The ISOC India Mumbai chapter is delighted to present the fourth issue of the chapter newsletter. Each of the previous newsletter issues dealt with a theme which we are passionate about. This issue is no exception. Technology has heavily impacted the education sector in the last few years. According to the KPMG report, “Online education in India: 2021”, the sector is predicted to reach $1.96 billion by 2021. The majority of volunteers in our newsletter team have education and technology as their background. Thus, we decided to present our experiences and learnings in this field by having “Internet, Education and Edtech (Educational Technology),” as the theme for this issue.

This newsletter issue commences with the “Main Story” focusing on the effects of technology in the education sector. Bill Gates, in his article for the Independent magazine, had remarked, “Technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is the most important”. Shveta, having a decade-long experience in the teaching industry, articulates the impact technology has on teaching and on the teachers.

The next section, “Bits & Bytes”, covers the ISOC India Mumbai events that focused on education and technology. Nupur concentrates on two major events, “The Role of the Internet and Social Media in Higher Education” and “Internet to aid e-learning”. The roundtable discussion on “Role of the Internet and Social Media in Higher Education” discussed the role Internet and social media currently play for higher education stakeholders. The “Internet to aid e-learning” event organized at a government school for underprivileged students in Kalwa, Mumbai tried to bridge the learning gap that these students faced by introducing them to various open-sourced technology platforms and popular utility apps available on their phones.

The “News from Other ISOC Chapters” highlights the inspiring work of other ISOC chapters and ALSSs. It shares the publicly available event information of ISOC Kyrgyzstan and ISOC Paraguay chapters as well as the details shared by ISOC Delhi and ISOC Islamabad chapters.

For “Internet World”, Prateek collated some perceptive articles on interesting topics such as how the Internet can act as a solution to the existing issues in our educational systems, the scope of the EdTech industry, biological Internet of Things and the intersection between space and Internet technologies.

In “Did You Know”, Pervaiz points out how Artificial Intelligence can help overcome Learning Disability (LD) in students. He also mentions different mobile apps for students with LD.

The “Good Samaritan” section acknowledges the efforts put in by different people for the betterment of the chapter. This issue highlights the efforts of Kanupriya Asnani for the chapter.

Keeping up with the tradition, Nandita has created a “Newsletter Crossword” as the last section of the issue. As Stephen Sondheim had quoted, “The nice thing about doing a crossword puzzle is, you know there is a solution”.

The beautiful illustration for this issue was designed by a young law student, Mr. Sidharth Singh. He is a self-taught digital designer and we would like to express our gratitude to him for truly capturing the spirit of Mumbai in his art.

Lastly, we hope that this newsletter brings as much joy and learning to you as it has brought to us. As always, we are open to your feedback and comments.

Sneha Tambe
Secretary, ISOC India Mumbai
TEACHER TECHNOPHOBIA: CAUSES AND SOLUTIONS

The Internet plays a pivotal role in today’s education as it has made education more accessible to us through our mobile phones. In the paper published on July 5, 2019, by Erin Duffin, titled “E-learning and digital Education—Statistics and facts,” it has been forecasted that the e-learning market worldwide will surpass 243 billion US dollars by 2022. Close home, according to a student online behaviour report by Hindustan Times digital and IMRB International, 73% of students use the mobile phone to access the Internet for educational purposes. These studies show that the Internet is emerging as a trustworthy source for searching education-related information.

While in today’s smart gadgets era our daily lives are intricately woven with the Internet, there are, however, still lots of hurdles to be crossed before the Internet could emerge as a great platform for Inclusive education. One of the major obstacles that come in transforming this dream into reality is ‘teacher technophobia’—the teacher’s fear of integrating technology into their teaching.

Since time immemorial, teachers have been a great role model for students. They are responsible for more than just academic enrichment. Through their work, teachers teach students important life lessons that help them succeed at multiple levels, both inside and outside classrooms. Thus, teachers play a very central role in an educational ecosystem. If the teacher is comfortable and confident using technology as her instructional tool, students also feel motivated to use technology for learning purpose.

