



Smart City Innovation Among State Colleges and Universities and Rehumanizing Education in Society 5.0

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Abstract. The paper focused on discussing the concept of SMART CITY as a form of technological innovation breakthrough in Higher Education Institutions (HEIs) in the Philippines and how the recipient State Universities and Colleges (SUCs) rallied on the utilization of these ICT innovations while preparing teachers and students on rehumanizing education. As a background, there were about 533 government HEIs in the country which comprised the 22.25% of all HEIs in the country. Through the creation of a law, the Republic Act # 11494 or the Bayanihan We Heal as One Act, the government allotted Three Billion Pesos (Php. 3,000,000,000.00) for the ICT infrastructure of SUCs. NEUST is one of the SUC recipient of becoming SMART City University or commonly referred to as SMART Campus. In the Philippines, college students enrolled in SUCs enjoyed free education. This means they do not pay even a single cent and so there was a dramatic increased in terms of student's enrolment. A common characteristic among SUC enrolled students is that great majority of them belonged to low-income families and this condition posed an unparallel situation in the delivery of education by a SMART Campus University. The building of ICT infrastructure and delivery of digitalized education highlighted the SMART Campus Innovation, that is, for the country and its Higher Education Institutions to be responsive and continuously work productively towards the attainment of Sustainable Development Goals. Building means to make facilities available with a mechanism to bring about development of pleasant infrastructure that is available and accessible for the school community stakeholders. An educational community that will really capacitate the teachers for a capacitated learners. According to Dr. Fukuyuma (2018), the evolution of digital transformation, from Society 1.0 to Society 5.0, is not a path that can be avoided, along with numerous issues. One of these, is the digital status and readiness of the learners which are unparallel with the provision of SMART City facilities which have been addressed and continuously addressing by SUCs by capacitating the students, mentally, psychologically, and technologically which is the top priority where students are continuously given the support to attain a dependable capacity.

Keywords: Higher Education Institutions · Rehumanizing Education · Smart City · Smart University

1 Introduction

Advance technology in information and communication is the major characteristic of a SMART City which means that if an institution of higher learning is to become a SMART Campus, its ICT facilities must be adaptive with the requirements and standards of Society 4.0. Such type of facilities that is accessible and highly dependable for the students and other stakeholders in education is available for the training and capacitating of students and teachers to become responsive to the needs of Sustainable Development Goals. With this, both teachers and learners benefit from the technology, thus, rehumanizing education towards Society 5.0.

2 Discussion

The discussion starts with the question “What percent of students in your university is technologically ready?” In this question, “technologically ready” means that students have functional gadgets and strong internet connectivity to embrace Society 5.0 in education.

The question was raised because, as we are commonly aware that this generation, this era is now living in the so-called digital humanity, we seemed to have the need to check on the technological status of our students, especially the students enrolled in public or government higher education institutions.

If the percent rating is 100%, this means that ALL, yes ALL, of students is technologically ready to embrace digital humanity. If this is the case then the school is ready which means that both teachers and students are accompanied with advance ICT facilities and thereby learning the rudiments of digital era. This is ideal and presently far from reality.

In the Philippines, there are a total of 2,396 universities and colleges, of this number 533 or 22.25% or less than a quarter comprised the government supported Tertiary Colleges and Universities in the country, (CHED Report 2020–2021) (Table 1).

Table 1. Distribution of HEIs in the Philippines

Institution Type	Excluding SUC Satellite Campuses	Including SUC Satellite Campuses
Local Colleges and Universities (LCUs)	121	121
Other Government Schools (OGS, CSI, Special HEIs)	13	13
Private Higher Education Institution	1,729	1,729
State Universities and Colleges (SUCs)	112	533
Grand Total	1,975	2,396

These 533 Tertiary Education is offering free education in all universities and Colleges are distributed all over the country. Free education means that college students are not paying even a single cent once they were accepted.

