and technology. He has curated the Space Museum at the B. M. Birla Science Centre (Hyderabad, India) and led several exhibitions on Indian Space History in collaboration with ISRO, CNES, ESA, and the European Union Institute.

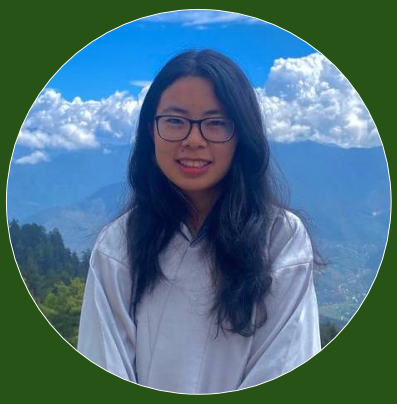
He was the In-charge of the history of the Indo-French scientific partnership project supported by the Embassy of France in India. He was also the former Member Secretary (Policy, Transdisciplinary Disruptive Science, and Communications) for G20-Science20. Presently, he is the Co-Lead of the Caltech History of Data-Driven Astronomy Project. He also serves as the Policy and Diplomacy Advisor to the United Nations International Computation Centre, Advisor to the France India Foundation, and Scientific Advisor to Arc Ventures.

He has co-authored the book, 'Essential Astrophysics: Interstellar Medium to Stellar Remnants', CRC Press, 2019. His upcoming books include 'History of Neutrino Research' (with Prof Takaaki Kajita) and 'History of 21st-century Science in India'.

Panelist: Sonal Rawat
Principal
Bluebells School International, New Delhi, India

Sonal Rawat is a distinguished educational leader and the Principal of Bluebells International School, Delhi. An alumna of Isabella Thoburn College, Lucknow, she received the National Scholarship from the HRD Ministry in 1989. She holds postgraduate degrees in Mathematics and Education, and a "Leading People" Certificate from Harvard's Graduate School of Education.

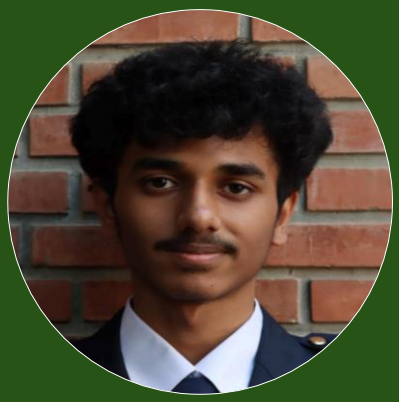
Sonal was one of the six selected Cambridge Consultants from India for the British Council-CBSE project on Competency-Based Education in 2021. She was honoured with the "Principal of Innovation" title at the Youth Ideathon 2023 for her innovative programs. Her expertise lies in curriculum development and change management, with a deep understanding of IB and Cambridge curricula. As a speaker and writer, she actively shares her insights on educational transformation and curriculum design.



Panelist: Sangay Yangden Jurmi
Teacher
The Royal Academy, Druk Gyalpo's Institute, Bhutan

Sangay Yangden Jurmi earned her Bachelor's degree in Science with a specialisation in Mathematics from the University of New England in Armidale, Australia. In 2020, she began her career as a teacher at The Royal Academy. Beyond her teaching duties, she serves as a mentor to 12 students, as well as assists students in exploring their career options and developing their educational portraits. Additionally, she leads a team responsible for curating and editing content for eBooks produced by Druk Gyalpo's Institute, with a particular focus on the "Seven Gifts" eBook series.

Sangay has a passion for engaging with people and is enthusiastic about gaining new knowledge and experiences.



Panelist: Pranshu Narayan
Student
St. Mary's School, New Delhi, India

Pranshu Narayan is a Class XI student at St. Mary's School, Delhi, specialising in science with aspirations to pursue engineering in the field of computer science. He has a keen interest in astrophysics and space research, which he explores during his free time. In addition to his academic pursuits, Pranshu actively participates in debates and engages in meaningful discussions on a variety of topics.

WEBINAR SESSION

Setting the tone

The moderator, Pranav Sharma opened the webinar session by introducing the three panelists. He noted that this webinar hosted three distinct pillars of consumers of artificial intelligence in education as panelists: the educator (Sangay Yangden Jurmi from the Royal Academy, Bhutan), the student (Pranshu Narayan from St. Mary's School, India), and the school leader (Sonal Rawat, Principal of Bluebells School International, India). He set the tone for the webinar by claiming that technology is taking a crucial space and playing a significant role in education. According to him, post-2022, when ChatGPT interrupted—or rather erupted—into this great revolution, it affected not only education but several different realms of human civilisation. We found ourselves at a crossroads, questioning where critical thinking lies, where creativity lies, and what spaces still allow for thinking. We pondered where that neural programming that makes us unique and individual resides.
The various themes discussed during the webinar is presented below.

