Pallavan Learning Systems

RITINJALI

CENTRE FOR ESCALATION OF PEACE | CEP

ON A QUEST TO LEARN:

A series on the evolving nature of one's learning journey

THE UNSEEN REVOLUTION

Technology, Education and Life

16th March 2023

Webinar Report

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INTRODUCTION

The webinar series this year is aptly termed, 'On a Quest to Learn: A series on the evolving nature of one's learning journey'. Pallavan Learning Systems' tenth webinar was held on March 16th, 2023. More than 100 participants from various countries, including Australia, Bangladesh, Bhutan, Cabo Verde, India, Nepal, Russia, the UK, and the USA, attended the webinar. The audience had a diverse range of occupations, such as students, teachers, principals, parents, educators, researchers, founders, counselors, professors, doctors, influencers, entrepreneurs, psychotherapists, special educators, and curriculum developers.

At the core of the philosophy of learning practiced at Pallavan is the understanding that as learners journey along their individual path, their experiences help them to develop capabilities or *Skills* while discovering or strengthening *Processes* that help them acquire these *Skills*. As they travel this path and acquire *Skills* and understand *Processes*, learners also cultivate qualities of character that we refer to as *Watermarks*. This process of learning, we believe, helps individuals become better versions of themselves. In keeping with this philosophy, our webinar series this year invites you to explore various fields in learning to enrich your understanding of not just the topics at hand but also view them from the lens of developing certain *Skills, Processes,* or *Watermarks.*

The first webinar in the series this year was a discussion on the profound impact that technology and Artificial Intelligence continue to have on education and society. The panellists discussed the latest and emerging technologies and how they can be utilised by educational institutions to augment human intelligence and develop learners into productive and responsible citizens.

ABOUT THE MODERATOR & PANELLISTS

Moderator
ARMAAN MATHUR
Student, Writer
Kirori Mal College, Delhi

Armaan is currently pursuing Political Science Honours at Kirori Mal College, Delhi University. He has been an avid reader and writer since his school years, starting with the student edition of Hindustan Times. Over time, he has written on diverse topics such as India's domestic politics, constitutional law, US elections, US-China relations, federalism, and culture, which have been published on various websites including The Print, India Forum, and Freedom Gazette. Armaan's passions lie in the fields of history, political science, education, technology, and international relations.

Panelist
ANNIE KOSHI
Principal
St. Mary's School, Delhi

Dr. Annie Koshi, the Principal of St. Mary's School, completed her graduation and post-graduation in English (Hons) from Lady Sri Ram College, Delhi, and later earned a B.Ed. from CIE (Delhi) and an M.A. in Educational Management from Oxford Brookes in the U.K. Dr. Koshi also received training in Testing and Evaluation as part of the CBSE ELT Project at the College of St. Mark and St. John, Plymouth, UK. She did her Ph.D. from Indian Institute of Technology (IIT) in New Delhi and focused on the topic "The Discourse of Education: Re-Examining the concept of inclusion via a study of the narratives of school children and the Indian state".

Panelist
POOJAN SAHIL
Educator & Musician

Poojan is an educator who specialises in Mathematics and is also a musician. He often integrates technology in both his personal and professional pursuits. Furthermore, he has written several articles on education, art, and technology, which have been featured in various news publications.

Panelist
KAVI ARYA
Professor
IIT Bombay, India

Dr. Kavi Arya is a Professor of Computer Science & Engineering at the Indian Institute of Technology (Bombay). He holds a B.Sc. (Hons.) in Computing Science from Imperial College of Science & Technology (UK) and an M.Sc. (Hons.)/Ph.D. in Computation from the University of Oxford. During 1988-90, Dr. Arya worked with the Animation Workstations Group at IBM's T.J. Watson Research Labs (Yorktown Heights, NY/U.S.A.). Prior to joining IIT Bombay in 2000, he held various positions in the industry. Dr. Arya is a member of high-level Govt. committees on IT Advisory Boards in Industry and serves on the Governing Council and Academic councils of several universities.

