Perception on Smart Phone Usage in Sustainable Learning among the Students of the Federal Polytechnic, Ado-Ekiti, Nigeria

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ABSTRACT: In tertiary institutions, the usage of smartphones has become one of the most intriguing learning tools for improved teaching, research, and learning. The usage of this tool has enhanced the capacity of lecturers to be more flexible in the delivery of lectures. It also provides students with access to online learning resources, course platforms, and the ability to engage in digital interactions. The purpose of this study is to determine the most common usage of mobile phones among students of the Federal Polytechnic, Ado Ekiti, as well as the effects of mobile phones on students' learning abilities. For the study, a survey research design and questionnaires were used, with a total of 37 respondents. The study's goals include learning about students' perceptions of how easy it is to utilize smartphones in learning. The study's objectives are to assess students' perceptions of smartphone ease of use in learning activities, to determine the perceived utility of smartphones in students' academic achievement, and to investigate the effect of smartphone use in students' learning activities. Students find it easier to use a smartphone in their learning activities, according to the study. It was also discovered that smartphones played a significant part in the academic activities of students at the Federal Polytechnic, Ado-Ekiti. It also observed some negative effects on students' academic performance, as well as some barriers to smartphone use, such as distractions during critical learning times, unreliable internet connectivity, and invading calls during class hours.

KEYWORDS: Learning, Mobile technology, Perception, Smart phone, Students learning.

1.0 INTRODUCTION

Smartphones and tablets are internet-connected mobile devices, and seems to have become the preferred platform for the millennial population involved in numerous internet activities (Alzougool and Almansour, 2017). The global mobile market as well as ownership and penetration rates have tremendously increased, (GSMA Intelligence Report, 2016). By 2025, it is expected that there will be 5.8 billion internet subscribers and a 71 percent penetration rate of internet providers. It appears that advancement in technology, information and communication technologies (ICTs) have resulted in a wider usage of mobile technology in the education sector notably among tertiary institutions.

Smartphones have become a common place electronic device among the general populace hence, it has make it easier than ever to access a vast volume of information on the internet (Payne, Wharrad, & Watts, 2012). Students can use their smartphones and computers to learn and discuss issues even while they are physically apart. It also promotes cooperative learning as an alternative to reading books, using computers, or attending physical lectures on campus (Taleb & Sohrabi, 2012).Teachers may easily upload instructional materials to their students using mobile devices, and students can communicate with their teachers quickly using text, voice, or image (Kim, Rueckert, Kim, & Seo, 2013).Several research on student attitudes towards the use of smartphone and its impact on learning have been conducted in industrialized countries. Most of these studies demonstrated the benefits of cellphones and its contributions to the learning process of students. According to Wang and Smith (2013), Japanese students saw mobile phone-assisted learning as an excellent way to improve reading and grammar ability.

Focusing on Nigeria, mobile phone usage is rapidly increasing in response to the introduction of new digital technologies such as smart phones, 4G phones, and tablets. Furthermore, students at higher institutions may represent one of the most effective segments of Nigerian society, since they are frequently involved in the use of advanced mobile phone technologies, which has become an integral part of their everyday lives. Students at the Federal Polytechnic, Ado Ekiti, seem to be a good

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example of this, as evidenced by their diverse cell phone usage. Over the last two decades, integrated electronics has completely transformed our lives. These integrated circuits have become an indispensable resource in today's knowledge-based society.

Mobile phones have become one of the most ubiquitous modern telecommunication devices, particularly among students of higher education. In terms of academic concerns, some student seems to believe that their phones help them improve their learning quality outside of the classroom. Wireless communication devices, such as cellphones, have now become a commonplace tool for most individuals all over the world. Mobile phones were first brought to the world for business purposes, but they have since evolved into a number of settings, including internet access through mobile phone, multimedia communications, and voice communication applications (Alfawareh and Jusoh, 2014).

1.1 Objectives
The objectives of this study are to:
i. Investigate the main uses of mobile phones among students of the Federal Polytechnic, Ado Ekiti.
ii Identify the effects of mobile phones on the Federal Polytechnic, Ado Ekiti students learning abilities.