As an educator, some of the reasons for discomfort observed are directly related to the teacher’s hesitation in using technology. While some of the teachers suffer from mental blockages, some face the lack of availability of proper resources and training. Most of the teachers lack the motivation to embrace change. This is true, especially, in the case of many senior teachers who are in the advanced stages in their careers or teachers who have secured government jobs. They are happy in their comfort zones of using traditional methods of teaching and resist learning anything new associated with technology. Many teachers have the “fear of failure”. What if something goes wrong while using technology in classrooms? They don’t want to appear vulnerable in front of their students. Hence, they stick to the blackboard and chalk method of teaching. Few think it’s a sheer waste of time as very little content is covered using technology, in contrast to, what they can cover in the same amount of time. In many instances, teachers are enthusiastic about embracing technology but they lack the necessary skillset and proper training of hardware and software resources that equip them to facilitate the teaching-learning process smoothly in classrooms. Many teachers do their lesson planning at home and not all teachers have access to computers, Internet or technological support at home. The digital divide of computer literacy is wider for teachers coming from less privileged backgrounds.

The problems cited above are interrelated and can be eliminated by organizing motivational guest lectures for teachers that emphasise on the benefits of using the Internet-driven ICT (Information and communications technology) in classrooms. Exclusive content related to curriculum needs to be developed and made available at affordable costs. Free regular workshops that train teachers to integrate the available open source such as Inkspace and popular social media utility applications like Whatsapp, Facebook, Youtube, in their teaching and learning methodology should be organized by management. Training and refresher courses need to be organized by the government consistently so that teachers develop their capacities to imbibe the Internet-driven ICT in their instructional methods. Feedback should be taken about the problems that teachers face while using technology and appropriate remedial solutions need to be implemented timely. A part of appraisals and promotions
should be based on how well teachers integrate technology in their classrooms and not merely on a seniority basis. In teacher-training (pre-service) courses, teacher trainees should be asked to implement the Internet-driven ICT in their lesson plans and it should be a major part of their evaluation criteria.

In India, the digital literacy curriculum for teachers designed by National Council of Educational Research and Training (NCERT) in 2017 is a great step towards initiating teachers to explore the world of technology and make them a critical user of ICT. However, more knowledge and fast track application of this and many such similar schemes among teachers are needed. Every year on Teacher’s day the Government of India confers ‘The National award for Teachers using ICT for Innovation’ in education but very few in the education community are aware of this. More web portals and mobile apps like ‘Saransh’- a data-driven decision support system developed and launched by Central Board of Secondary Education (CBSE) in 2015 that enhances the interaction between teachers and parents - should be popularised at local, state and national levels.

Thus, policymakers should keep in mind the importance of the bi-directional relationship between Internet-driven technology and education at all stages of learning. Educational planning, administration, management of resources and capacity building need to be streamlined for appropriate integration of technology with education within ‘formal’, ‘informal’ and ‘non-formal’ set-ups of education.

All this will go a long way in eliminating many apprehensions that teachers experience while using technology and make them proficient in it. Armed with the subject and technological expertise a teacher will continue to be an exemplary role model to its students in today’s digital age.

**BITS & BYTES**

*The Roundtable Discussion on “Role of Internet and Social Media in Higher Education”*

The Internet Society India Mumbai Chapter organized an event around the topic of “The Role of the Internet and Social Media in Higher Education” at O. P Jindal Global University (JGU), Sonipat, India on February 27, 2019. The discussion was enriched by the contribution of the esteemed members of the key schools, institutes and departments of JGU. The panellists in the discussion were given an open platform to discuss the relevance of the topic.

The discussion was commenced and moderated by Ms. Nandita Koshal (Research Associate, International Institute for Higher Education Research and Capacity Building (IIHEd), O.P. Jindal Global University (JGU) and Volunteer, Internet Society (ISOC), India Mumbai Chapter, who highlighted the relevance of the role of Internet and social media in the administration of the higher education institutes apart from academics and research. The floor was then opened for the panellists to share their relevant insights on the topic.