WEBINAR SESSION

The webinar began with an explanation of what is meant by the unseen revolution. It was noted that we live in a rapidly changing world. Late last year, ChatGPT took the world by storm. It is a chatbot which can debate you on Plato's organic society, solve complex mathematical problems, pen down a research essay, write a wistful poem for a lover or a sonnet on electric cars. It's quite an invention but it's not the only one of its kind. There are companies coming out with bots like Dall-E which is a system which lets you create digital images simply by describing what you want to see. GPT3 is a natural language system that can write and code with brilliant fluency. One of the most intriguing innovations is Character.ai which creates bots that impersonate characters - religious characters and historical figures. This is an inflection point. This is what the unseen revolution is. It can be viewed as a modern Pandora's Box. The question to ask ourselves is - have we opened a Pandora's Box? Have we given our learners access to a modicum of technology without giving them the right incentives to learn how to use it the right way? How do we look at the learning environment in schools and colleges and consequently at learners and

teachers who have now become consumers of this technology? The point is not only what is done inside institutions but what is done outside institutions. How is this going to impact learners beyond institutions? These were the questions that the webinar sought to address.

Technology is a Continuum

It was felt that the unseen revolution is a continuum of the Industrial Revolution. For instance, computers were allowed to enter schools which resulted in learners feeling empowered with technology as soon as the World Wide Web came into existence. People got access to information they did not have before and they could be far more creative in their engagement with education. Now what appears to be happening is that technology is more of a *sahayak* - it has become an intellectual aid that is more 'intelligent' than the previous tools. Like most technology, it is like a sharp knife in your hands. You can do good with it and you can do bad with it. It is not the technology that is inherently good or bad. It is the wielder that holds the power to decide what to do with the technology at hand.

It has been said that with the advent of machine learning, many jobs are going to disappear. But it was not anticipated how fast that was going to happen. In the past year, a lot of companies have been laying off people. There is a fear that all the low-end jobs are going to disappear. This is a trend which is going to continue. It is something that we have to live with. While there is no need to be alarmed, we still need to discover how to live with the advancements in technology which is still not very clear at the moment. It is going to alter how we function. Take, for instance, ChaptGPT3: in November 2022, it could pass the bar exams but it would perform as the bottom 10% of students. In six months' time, ChatGPT4 performs as well as the top 10%. It cracks the GRE, does AP Chemistry, AP History excellently. A database

expert at IIT, Bombay put the class assignment on ChatGPT3 and discovered it gave a better response than any of his students. So, the question is how do we live with this? Do we go back to pencil and paper exams and take computers out of the class, which is too drastic and impractical a solution? We need to think of a course of action moving forward.

Morality and Technology

It was noted that a major question we need to address as we see AI and technology moving so rapidly is how technology can be used as a tool to create a synergy with learners rather than a dependency. A question was how this synergy is taking place in the classroom. As a counter-response, it was asked whether ChatGPT can offer a solution to manual scavenging. It was felt that the roads are dirtier than ever, and people are as mean as ever to each other. How are schools supposed to address these issues and what role does technology play towards this end? Also, children are now expected to sit down to do five examinations in a year. It was questioned whether all these issues should all be turned over to ChatGPT. The central question we need to ask in the current scenario is: Who is the god we worship - the god of consumerism, the god of technology?

As a response, it was said that engineers and technology are good at solving critical problems. However, we need the humanities, especially historians and English literature graduates to tell us which problems to solve. It was stated that morality should not be confused with technology because they occupy distinct spaces. Technology is a tool while morality is the way we choose to engage with the world. Technology is a means to an end but that end has to be defined by morality.

It was noted that if we view history with an analytical mind, what has been happening throughout history is a struggle for power, and the people with power tend to subjugate those less powerful. Technology is not going to solve the issue of manual scavenging but there is a good chance that if you put in a question, it will give you several ways to address it. Then, it is up to us to figure out what the best way forward needs to be. We need to realize that ChatGPT is not moral. It has simply absorbed a large corpus of information based on which it will give you a response on how manual scavenging has been dealt with in the past, for example. This brings us to the lacuna in the education system where we need to guide students to discover their passion, humanity and compassion; ChatGPT cannot help with that, at least not at the moment. But as teachers, we can inculcate these values in our learners.