1.2 Research Questions
The following were the research questions the study seeks to answer:
i. What is the most common usage of mobile phones among the students of the Federal Polytechnic, Ado Ekiti, based on motivation and behavioral characteristic concepts?
ii How far is the usage of mobile phone is affecting the learning capabilities of the Federal Polytechnic, Ado Ekiti students?

2.0 LITERATURE REVIEW

2.1 The concept of the smartphone in mobile learning
Smartphones today are capable of running a wide range of applications. Many innovative applications have been created to make it easier to utilize cellphones as sensors, detect, and monitor variety of objects. Smartphones, for example, can be used to track traffic, detect urban space, monitor meteorological conditions, and assist in the identification of locations, among other things. A smartphone is a mobile phone with more advanced processing capability and connectivity than a feature phone with limited functionality, (Fawareh and Jusoh, 2017). In the year 2000, smartphones were introduced, Ericsson was the first to produce it, and the model was designated R380 (Alfawareh & Jusoh, 2014). Smartphones may be used to learn both offline and online activities. Offline access allows smartphone users to save any type of learning material, including pdf, PowerPoint, Word, Excel, photos, animations, and symbols, regardless of their location. Learners, such as students and teachers, require internet connection in order to view websites meet their information demands. Students' learning activities have changed as a result of their discoveries of smartphone.

2.2 Students' Perceived Usefulness of Smartphones in Academic Achievement
In a study conducted by Jung (2014), at North-West University (NWU) in South Africa on determinants impacting learners' satisfaction and performance with smartphones, it was discovered that one of the benefits of smartphones is the ability to study anywhere and at any time, making learning more appealing. Ifeanyi and Chukwuere (2018), used a quantitative methodology with a sample size of 375 undergraduate students in South Africa to explore the impact of smartphone use on academic achievements. Data were obtained via questionnaire administration. The use of smartphones, according to the study, assists students in communicating with their classmates as well as their course masters/tutors.

Students also utilize their iPhones to demonstrate facts, images, and concepts. Smartphones promote students' learning activities in a variety of ways, according to the same study, including downloading study materials, recording live lectures, accessing lecture slides at a convenient time, assisting with research work, and completing assignments. In a similar vein, Almansour and Alzougool (2017), conducted a study on the usage of smartphone for learning activities by university students in Kuwait, findings revealed that smartphone use plays a significant part in students' learning activities. Students, for example, use cellphones to register for classes, check lecture timetables and test schedules, check grades, have group discussions, read notices, and pay school fees, among other things.

2.3 The Impact of the Use of Smartphone on Students' Learning Activities
According to Ifeanyi and Chukwuere (2018), depending on how a smartphone is utilized, it has both harmful and beneficial effects on students. The author underlines the negative side; he noted that smartphone has become a major study distraction and if not rigorously managed students who are attached to their smartphones have a high proclivity to check updates or notifications virtually every minute. Kibona and Mgaya (2015), opined that despite the remarkable advantage of smartphones in learning, they

are a double-edged sword because most of the programmes, including WhatsApp, Facebook, and games, negatively affect Tanzanian students on all levels due to their addictive nature. Lin et al.(2014) findings reveals that, excessive smartphone use causes issues such as vascular permeability, neck pain and musculoskeletal disorders.

Despite the fact that smartphone has countless benefits; there are some impediments that prevent students from adopting the smartphone for their learning activities. Gikas and Grant (2013) focused on students' experiences with mobile computing in higher education. The study found that students were hesitant to utilize a smartphone as a learning tool because of its small screen size compared to a laptop, which has a larger screen. In addition to this, Sarfoah (2017), found out that inconsistent or unpredictable internet access as major problem that prevents students from using smartphones as a learning aid.

There are numerous obstacles to making efficient use of cellphones for educational purposes. Some of these issues were also noted in a 2015 survey conducted among medical students and employees at Niger Delta University, Wilberforce, Bayelsa State, Nigeria (Ebiye, 2015). According to the findings, smartphones were found to have a positive impact on their medical education, particularly in terms of their ease and speed of internet access, high-speed browsing, the time and money saved by not having to go to an internet café or college library, and easy access to available online medical e-learning materials. However, the research found that certain conditions can counteract the good effects of smartphone use and induce frustration among students.