Exploring AI in Education

To understand the role of technology from a student perspective, it was asked whether non-AI-assisted education still has a role to play in an age of information overload where everything is available at a click. It was concluded that non-AI-assisted education still has an essential role in shaping individuals and does not lose its utility despite the onset of AI-based learning and information overload.

AI can largely manage only the mechanical or academic aspects of education. The greater question is: What is our very idea of education? Education should include instilling the ability to form coherent opinions without undue influence,

understanding others' perspectives, learning key values such as discipline, and gaining the ability to be original and incorporate skills for a more productive life. AI can help with the mechanical aspect, but education should not be limited to that. The information overload from AI applications increases students' responsibility to make more responsible choices about what they access and use.

It was discussed that information overload causes disorientation and burnout among learners. When students try to understand a topic, starting with the basics and moving on to advanced aspects is essential. Being exposed to every aspect of a topic at once can be overwhelming and lead to burnout.

The discussion covered the various tools used by students today, with ChatGPT being the most popular for its diverse uses such as generating ideas, proofreading content, and explaining complex topics. However, this has led to students becoming lazier in terms of completing their assignments, especially those requiring abstract thinking or creativity. Tools like Quillbot, known for its paraphrasing and summarisation capabilities, also help students in research by providing quick overviews.

From a student perspective, it was noted that creativity is threatened by the greater use of AIs. Students are beginning to lose their ingenuity, which is disappointing because creativity cannot be learned suddenly but must be developed over time. It is crucial to ensure that AI does not threaten creativity.

Impact of AI on Teaching Methodologies

From a teacher's perspective, it was mentioned that teachers are dealing with the challenges of AI by adapting their methodologies. ChatGPT has been useful for assessments and lesson planning by saving time but also raises concerns about over-reliance and complacency. Teachers need to learn how to use AI tools effectively,

ensuring they do not replace critical thinking and creativity but rather enhance the learning experience.

There was a further discussion on the impact of AI on mentor-mentee and student-teacher relationships. It was said that even with AI, the peer-mentor relationship is not threatened because students learn values and skills from mentors that AI cannot provide. Personalised feedback from teachers is irreplaceable by AI, as it lacks the capability to understand humans deeply.

Adapting Education Systems to AI

From a school leader's perspective, AI tools are seen as a means to democratise education and make it more personalised, adaptive, and inclusive. However, there are challenges related to data security, privacy, and maintaining the authenticity and originality of student work. Schools are adapting by creating assignments that push students to think critically and provide personal opinions, ensuring that AI tools are used responsibly.

From a school leader's perspective, technology and AI have created disruption, but humanity has always adapted to new technologies. Schools provide culture, knowledge, and experiences beyond what AI can offer. Trust, authenticity, and creativity must be emphasised in education. Schools need to adapt by training students to evaluate and compare AI-generated answers with their own and ensuring assignments require personal input.

The discussion highlighted the importance of differentiating between generative and non-generative algorithms. Teachers and schools are adapting to using AI for lesson planning and assessments while maintaining the teacher-student relationship. As

mentioned, the central goal is to democratise education and ensure personalised, adaptive, and inclusive learning experiences.

Addressing Challenges and Opportunities

From a student's perspective, one of the biggest challenges in education today is the loss of social skills due to over-reliance on chatbots for interaction. Schools should provide environments for students to interact with peers and develop their characters. From a teacher's perspective, the biggest challenge is over-reliance on AI. Teachers need to use AI as a tool, not a replacement for critical thinking. Educators must raise awareness among students about using AI platforms responsibly.

From a school leader's perspective, social and emotional well-being is a concern due to addiction to AI tools. Data security is another challenge. Teachers need to create assignments that push students to think and provide personal opinions, ensuring they understand and apply knowledge.

Conclusion

In conclusion, the webinar raised a fundamental question: In this age of information overload and generative algorithms, can discovery and poetry still happen? The discussion concluded with the belief that technology is here to stay, but we must be conscious and cautious about its unintended consequences. The goal is to harness the utility of AI while addressing its challenges.

Q&A

Q. How can teachers address incorrect concepts learned by students through ChatGPT?

A. Pranshu Narayan: To address incorrect concepts without demoralising students, teachers should encourage students to engage in critical thinking and self-discovery. Rather than immediately pointing out mistakes, teachers can guide students through the process of validating their information. For example, teachers can appreciate the effort students put into their work while gently guiding them to review and cross-check their findings. This approach fosters a learning environment where students understand the importance of accuracy and develop skills to independently verify information.

Q. If a student has learned incorrect details about an event like the Battle of Plassey from ChatGPT and has written about it, how should a teacher handle this situation?