Technology and Creativity

The discussion then turned to how technology is changing the way we engage with creativity. The mandate of technology has gone beyond mere regurgitation to creativity. In the current scenario, do we need to change our understanding of creativity altogether?

The discussion led to generative AI and how it is used in music. There is a lot of AI generated music coming out nowadays but there are issues attached with it. For example, there was a channel which was making AI generated music but did not succeed because it was creating a rendition of a masterpiece by another famous musician who filed a lawsuit against the channel. The point to ponder in this case is if something can be considered an original piece if it is based on someone else's creative style. Creating something based on a snapshot of the internet (like ChatGPT) is not original creativity. It was reiterated that we are giving too much importance to

ChatGPT when we are asking questions such as - Is it going to be the end of an era? Or is it something that will replace human creativity altogether?

In recent times, there has been some debate on whether music will go extinct with the creation of electronically developed music. People began creating sound from the computer and it was felt that no one would listen to live music anymore. But that was not the case. A perfectly designed note auto-tuned on a computer is never as appealing as live music filled with human emotions and imperfections that make it a transcendental experience. It was noted that Dalle-E or AI generated music can never replace real art.

Augmenting Learning instead of Substituting it

Noam Chomsky said that the crux of Machine Learning is description and prediction. It cannot postulate any causal mechanism or physical loss. There are still limitations to ChatGPT but the fact is that students are still going to use ChatGPT to draft an essay which instead of augmenting their learning ends up substituting it because the education system is geared towards scoring high grades. The questions then turn to how stakeholders in the education system are prepared to deal with this. For technology to improve the first decades of a child's life, it has to be able to solve the problems being faced by children, which include less time for free play, excessive curriculum, teachers not up to high standards, and less time to ponder and think. Some of the emotional issues raised by children today are questions such as, how do I get someone to love me? How do I deal with myself and my issues? ChatGPT may be able to help teachers and students gain access to infinite information, but it cannot deal with the issues children face in terms of free play and emotional issues. Dealing with a machine with an algorithm with minimal guidance does not make children think and feel. And as educators, it is our utmost goal to help children to think and

feel. The aim needs to be enabling our learners to move away from conventional wisdom and create new wisdom. At the moment, the way ChatGPT works is to pull in existing data without creating anything new. That is why we as educators need to go beyond asking questions in an examination that ChatGPT can answer.

The conversation then turned to whether ChatGPT can help the government create a curriculum that is more focused and less scattered. That would be an important approach to consider. Technology can help in tasks such as relaying information, marking attendance and assignments, and creating a curriculum. But in a world where real learning takes place in the playground, what role does technology play? The crucial focus of education needs to be personality and character development along with important skills such as analytical thinking, creativity and communication. The question to consider is what kind of society we envision and what is the role of technology in making that a reality.

Using Technology to Inculcate Positive Qualities in Youngsters

As a continuation of the discussion on the true purpose of education, the conversation moved to how technology can help educators inculcate positive qualities in youngsters, such as character, personality, team working skills, empathy and compassion, and make learners more aware of the world around them.

There was a discussion of various initiatives geared towards incorporating technology to bring about societal change. IIT Bombay runs a project called E-Yantra - a project to train undergraduate students in engineering and technology skills in order to build machines to solve real-life problems. It was noted that learners need to develop compassion, take responsibility, and engage with society to solve problems using technology. One of the projects developed was an initiative by the students of Rewa

University in Bangalore that focused on creating a sewer cleaning robot in order to eradicate the issue of manual scavenging. Another example was a robot created by young students to help with rehabilitation such as physiotherapy.

We need to create individuals who can solve problems in society. And while technology cannot teach you subjects, it can animate, gamify, and make subjects more interesting. Children should be molded in such a way that technology empowers them to make more of the world than they might have otherwise, and technology is a huge asset in that process. There is no doubt that AI tools are enabling both teachers and students to be more intelligent and more creative in the way they deal with technology. The old method of teaching and regurgitation of information will not work anymore.

