The Future of ICT in the Philippines: Emerging Education Technologies

The department of information and communications technology held a webinar via zoom and facebook live to tackle the emerging technologies in education sector. These different technologies used today in education are shared by guest speakers from different tech companies.

First technology tackled in the webinar is Neuromaker, established in Harvard Innovation Lab. One of their innovations is called Neuromaker Hand, a brain computer interface prosthetic hand. They offer a curriculum that includes reusable kit, web-based coding software, virtual capstone competition, and tie to real world product. The student can experience building the prosthetic AI hand from the basic- from the control, electrical materials, to biomechanical movement pieces, to all the circuitry needed to create AI prosthetic. The Neuromaker took on these fundamentals in building computer interface technology: First, neuroscience to understand the source and meaning of measurable brain activity; second is the signal processing – the BCI practitioners must recognize the patterns in data and filtering relevant brain signals from unwanted noise; third, the BCI practitioner should understand machine learning application to complicated neurological data sets; and last is understanding the social impact of BCI technology and its ethical use to safeguard the moral applications of this technology.

Next is about exploring modern day technology through 3D printing to showcase creativity. 3D printing can be applied on art and culture, architectural design, industrial manufacturing, education, medical industry, toy manufacturing, jewelry, and archaeology. Speaking of architecture, 3D printing can be used to make a visual representation of the architectural concepts. Engineering students can use 3D printing can create new prototypes beyond the capability of traditional sense of ink and paper, 3D printing allows 3D objects to be physically printed before our eyes. 3D printing can be very useful in school and to students when it comes to examining historical artifacts, creating a 3D version of their artwork, science students can create 3D models of molecules, cells, or any biological artifacts, creating 3D models of problems to solve, and topography, demographic, or population maps. The major benefits 3D printing offers are it promotes problem-solving skills, it creates excitement as student experience the actual model creation and can explore the details, complements the curriculum, it gives access to knowledge that previously unavailable, and it opens new possibilities of learning.

Today, parents need a positive and trusted gateway of technology that caters learning and development needs of children. However, engaging kids to learning can be complicated and everyone is trying to address it with the use of technology. Thus, the next educational innovation of webinar is about AI and Robotics. First innovation is of MIKO, where they built an emotionally Intelligent Interface. This robot – MIKO^3 is developed for playful learning, a safe and positive gateway of technology for kids and today's parents who are concerned about the screen addiction of their child. The MIKO^3 robot offers audio visual format, games, can have conversation, and HRI gesture based. This robot also covers different genres such as STEM, travelling, life skills, sports, cultural, or arts and crafts. The next innovation is of Softbank robotics which aims to inspire youths in AI and robotics. One of their products is called Pepper robot- a humanoid robot. Pepper is a combination of AI and robotics, it can navigate, can see through computer vision, have robot arm for industrial manipulation, have natural speech interaction, and have robot brain (AI, machine learning, cloud computing, and big data). In education & research, Pepper is designed to easily create an empathetic link with students, teachers and researchers by their eye-catching appearances, moderate sizes and humanoid behaviors. Aside from the courseware they offer for pepper robot development, they also do a competition platform, which is very helpful in showcasing student's knowledge in robotics. Locally, Felta are aiming to modernize the education for childrens through robotics. And engaging childrens to technology can open opportunities for career paths for robotics like data scientist, data analyst, software developer, cloud manager, AI manager, game manager, virtual assistant, and more, especially in Philippines a lot of children from poor sector wanted to enter the science and technology sector compare to wealthy countries where interest in technology declines like Germany, France, the US, and even in Korea. In Felta, they teach students to design robots using Lego, and virtual robots wherein students can program the robots. This education can be very helpful in science and technology education of the Philippines because they are aiming to teach those elementary students, and these students learn programming and robotics in a very young age.