The first panellist Ms. Shivangi Gangwar, (Senior Research Associate, Jindal Global Law School and an LLM from the University of Chicago, USA) pointed towards the fact that since the Internet has a vast knowledge of resources, it makes teaching relevant and tools like Google Docs make note-taking faster. However, she did add to the fact that social media in a law classroom does not go hand in hand with the course instruction, as she still uses traditional teaching pedagogy.

The second panellist Dr Deepak Maun, (Assistant Professor, IIHEd, JGU, a Ph.D. from IIM Ahmedabad) talked about how social media and the Internet should be viewed separately. The
Internet can be used for learning and making teaching relevant, but things like social media should be kept out of classrooms as they don’t necessarily contribute to increasing knowledge.

Mr. Akhil Pruthi, (Joint Director, Strategy, JGU and an MBA graduate from the Chinese University of Hong Kong and ISB, Hyderabad) talked about how social media is vital for creating a brand for the promotion of institutions and get global recognition.

Dr Mousumi Mukherjee, (Deputy Director and Associate Professor, IIHEd, and Ph.D. from the University of Melbourne, Australia) expressed her concerns about the quality of research found on the Internet.

Ms. Anshu Gupta, (Assistant Manager, Admissions and Outreach, JGU and an LLM graduate from the University of California, Berkeley, USA) shared that since people are interested in “success stories” “achievements” of the educational institutions, the social media becomes relevant as millions of students access it and thus, it becomes a good platform to advertise.

The final panellist Prof. Amit Lahiri, (Associate Director, IIHEd; Chief Sustainability Officer, JGU and a post-graduate from the York University, Canada) concluded this enriching discussion by stating how Internet has the “capacity to collaborate”. The session ended with his profound lines: “Internet is a collaborative tool which collapses geographies, time and space and social media is a tool which puts it on a world map”. The full report can be read here.
Internet to aid e-learning for less privileged students.

The proliferation of mobile phones has opened up opportunities for students to use the Internet to aid their school learning. In this context, ISOC India Mumbai and WeChange volunteers had a humbling experience when they organised a session for underprivileged students of Thane Mahanagar Palika School 27, a government school for underprivileged students in Kalwa, Thane, Maharashtra on March 31, 2018. The event was coordinated by the WeChange volunteer Monica Jeshnani. The session was deeply special as the students were enthusiastically wanting to learn about the world of the Internet and technology, as it is vital for their future, and the future is now.

The students were introduced to e-learning and various Internet platforms such as Google, Wikipedia, Google Translate, YouTube, which not only can aid their learning process but also help them to be at par with the world. The talk was simplified, and students were taught about the basics of Internet operations, step-by-step basis.

The students at the school come from humble backgrounds, where they lack basic family support which compromises their learning process. Further, due to limited opportunities, they tend to lag behind the general population. ISOC India Mumbai wanted to bridge this gap and contribute towards a better future for them.

The Internet and higher education seem to go hand-in-hand, and the Internet is a necessary part of learning. Engines like Google, YouTube, can help simplify concepts for students and help them obtain information of all fields. It can also help them to start their online business and get ahead in the game. The students were elated and realized the importance of this powerful phenomenon and looked forward to using it for their advantage.

The full event report can be accessed here.
The ISOC Chapter Islamabad organized a session on “Data Protection Bill (Pakistan)” on 3rd October 2019 at Islamabad, Pakistan. The objective of the event was to create an awareness regarding the Data Protection Bill. All the members took a keen interest in the bill and discussed the societal impacts as well as the legal implications of the bill. The issues related to the data controller and the legal aspects of the bill were also debriefed. The collected suggestions were submitted to the Ministry of IT and Telecom, Government of Pakistan.

On September 10-11, 2019, the ISOC Kyrgyzstan team installed the electronic library “Ilim Box” in secondary schools in the southern part of Issyk-Kul region. The goals and objectives of the project “Ilim Box” coincide with the five-year strategy of digital transformation “Digital Kyrgyzstan 2019-2023” and contribute to the achievement of target indicators for the component “development of the digital state” and “development of digital skills”. The choice of schools was based on the following factors- no access to the Internet for students, lack of books, as well as an excessive number of students per class. The box provides students with offline access to all educational resources. The source of the story can be found here.