Conclusion

During the webinar, a diverse corpus of perspectives was presented on how we use technology and how we choose to engage with it. The aim of the webinar was not for the audience to walk away with a rosy perception of what technology is going to do to education and learning. Neither was the intent for the audience to walk away with a doomsday prediction of technology replacing all human potential. The intent was for the audience to make sense of where the role of technology in education is going to be placed and how educational institutions, learners and teachers, in general, are going to orient technology and incorporate it. Any realistic appraisal of the projection of technology in education must account for how these bots (models of technology) can only respond to inputs. Unless we type in our grouse, no bot can know what interrogation to undertake. Therefore, human creative potential is not going to be thwarted; it is only going to be redirected. We need to foster a synergy between learners and technology, and as educators we need to ensure that learners are

developing both emotionally and scholastically and that their personality development is not hampered.

That is our onus as educators and as citizens in society. It was mentioned that the future of technology in education looks to be very promising. There are going to be hurdles but we must not overstate how advanced these bots have become. There is still a long way to go but they are advancing quite rapidly and will be advanced in a short period of time.

The conclusion of the webinar was that technology is an ever-evolving process, and everyone needs to be cognizant of its development and use it for the augmentation of their own learning journey rather than be overwhelmed by it.

Q&A SESSION

Q. How do you see the role of education in helping young adults grow into citizens who bring the coherence between morality and ethics and technology?

A. Talking of technology and citizenship is very interesting. The internet has been around for 20 years but we still have board exams; we still have suicides because of exam pressure; we still have children who cannot read/write and do basic Mathematics. We still have wars over religion, corruption, and widespread poverty. Where does citizenship fit into this? It will be very interesting to ask ChatGPT - what is the moral thing to do in a particular situation?

Cybersecurity in an increasingly digitized age makes children easy prey to all kinds of cyber crimes and bullying. We say that it takes a village to bring up a child. So if the village is a digitised village and the child's experiences are through the internet, then we need to ensure that the necessary checks and monitoring are in place.

Citizenship requires empathy and responsibility. It requires learners to go out in the world and look at a situation which requires them to be an active participatory citizen. They should know what the law is. How does one do that in a digitised world? We need to understand that the people who create bots like ChatGPT are not educators. Children still need a social environment to grow holistically. For example, during Covid, learning happened online but right after the lockdown was over, everyone agreed that children need to be back in schools instead of learning online. That is because children do not grow alone. We have to talk about the developmental needs of children and focus our concentration on that. There is a place for technology but it cannot replace the physical classroom. As educators and citizens, if we keep asking ourselves why we are doing what we are doing, then we will know how to do it.

Q. We want our teachers to create questions whose answers do not come from ChatGPT but our success as schools or colleges and professors is defined by how well students are able to regurgitate in examinations. Are we willing to change the parameters that define the success of education in institutions? How exactly can that framework be created?

A. We have to realize that it is time that teachers engage with learners differently. Instead of teaching from textbooks and teaching for examinations, teachers need to come up with important and creative questions that cannot be answered on Google. For example, in e-Yantra, this is being done intuitively. We take real problems from society and we model them as a game with objective scoring criteria. Students have to understand the issue at hand and think creatively to solve that problem, and we leave enough scope in the way we define the problem so that there can be many different solutions.

In the current scenario, teachers have to be more intelligent in the questions they ask learners and the kind of problems they pose. The questions have to be more open-ended where learners can explore and be innovative in the way they address these questions. In order to Google-proof the questions, teachers have to change their mindset of simply relying on textbooks and generic information transfer. Students need to be engaged in discourse, and curiosity should be encouraged. Teachers need to encourage a self-learning ability and encourage learners to ask questions.

At present, when students go into higher education and start conducting research, they do not perform very well because they have not been encouraged to ask questions. They have not been encouraged to question the status quo. In order for a person to be a good citizen they have to know how to ask questions. They have to

learn to question everything around them. They need to think critically about all the information that is being fed to them via news channels and the media. They need to question sensitive information and use an array of websites to validate whether something is true or not. Critical thinking is something that needs to be developed in all of us. Perhaps the most important, the purpose of education needs to be relooked at. Schooling cannot remain the way it is - pass an exam and regurgitate whatever is there in the textbook.