3.0 METHODOLOGY

The disparities in student's attitude and behaviours towards mobile phone usage at the Federal Polytechnic, Ado Ekiti, have called for the conduct of this research. This study aims to investigate the main uses of mobile phones using motivation and behavioural characteristics concepts, as well to determine the effects on the students in terms of learning process. A quantitative technique was employed to collect data from students during working hours at the Federal Polytechnic Ado Ekiti main campus, using a set of standardized questionnaires.

3.1 Participants

In November 2021, a quantitative study was done at the Federal Polytechnic, Ado Ekiti Main Campus. A total of 40 students were chosen at random from the various academic departments. Furthermore, the reason for the small number of participants is due to a time limitation and a large number of students.

3.2 Materials

A survey questionnaire was adapted and redesigned based on the results of a study conducted by Braguglia (2008) on cell phone usage among college business students. There are ten questions in all, divided into two sections: Part A for demographic information and Part B for research data. In order to meet the study's aims, the questions focus on the motivational and behavioural elements of mobile phone usage, as well as its consequences on learning.

3.3 Procedures

In the afternoon, all participants received a hardcopy of the questionnaire at the Main Campus Bus Stop. The anonymity of the respondents' responses to the research survey questions was first explained to them. Due to incomplete responses, a small percentage of the questionnaires were discarded. As a result, the respondents completed a total of 37 questionnaires, which were then processed and utilized in the form of percentages and other graphical representations using SPSS.

4.0 DATA ANALYSIS AND FINDINGS

A total of 40 questionnaires were distributed to students at the Federal Polytechnic, Ado Ekiti, with 37 of them (92.5%) being retrieved and evaluated for the purpose of data presentation. Tables, pie charts, and histograms were used to show descriptive analysis of demographic profile, length of time since respondents have been using phones, benefits of phone usage, and much more.

4.1 Respondents' Gender

The results obtained from the Field Survey revealed that, males accounted for 37.8 percent of the respondents, while females accounted for 62.2 percent.

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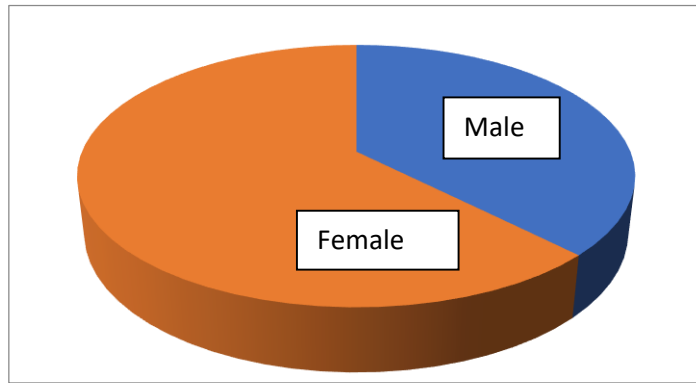

Figure 1. Sex of Respondents
Source: Authors' Field Survey, 2021

4.2 Age of Respondents

Here, a good number of the respondents are from the age groups 22-25 years representing 56.8 percent of the respondents followed by the age brackets 19-21 years representing 21.6 percent, respondents of ages 26-30 accounted for 13. 5 percent came next, while respondents within the group 31-35 representing 8.1 percent was at the rear as shown in Table 1.0

Table 1.0. Age of Respondents

Age of Respondents	Frequency	Percent
19-21	8	21.6
22-25	21	56.8
26-30	5	13.5
31-35	3	8.1
Total	37	100.0