Colegio Técnico Nacional, a secondary school located in Asunción, is one of the top schools in Paraguay offering technology-related bachelor’s degree. Unfortunately, its classrooms lacked an Internet connection, fully equipped laboratories, and updated computer systems. In January 2018, the Internet Society Paraguay Chapter started the CTN-ISOCpy project, supported by the Internet Society Foundation and it’s Beyond the Net Large Grants program. The project was designed to provide the school with Internet access and set up a high-tech electronics lab to ensure a quality environment for the development of innovative solutions based on robotics, e-learning systems, and the Internet of Things. The installation of a network based on IPv6 facilitated the adoption of new protocols and the school was equipped with 10 computers, 6 laptops, 1 projector, 1 3D printer, and 10 Arduino kits. 30 teachers have been trained on the new technological resources and 450 students in electronics have been able to participate in national and international competitions, like ExpoTécnica. Find the story here.

The ISOC Delhi chapter and CCAOI organized an interactive webinar on the topic, "Data Protection Bill 2019", on 24th December ‘19. The objective of the webinar was to make the participants aware about the Personal Data Protection (PDP) Bill and the various issues associated with it so that informed inputs can be provided to the Joint Select Committee, which is currently reviewing this bill. Various issues like data localization, cross border data flows, social media intermediaries, which are associated with the bill, were discussed in detail. The webinar was attended by close to 100 participants from across the country and belonging to the different stakeholder group.
The Internet and Education
Is the Internet a panacea for existing deficiencies in our educational systems or practices? The answer to this question will depend on our beliefs about the nature of future education. Transcending the boundaries of geography and time, the Internet has provided users with opportunities to collaborate as well as personalise their learning experience. Unfortunately, there is no concrete evidence that these opportunities have automatically led to more motivated learners, highly skilled workforces, or rising levels of national intelligence and innovation. This informative article from BBVA OpenMind analyzes Internet as an educational tool. Apart from analysing its history and future potential from a sociological perspective, the article deconstructs the potential gains and losses arising from existing advances in Internet-driven educational practices. Read the full article here.

The Best of Edtech in 2019
How big is the Edtech industry? In the United States, spending on education technology has already crossed 13 billion dollars in 2019. Such huge spending has the potential to transform the existing relationship between a teacher and her student. To explore this impact, Today’s Modern Educator has compiled top the three stories surrounding education technology in 2019. The first story talks about a recent study from J-PAL, North America which empirically highlighted the role of education technology in improving digital literacy and accessibility to learning. The next story talks about Converge, a digital marketing conference, wherein educators and marketers deliberate and engage over the marketing efforts for edtech industry. The last story talks about setting up of a cross-disciplinary research centre at Northern Illinois University that aims to research on the advanced technologies to tackle the real-world educational challenges. Read the full article here.

Creating a Biological Internet of Things
The Internet of Things (IoT) enables different devices with an Internet Protocol (IP) address to communicate with each other. But can we design a biological version of the Internet of Things (IoT)? Are there any instances of bio-hacking which shows us the remarkable potential of a biological Internet of Things? In an article from MIT Technology review, Raphael Kim and Stefan Poslad from the Queen Mary University of London point out that bacteria can communicate effectively as they have built-in engines and sensors, as well as, powerful information storage and processing architecture. Thus, bacteria can be used to create a biological version of the Internet of Things (IoT). They suggest that bacteria can be programmed and deployed in different natural settings as a part of smart IoT solutions. Unfortunately, there are various downsides to this experiment. While genetic engineering makes possible all kinds of amusing experiments, darker possibilities of inability to control bio-systems and subsequent ethical dilemmas give bio-security experts sleepless nights. Read the full article here.