Our education system is not going to change overnight, nor is the teachers' mindset. At present, teaching is not a profession that pays much so how do we get the best kind of talent to join the education industry? Maybe we need to look at the examples of Finland and Bhutan where teaching features among the highest-paid professions. That is the kind of systemic change we need in society. We need to have passionate people in education who can teach by example, ask the right questions, encourage learners to ask questions and be courageous enough to say, 'I don't know, let's find out.' And only then can we move towards bringing real change in the education system.

Q. How and when do you think we should introduce technology to our students so that they develop comfortably and morally with this technology? Is it possible to actually use AI to teach compassion and empathy to children? There are now apps which help children identify their emotions. Could this be used in the classrooms to empower both children and educators?

A. We need to realize that the time when the student is exposed to technology is not in the hands of the school anymore since they are already exposed to it at home at an earlier stage. Even toddlers nowadays do not eat without a phone in their hands. However, once children join the school, we need to think about how to provide access to technology in the most effective way. For example, if Grade 2 students get access to

ChatGPT, they won't be able to make the best use of it. But if Grade 2 students were given access to virtual reality glass that provides a glimpse of the Solar System, it would help them to get spatial recognition of a three-dimensional space. Therefore, the scaffolding has to be layered for young learners. Keeping in mind the social-emotional well-being of the students of today, the internet can be a good tool provided one does not turn to the internet for answers to every small query. It is true that technology can be a huge repository of information and data but human well-being without human intervention is not something that can be successful.

SUMMARY

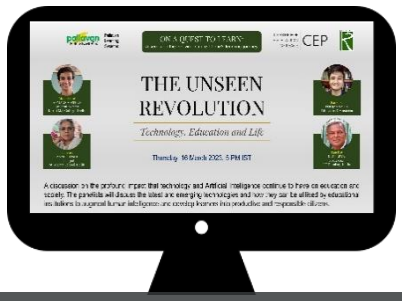
On the 16th of March 2022, Pallavan Learning Systems, in collaboration with the Centre for Escalation of Peace and Ritinjali organised their 10th webinar on the topic 'The Unseen Revolution: Technology, Education and Life'. The webinar was a part of the series 'On a Quest to Learn: A series on the evolving nature of one's learning journey', and was geared towards having an informed discussion on the profound impact that technology and Artificial Intelligence continue to have on education and society.

Poojan Sahil, an educator and musician, gave the opening and closing remarks. He also participated in the discussion and offered his insights. Armaan Mathur, who is currently pursuing Political Science Honours from Kirori Mal College, Delhi University, was the moderator for the webinar. The esteemed panellists were Dr. Kavi Arya, professor, Indian Institute of Technology, Bombay, and Dr. Annie Koshi, Principal, St. Mary's school in New Delhi.

The webinar started with a basic introduction to the latest advancement in technology, such as 'ChatGPT' and 'Dall-E'. The question posed to the panellists was whether or not we have opened a Pandora's Box and how we can prepare learners for this unseen revolution, both inside and outside educational institutions. The discussion that followed examined the fact that a technological revolution has in fact been underway since the industrial revolution, and these digital advancements exist on a continuum. Historically, every advancement has led society to question its impact on young people, including radio, television, calculators and so on. From that perspective, the discourse on how society will use technology has a long history.

This resulted in a deeper discussion on the entanglement between questions of ethics and morality on the one hand and technological advances on the other. While it was argued that despite many technological advances, the problems of poverty and suffering remain rampant, the counter argument was that technology is inherently neither good nor bad. Technology is simply just a tool in the hands of the wielder. *How* we decide to use these tools remains up to us, thus making what we teach young learners exceedingly important. The concepts of citizenship, responsibility and accountability were examined, with panellists agreeing that critical thinking and the ability to ask the right questions will increasingly become the most important thing to teach in education institutions.

The panellists discussed the fact that the latest advancement in digital technology and artificial intelligence will change the nature of the classroom, in which the simple transfer of knowledge and facts will no longer be relevant. Similarly, these advancements will increasingly take over jobs that require a high level of automation. What cannot be replaced is the ability to be creative and to think innovatively to respond to challenges faced by society and the planet. That is why the role of educators remains ever important. Helping learners how to think, how to create and innovate, how to ask the right questions, and how to always continue learning and become persons of substance – will remain the purpose of education.



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