Source: Authors Field Survey, 2021

4.3 Tribes of Respondents: The survey conducted revealed that the Yoruba speaking students recorded the highest number of respondents with 16 respondents representing 43.24 percent, while the Ebiras recorded 9 respondents representing 24.32 percent. Igbo came next with 5 respondents accounted for 13.51 percent, while Edo followed with 6 respondents and Hausa 1 respondent which amounted to 16.22 and 2.71 percent respectively. The large number of Yorubas in the study might be due to the location factor of the institution.
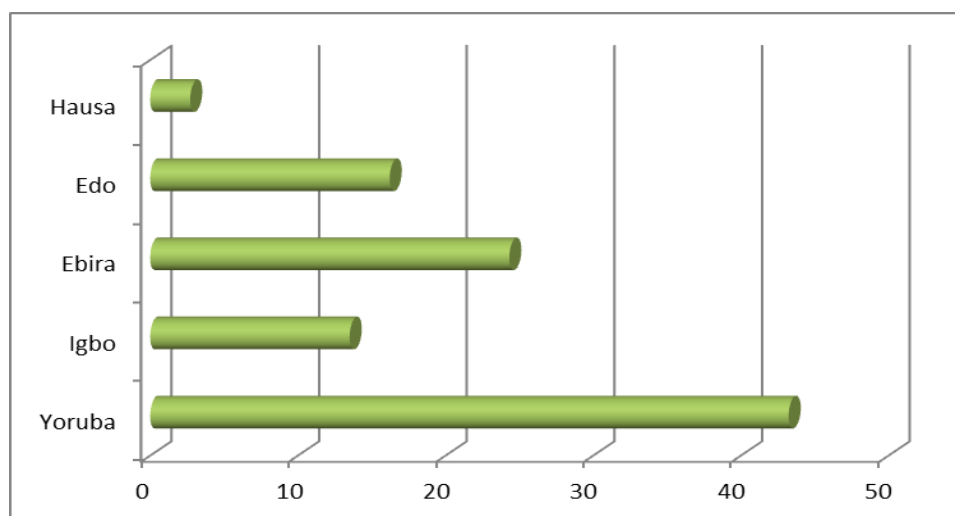

Figure 2. Tribes of Respondents
Source: Authors Field Survey, 2021

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4.4 Departmental Spread

Majority of the respondents are from Science Technology with 9 respondents representing 24.3 percent, followed by Architectural Technology with 6 respondents representing 16.2 percent. Both Food Technology and Computer Science were with 5 respondents representing 13.5 percent respectively. Office Technology & Management accounted for 10.8 percent of the respondents. Others from Civil Engineering and Surveying & Geo-informatics were with 2 respondents each representing 5.4 percent. Glass & Ceramics, Urban & Regional Planning, Mechanical Engineering and Elect/Elect each recorded 1 respondent representing 2.7 percent.

Table 2.0. Departmental Spread of Respondents

Departments	Frequency	Percent
Architecture	6	16.2
Civil Engineering	2	5.4
Surveying & Geo	2	5.4
Glass & Ceramic	1	2.7
Food Technology	5	13.5
Office Tech & Management	4	10.8
Urban & Reg. Planning	1	2.7
Science Technology	9	24.3
Mechanical Engineering	1	2.7
Computer Science	5	13.6
Elect/Elect Engineering	1	2.7
Total	**37**	**100.0**

Source: Authors Field Survey, 2021

4.5 Duration of Using Phone: From the survey carried out 54.1 percent were said to have been using smart phone for over 5 years, respondents using phone between 2-3 years accounted for 32.4 percent. Those who have used phone between 1-2 years constituted 2.7 percent. A total of 4 respondents representing 10.8 percent did not indicate the duration they have been using phone as shown in Table 3

Table 3.0. Period of Using Phone

Period of Using Phone	Frequency	Percent
1-2 years	1	2.7
3-4 years	12	32.4
5 years and above	20	54.1
No response	4	10.8
Total	37	100.0

Source: Authors Field Survey, 2021

4.6 Most Frequent use of Cell Phone: As shown in Figure 3.0, a total of 19 respondents use their cell phone for internet browsing which accounted for 51.4 percent, while text messages are next with 11 respondents representing 29.7 percent. 7 of the respondents accounted for 18.9 percent use the cell phone for only voice calls only.

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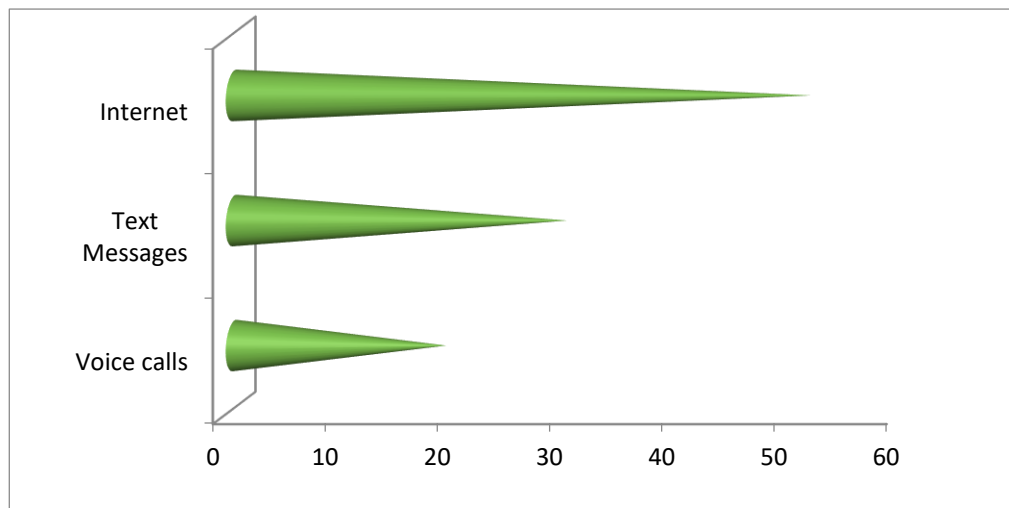