The Race for Space-based Internet
Are Space and Internet technologies converging? After land and deep seas, can space-based mesh technologies help connect the unconnected? According to an article from the World Economic Forum, Low Earth Orbit (LEO) based satellites can foster Internet adoption via economies of scale and global supply chains. Well-funded Internet and technology companies are already making these investments. However, “moving fast and breaking things” or even just going solo will not do. Achieving large scale LEO based Internet adoption will require technology standardization and buy-in from multiple stakeholders including technology companies, industry associations and regulatory bodies around the world. Read the full article here.
Learning Disability and Artificial Intelligence

Learning Disability (LD) is a disorder that affects the ability to acquire and use academic skills, such as reading, writing and calculating. It was not long before when children with learning disabilities went undetected and had to face social stigma.

There are different types of learning disabilities such as Dyslexia, ADHD (Attention Deficit/Hyperactivity Disorder), Dyscalculia, Dysgraphia, and Processing Deficits. These pose a great threat in the personality development of the affected children and throw a huge challenge at the educators.

With technology changing the way education is imparted today, there is good news for the LDs too. In this context, AI has emerged as a powerful tool that has become a game-changer in the education industry.

Artificial Intelligence (AI) as a broader concept underlines the ability of the machines to carry out tasks in a ‘smart’ way. And, Machine Learning (ML) is a subset of AI. It is a science of designing and applying algorithms that can learn things from past cases. Pattern Recognition in ML is one such tool that uses powerful algorithms for identifying the regularities in the given data. The application of Pattern Recognition is widely used in the new age technical domains like computer vision, speech recognition, face recognition, etc. With the help of ML and Pattern Recognition, the identification and treatment of LDs by diagnosing their behavioural patterns have become much easier. This also allows for the provision of offering smart solutions to their problems.

According to an article by Kenedy Waweru, some of the ways how the AI helps the LDs are:

Assistive technology – a device or tool that helps someone with a disability to function better. It improves functions in children with both learning and physical disabilities. Otismo Special Education is one such technology that educates and entertains the child and keeps their motivation and eagerness to learn high.

Programming – It works as a therapy to improve the logical and analytical skills of the child.

Adaptive learning – It helps in assessing the skill level of the child and guiding them at their pace.

Classroom audiovisual – It uses interactive smart boards to capture attention and help retention of the topic, away from the traditional textbooks.

Writing – This includes apps and programs that help learn grammar, and reading and writing skills.

Diagnosis - AI programs help screen and diagnose kids with dyslexia or other learning disabilities. Early detection helps early treatment and furthers progress.

Professional development – Self-paced learning programs boost self-development and confidence.

Timely and reliable feedback – With AI programs it is possible to correct the students so that they may learn from their mistakes.
Availability of factual data – Data is available to gauge student performance, compare with rest and make them more inclusive in the education system.

As per the online platform The Tech Edvocate, the seven essential apps for students with learning disabilities are:

1. ModMath
2. MyTalkTools Mobile
3. Dyslexia Toolbox
4. If...The Emotional IQ Game
5. Stop, Breathe & Think
6. Voice Dream Reader
7. Autism Xpress

AI also helps bring to an end the stereotype associated with learners who don’t fit in the society. Solving/managing this problem is a step closer to ending the stigma.

OUR GOOD SAMARITAN

Ms. Kanupriya Ahuja Asnani is addicted to handicrafts and handmade things all around. She loves colours in every form and is driven towards nature and life. Fashion and Lifestyle designer by profession; she has completed her Bachelor’s degree in Design from National Institute of Fashion Technology, New Delhi.

She explores the new realms of product designing by blending functionality and aesthetics to create designs that are sustainable and visually appealing. She has found her niche in creating simple and sensible things for the home, kitchen and the human soul. She loves to create illustrations, collecting fancy stationery, is a fanatic reader, finds peace in the aroma of books and is passionate about design.

She is currently working as an Independent Product Designer and creates handcrafted paper accessories for her online Brand “Hopping Chidiya”.