Because of pandemic, the enrollment in these state supported HEIs increased dramatically as shown in Fig. 1. One common characteristics of students who are enrolled in this 533 government supported schools is that great majority of students, about 90% belonged to low- income families. SUCs got flooded with enrollees in the beginning of the present SY 2020–2021 and there were about 1.39M Filipino students enrolled in all these 533 government supported HEIs. This number is of course lower than the number of college students enrolled in the Private HEIs. What percent of these students are ready in the so called digitalized education?

In a Special Article published in Japan Spotlight in August 2018, and written by Miss Mayumi Fukuyama of Japan’s Research and Development Group, Hitachi, Ltd. Accordingly, the digital transformation in the world is iconic in the following as shown on Fig. 2.

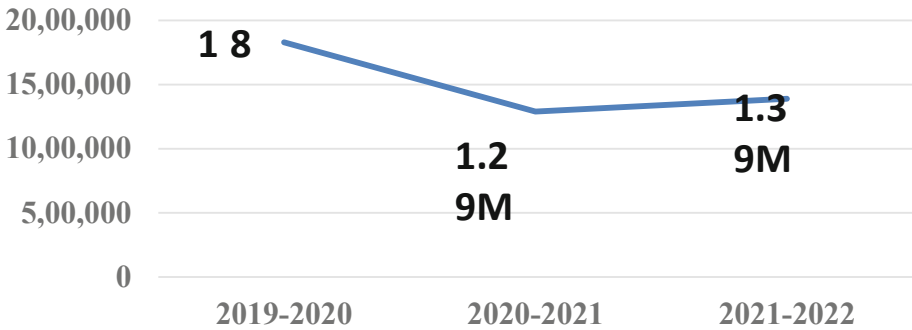


Fig. 1. Students Enrolled in SUCs



Fig. 2. The Iconic Terms in Digital Technology Era

Fukuyama (2018) explained that In Europe, the iconic term is Industry 4.0 while in China it is Made in China 2025. The term Society 5.0 put forward by the Japanese government was drafted in the 5th S & T Basic Plan by the Council for Science, Technology and Innovation held in January 2016. In Asia, the iconic term is **Smart Cities** while in North America, it is Industrial Internet. Collectively described in all or any of these iconic references, the terms **I o T or internet of things, AI or Artificial Intelligence, Robotics, Big data, blockchain, cloud**, and so on, and so forth, are all part and parcel.

Now what innovation breakthrough there is in relation to Smart Cities or SMART Campus in the Philippines?

In the height of addressing the impact of COVID 19 in 2020, a memorandum order was issued by the government agency in-charged of universities and colleges in the Philippines. Said issuance referred to Memorandum #9 series of 2020 which set the Guidelines on the Allocation of Financial Assistance for all SUCs for the Development of SMART Campuses in consonance with the mandate of Republic Act No. 11494 or the Bayanihan to Recover As One Act.

Smart Campus refers to spaces where higher education institutions use next-generation digital technologies woven seamlessly within a well-architected infrastructure to develop tools to enhance teaching and learning delivery services.

Another highlight of the Smart Campus Innovation is for the country and its Higher Education institutions to be responsive and continuously work productively towards the attainment of Sustainable Development Goals. For the attainment of all the 17 SDG's, the concept of living into Society 5.0 must be embraced by all education stakeholders. Most specially, SDG number 4 focused on ensuring inclusive and quality education for all and promoting lifelong learning. Henceforth, that includes the education sector and its community. It was emphasized by Dr. Fukuyama that there are five strategic fields to achieve Society 5.0. This includes extension of healthy lifespan, realization of mobility revolution, creation of next generation supply chains, and building and development of pleasant infrastructure. Building means to make the facilities available with a mechanism to bring about development. Building and development of pleasant infrastructure means accessible and available for all. An educational community that will really capacitate the teachers for a capacitated learners. For it is the goal of Society 5.0 to create a human-centric society or digital humanity as they called, in which both economic development and the resolution of societal challenges are achieved, and people can enjoy a high quality of life that is fully active and comfortable.