Figure 3. Most Frequent Use of Cell Phone
Source: Authors' Field Survey, 2021

4.7 Hours of Using Smart Phone: The results of the field survey conducted showed those who use their phone between 1-3 hours daily and this represent 48.6 percent, followed by respondents using phone for between 4-9 hours daily with 10 respondents representing 27.0 percent. 8 respondents use phone for 10 or more hours daily which accounted for 21.6 percent came next while respondents that use phone for less than 1 hour only recorded 2.7 percent

4.8 Frequency of text messages: As revealed from the survey carried out, respondents using their cell phone to send text messages 1-5 times a week were made up of 45.9 percent while 14 respondents using it for multiple times a day accounted for 37.8 percent. 5 respondents representing 13.5 percent chose rarely or once every few week only, only one respondent out of the all the respondents chose not to have used the phone for message sending.

4.9 Reason for Acquiring Cell Phone: The survey conducted and as depicted in Table 4.0 revealed that 14 respondents representing 37.8 percent acquired the cell phone for the sake of using it for emergency. 8 of the respondents acquired cell phone to keep in touch with their friends. Other social contact was represented by 21.6 percent. Those who said they acquired cell phone because everyone they know had one, has 7 respondents accounting for 18.9 percent. For good value of privacy management has 5 respondents representing 13.5 percent. Only 1 respondent use cell phone for accessing information representing 2.7 percent

Table 4.0. Reasons for acquiring cell phone

Reasons for Acquiring cell phone	Frequency	Percent
To use in case of Emergency	14	37.8
Everyone I know had one	7	18.9
To keep in touch with friends/other social contacts	8	21.6
Keep in touch with parents	2	5.4
For information access	1	2.7
Good value of Privacy Management	5	13.5
Total	37	100.0

Source: Authors' Field Survey, 2021

4.10 Educational Level: Results here showed that majority of the respondents are Higher National Diploma students with 22 representing 59.5 percent followed by the Ordinary National Diploma students having 13 respondents representing 35.1 percent. Two of the respondents representing 5.4 percent declined to reveal their educational levels.

4.11 Privacy of Phone Usage: The field survey carried out by the investigators reveals that, 11 of the respondents said they use cell phone to stay in touch with family representing 29.7 percent, followed by 10 respondents who use it to stay in touch with friends. Also, 3 respondents use their cell phone to direct some people to call their number which accounted for 8.1 percent, about 35 percent of the respondents kept quiet because of privacy management.

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4.12 Using cellphone During Class time: The survey shown in Table 5.0 revealed that 18 respondents representing 48.6 percent use cell phone during class time, and 51.4 percent of the respondents do not use the cell phone during class time.

Table 5.0. Using cellphone During Class time

Using Phone During Lectures	Frequency	Percent
Yes	18	48.6
No	19	51.4
Total	37	100.0

Source: Authors' Field Survey, 2021

4.13 Cell phone as Learning Tool: The field survey carried out revealed that 94.6 percent of the respondents admitted that they use their cell phone as learning tool while 2 respondents accounted for 5.4 percent.

4.14 Cell Phone Improving Students Performance: From the Field Survey carried out, it was shown that cell phone improves students' performance. The field work revealed that 25 respondents representing 67.6 percent use cell phone in search of information via internet and 13.5 percent use it in recording or taking lectures. 2.7 percent kept their notes in the phone. 6 of the respondents could were not categorical on how cell phone has helped them to improve on their performance.