A. Sangay Jurmi: Addressing incorrect concepts requires a delicate approach. Teachers should use such instances as teaching moments, discussing the implications of relying solely on AI tools. Sharing personal experiences of errors made when using AI can illustrate the importance of verifying information. Teachers can encourage students to consult multiple sources and engage in discussions with peers to compare their understanding. This process helps students identify and correct errors while reinforcing the importance of critical evaluation and diverse perspectives.

Q. AI has the potential to significantly optimise the learning curve by personalising educational experiences and providing tailored support. However, it may also extend the learning curve in certain contexts. How can teachers navigate this situation to avoid burnout?

A. Sonal Rawat: It's important to distinguish between general generative AI tools and those specifically designed for educational purposes. While tools like ChatGPT might

contribute to a longer learning curve due to their broad and sometimes imprecise output, specialised educational AI tools are designed to support personalised learning effectively. Teachers should be selective in integrating AI tools, opting for those that align closely with curriculum goals and provide reliable support. Implementing clear guidelines on the use of AI and focusing on tailored, subject-specific tools can help manage the learning curve and mitigate burnout.

Q. What role do progress and learning methods like peer learning and group work play in addressing challenges created by generative AI?

A. Sangay Jurmi: Peer learning and group work offer significant benefits in counteracting the challenges posed by AI. These methods promote collaboration and critical thinking, allowing students to cross-check and validate information together. This collaborative approach helps mitigate the risks of misinformation and enhances social interaction, which is crucial for wholistic development. However, it is also important to recognise that group work has its limitations and should be used alongside other educational strategies.

A. Pranshu Narayan: Peer learning can help balance the unintended consequences of using AI. When students work in groups, they have opportunities to cross-check information, reducing the likelihood of errors. Group interactions also foster a more engaging learning experience and enhance social skills. By working together, students can verify the accuracy of their information and support each other in understanding complex topics.

A. Sonal Rawat: Collaborative tasks, including peer learning and group projects, address various aspects of education. They promote social interaction, critical thinking, and a shared joy of learning. Encouraging students to debate, discuss, and work together enhances their overall educational experience and helps in developing essential skills. The joy of learning that comes from collaborative efforts is a crucial

element often overlooked but highly valuable in fostering a positive and effective learning environment.

SUMMARY

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AI's Impact on Education and Creativity

The webinar began with a discussion on the impact of AI on various aspects of technology and its role in shaping intelligence. Speakers highlighted the importance of non-AI-assisted education in shaping individuals and discussed the challenges and opportunities AI presents. It was emphasised that while AI tools can be useful, they have also led to students becoming more reliant on AI and less on their own minds. The need to ensure that creativity is not threatened by the increased use of AI, and that human mentorship and personalised advice remain valuable, was stressed upon.

AI in Education: Challenges and Opportunities

Speakers discussed the challenges and potential consequences of Artificial Intelligence in education. Educators shared their experiences with AI in different disciplines and its impact on classroom dynamics. The importance of individualising student input for more effective use of AI was emphasised, suggesting that AI could be used to expand teaching methods and create inclusive classroom environments. The conversation also addressed the potential costs of relying too heavily on AI in teaching and the changing nature of education in the context of technology. The impact of

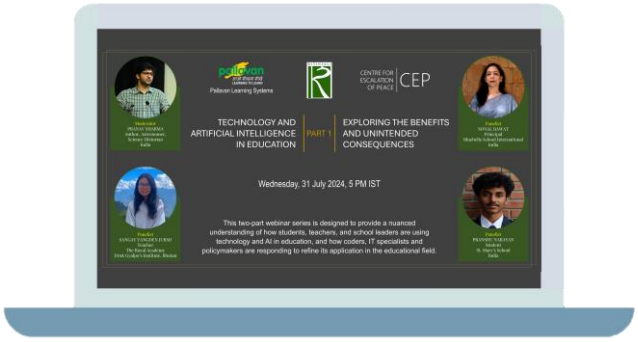
generative AI, specifically ChatGPT, on the education system was discussed, with agreement that education needs to adapt to ensure it is democratising education globally. Privacy and data security concerns were also highlighted.

The Erosion of Trust and its Implications

Speakers expressed concern about the erosion of trust and its implications, emphasising the shift from focusing on means to simply thinking about the ends. Challenges such as plagiarism and copyrights issues were highlighted, signifying the importance of building a sense of integrity and responsibility in students. It was also noted that overreliance on digital platforms hindered students' social and emotional development.

AI in Education: Enhancing Teaching and Learning

To sum up, the panel discussed the ever-increasing role of AI in education, emphasising its use as a tool to enhance teaching and learning, rather than a replacement for analytical thinking skills. They highlighted the challenges teachers face in evaluating student understanding and the need for active student participation in the learning process. The speakers concluded by acknowledging AI's potential benefits and unintended consequences in education and the necessity of maintaining a human touch in the system.



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