Yes, we are now in this era, one in which globalization and rapid evolution of digital technologies, the environment and people's values are becoming increasingly diverse, complex and somewhat demanding. And in this, there were new sets of issues and concerns that emerged that focused on addressing the need to rehumanize education, that is by going back to the basic of humanity, that speaks of revisiting psychosocial and behavioral aspects among our students.

The Smart Campus in a SMART university actually created a concern that needs to be addressed, such concern on the technological readiness of students posed an unparallel condition since great majority of SUCs students belonged to low-income families which cannot afford to have technological devices. This dilemma of government universities, the inequality of universities' readiness and readiness of students is described in Fig. 3.



Fig. 3. Status of Technological Readiness of Most Students in SUCs

The innovation that SMART Universities are in as a SMART Campus is unparalleled with students' readiness. Such condition was addressed as described in Fig. 4.

In order to achieve a parallel condition where a Smart Campus is matched with SMART students, a lot of efforts were initiated. Capacitating the students, mentally and technologically is the top priority. Students are continuously given the support to attain such capacity. Curriculum were revised and ICT infrastructure were made available and accessible for their utilization. More specifically, the following actions were undertaken to attain a parallel condition wherein Smart Campus with smart students equals smart city:

1. Engagement with Institutional e-capacity building trainings and immersion which started In 2020 wherein sports events were done virtually (e-games) where every department organized teams who coveted for various e-games. The annual beauty contests was also held virtually, summer camps, quiz bees, and other similar activities were held virtually. Dance and singing contest, socio-cultural activities, practice teaching, faculty and student exchange projects were done virtually. This is to accustom, make the students engaged and functional, that not only lessons are delivered online but student activities as well.
2. Each department organized Load and assistance program, the percentage of students who have no connectivity at all in 2020, are now fully connected. Part of capacitating students are through linking them with local and international partners and supports,

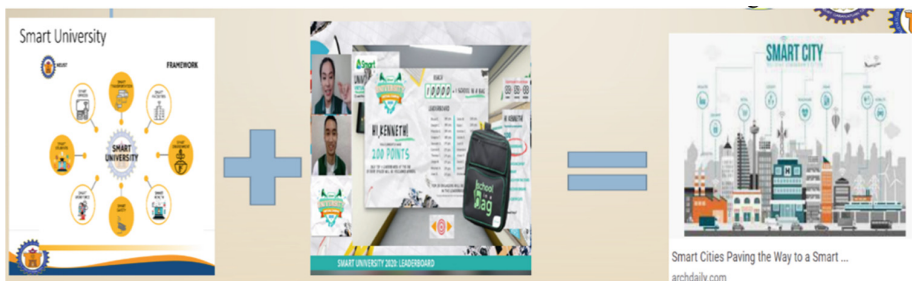


Fig. 4. Requirements to Achieve Smart Campus and Student Parallelism

alumni and other benefactors for the provision of free tech devices which we have distributed to more than 1,500 students. These were done to bridge the gap until all students are now connected.

3. Sustained engagement of teachers to online trainings and provision of new computer units per teacher. Training of teachers were non-stop. In preparation for full 100% F2F classes, the University facilitated massive retraining of teachers in handling students concerns and issues.
4. A SMART ready teachers and students are engaged in continuous and periodic trainings on data privacy law, netiquettes, cyber security, mental and psychological health care activities, webinars, and trainings. To give emphasis on values and good practices. Sustained means, year round that every college is tasked to conduct and engage students with all these activities.

The main goal is to capacitate the students to be SMART ready. And at rehumanizing both teachers and students in preparation for digital humanity era. There are still a lot of concerns to address with. What is important is that education institutions are not stopping, we are adapting, and we are embracing the concept of digital humanity.

References

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