4.15 Cell Phone interference with Learning: A total of 13 respondents representing 35.1 percent claimed that sometimes cell phones do interfere with their learning. Next to that are the respondents that claimed often cell phone do interfere with their learning this accounted for 32.4 percent. Seldom interference of cell phone with learning formed 18.9 percent of the respondents while 3 of the interviewed representing 8.1 percent said that, cell phone has never interfered with their learning. The remaining 5.4 percent of the respondents were indifferent to cell phone interference on their learning.

4.16 Phone Assisting in Learning: From the survey conducted, it was discovered that 40.5 percent of the respondents opined that phone usage often and sometimes assisted them in learning; while 3 of the respondents representing 8.1 percent said the use of cellphone seldom assist them in learning. Only one of the respondents said that phone usage does not assist in learning, 8.1 percent of the people interviewed declined to answer the way cell phone could assist in learning.

4.17 Phone Assist outside class study: 48. 6 percent of the respondents revealed that the use of cell phone found cell phone to be of assistance outside class study while 11 of the respondents representing 29.7 percent said that phone cell phone often assist in study outside classroom. The respondents with the opinion that cellphone seldom assist in learning outside classroom formed 10.8 percent. 2 of the respondents found phone usage to be of immense assistance in learning outside class study, while 5.4 percent of the respondents did not give their opinion as regard the use of phone outside their classroom studies.

4.18 Phone Distract outside Class study: From the responses gathered 14 respondents representing 37.9 percent opined that cell phone often distracts their attention outside class study while 12 of the respondents accounted for 32.4 percent of the survey revealed that sometimes cellphone sometimes distract outside class study. 6 of the respondents representing 16.2 percent said it seldom distract outside class study. 5.4 percent of the respondents could not ascertained whether cellphone usage distract outside class room study.

4.19 Upsetting News from Cell phone: 18 respondents representing 48.6 percent chose that sometimes that upsetting news received from the cell phone could cause distraction and eventual lost concentration. 24.3 percent believed that seldom upsetting news received on cell phone was a distraction and 13.5 percent said upsetting news often distract concentration from the use of cell phone. 2 members of the respondents did not volunteer their opinion on how they feel when received upsetting news from their cell phone.

4.20 Evaluation of Students Performance: A total of 22 respondents representing 59.5 percent of the students were medium performers, while 35.1 percent of the respondents said their academic performance were excellent. 5.4 percent of the respondents declined to reveal their academic performances.

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5.0 CONCLUSION

Students who used cellphones in their learning activities had a more favorable attitude about their studies. According to the research, these students took their studies seriously and were more likely to achieve good results in various courses. These students were able to access a large volume of information about their courses via the internet; they were able to learn anywhere due to the flexibility of carrying smartphones with them; they developed confidence; they were able to participate in class discussions because they had information; and they were also able to complete and submit their assignments quickly to their teachers. These elements help them develop independence in their studies and avoid relying too heavily on their lecturers. They are able to investigate knowledge outside of the classroom and create their own experiences, which become much more relevant during classroom learning, thanks to the use of cellphones. The ultimate result is an internal edge that motivates individuals to adopt a more positive approach toward learning. Though this study concluded that students' use of smartphones can help them establish a good attitude toward learning, it also discovered that some conditions can limit its effectiveness. These include using social media communication apps like WhatsApp in class while the lecture is still going on, as well as the small size of the smartphone screen.In comparison to PCs, the small size of smartphone screens makes it difficult to read and display a sufficient volume of information at one time. Smartphone users may become frustrated, and study time may be wasted as a result.

6.0 RECOMMENDATIONS

If the following strategies are implemented, the implications for mobile technology usage activities can result in significant savings and value without compromising educational achievements and will also enhance sustainable learning.

- Assist teachers in learning new teaching techniques that promote student involvement and assessment.
- Teachers should take on more of a facilitator role and keep track of "facilitator-student" parameters.
- Institutions must have methods in place to track and assess learning outcomes over time.

New ways are being developed to engage Millennia's in business (e.g. CSR) and in education (e.g. artificial intelligence and other technology) in the future of higher education (Ahmad, 2019c; 2020 ;). Finally, with the idea that in the future, "classrooms" will consist of students from many disciplines working together to solve problems utilizing their interdisciplinary and entrepreneurial skills.

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