Kanupriya will always hold a special place for ISOC India Mumbai chapter as she voluntarily designed the first illustration for our newsletter cover wherein she created an illustration that highlighted the amalgamation of the Internet, technology and Mumbai and celebrated the Internet and the social media character of Mumbai.
Across
3. A learning disability
6. A Tool to identify regularities in given data
7. Data driven decision support system for education
8. A biological IoT hazard
10. Country with over 13 billion USD invested in EdTech

Down
1. Fear of integrating technology in a trade
2. An electronic library
4. An App for learning disabilities
5. An ISOC Paraguay initiative
9. A collaborative tool that collapses time, geographies and space
**Shveta Kokash** is an ISOC India Mumbai volunteer and an accomplished professional with postgraduate degrees in mathematics, computer programming and education. She has more than 13 years of teaching experience. She is currently pursuing her Ph.D. in higher education, in the topic related to technology and instructional methods, from SNDT University, Mumbai; India’s first woman university. As Vice-President of ISOC India Mumbai, Shveta has recruited new members, organised events and attended ISOC Mumbai events. She was also part of inSIG 2018 held in Delhi. A successful multitasker, Shveta handles her job, parental responsibilities, social responsibilities and ISOC commitments very well. She loves going on treks, is a Zumba enthusiast and participates in major half marathon regularly. She believes in living life to the fullest and making this world a better place in whatever way she can.

**Sneha Tambe** is one of the founding members of the ISOC India Mumbai Chapter. She is a technology professional with degrees in computer science and management. She has more than 7 years of experience in the IT industry and has worked with different clients like Lufthansa, Merck and the UK Government. As the Secretary of ISOC India Mumbai, she was invited to be a part of the APAC-ME Chapter meet in Nepal. She was also a part of the ‘ISOC Beyond the Net’ selection committee and helped review the various beyond the net applications. She was awarded a fellowship to attend inSIG 2018 at Delhi. She is a part of the current ISOC chapterthon process working group. She is member of the Steering Committee of inSIG 2019 and organizer for yIGF 2019. Sneha is a certified Karate Black Belt fighter. She also speaks French and Italian languages.

**Nandita Koshal** is an ISOC India Mumbai Volunteer and a Research Associate with a renowned private university in Delhi NCR, India. A postgraduate in economics, she provides research analyses, policy advisory and consultation in the social development sector. She has previously worked with the leading government ministries and top law firm of the country and provided consultancy to the state government of Haryana on area of higher education. As ISOC India Mumbai Treasurer, she is responsible for maintaining Chapter financial accounts. She has also organised discussions around role of Internet and social media in higher education, need for deeper integration of technology with humanities, and advocated more engagement of women in technology. She was also a fellow at inSIG 2018, Delhi. She is the Editor-in-Chief for ISOC India Mumbai newsletter. She is also member of the Steering Committee of inSIG 2019. In her spare time, she loves to read, swim and travel.
Nupur Vijh is an ISOC India Mumbai volunteer and a social service worker, who works with a Canadian Non-Profit. She has pursued her education in political science, English literature, public policy and social work from India and Canada. She works with the vulnerable population such as the drug addicts, people with mental health and the homeless population, and helps them achieve their goals. She is also studying to be an educational assistant to help the “special needs” children to succeed. As a volunteer with ISOC India Mumbai, she has participated in events helping to grow computer literacy amongst the refugees from Syria. She loves being out in nature. Through her efforts, she wants to make a difference in the lives of the people.

Mohammad Pervaiz is an ISOC India Mumbai volunteer. He is an Electrical Engineer with degrees in Computer Systems and Information Technology. He works as a Lecturer and has vast experience in the field of high school/college technical education. He also holds a diploma in School Management and provides career counselling to his students and motivates them to pursue higher education. He does volunteer work for a local NGO that works for the educational upliftment of underprivileged students. He was selected as a fellow to attend the inSIG 2019 at Kolkata. He strongly believes that technology can make the world a better place to live in and, therefore, it must cross all social and economic barriers to reach every individual. He loves to swim, travel, socialize, and take part in adventure sports.
This is a quarterly publication from ISOC India Mumbai Chapter. To share your feedback, please write to us at chapterleaders@isocindiamumbai.org or visit us at https://isocindiamumbai.org/

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