

21st Century Learning: Reimagining Technology in the Classroom through the Lens of College Learners

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Abstract –*This study intent to explore and describe the experiences, coping mechanisms and insights of college students from a private college institution of Tagum, Philippines about the use of technology during their daily classes which answered the three fundamental research questions on what are the experiences of students in class from using technology, how do the students cope with their challenges encountered from using technology, what are the insights of students on the utilization of technology in class. The study utilized the qualitative research approach with two data collection techniques, the in – depth interview and focus group discussion. Triangulation was addressed through gathering of data from more than one source to gain a fuller perspective of the study. Moreover, this endeavour concluded that the impact of technology in schools is somewhere between the only way to make a positive change in schools and a new fad. Technology can be a strong tool for positive change if it is used in the right way. As a result, steps must be taken for technology to make a positive difference. Thus, school leaders must plan for technology and include everyone at the beginning of the plan, not after technology is implemented. Students must be allowed to use technology as a tool that enables them to collect, analyse, and create major projects. The quality, not quantity, of the time allowed for technology integration into the curriculum is the key to student learning.*

Keywords –*Reimagining Technology, Technology as a tool, Philippines*

INTRODUCTION

A nation's ability to adopt new technologies is paramount. It is a building block to achieve advancement and prosperity in all aspects. As reported by National Competitiveness Council Philippines, the Philippines climbed two notches from 74th to 76th out of the 143 economies assessed by the World Economic Forum (WEFO) for the Global Information Technology Report 2015, as the country continued to show improvements in terms of leveraging the benefits of information and communications technologies (ICT).

By this report, despite of appealing visions and endeavors initiated by public and private entities for the country to take advantage with technology, the status of ICT in the Philippines is still characterized with some identified barriers. Identified barriers in an effective utilization of ICT in the country are the following; inadequate financial support and infrastructure, human capital, management support, as well as behavioral and environmental aspects. The

country's geographical location is another factor to consider [1].

Access to the internet and computer in school and homes has increased as a result of changes in availability and pricing over that past 30 or more years, with wireless computing also be in existence for nearly 20 years [2]. Additionally, many public schools are implementing 1:1 laptop computer program to deal with access, mobility, and student engagement issues [3]. However effective technology integration in schools has yet to be realized [4].

ICT integration in education generally means technology-based teaching and learning process that closely relates to the utilization of learning technologies in schools. Due to the fact that students are familiar with technology and they will learn better within technology-based environment, the issue of ICT integration in schools, specifically in the classroom is vital. This is because, the use of technology in education contributes a lot in pedagogical aspects in which the application of ICT will lead to effective learning with the help and

supports from ICT elements and components. It is right to say that almost all ranges of subjects start from mathematics, science, languages, art and humanistic and other major fields can be learned more effectively through technology-based tools and equipment.

In addition, ICT provides the help and complementary supports for both teachers and students where it involves effective learning with the help of the computers to serve the purpose of learning aids [5]. Computers and technology do not act as a replacing tool for quality teachers but instead they are considered as an add-on supplements needed for the better teaching and learning. The need for ICT integration in education is crucial, because with the help of technology, teaching and learning is not only happening in the school environment, but also can happen even if teachers and students are physically in distance.

In 2002, the Restructured Basic Education Curriculum was conceived. This aimed to implement an interactive curriculum that promotes integrated teaching and disciplinary, contextual and authentic learn in. Interactivity is made possible with the use of technology in instruction and the greater emphasis on computer literacy in all learning areas in every school where equipment is available.

Consequently, the Philippine Education Technology Master Plan has the following operational targets by the year 2009: (1) all public secondary schools shall be provided with an appropriate educational technology package; (2) 75% of public secondary schools shall have a computer laboratory room equipped with basic multimedia equipment; (3) all public secondary schools shall have an electronic library system; (4) 75% of public secondary schools teachers shall have been trained in basic computer skills and the use of Internet and computer-aided instruction; (5) all learning areas of the curriculum shall be able to integrate the application of ICT, where appropriate.

Data and information available show that the Philippines has eagerly embraced ICT in education. With facilitation by the Department of Education, and collaboration with the private sector, several initiatives have successfully equipped a number of schools with ICT facilities. Nevertheless, the initiatives have not insured that teachers fully use the facilities for teaching purpose [6]. However, it is an important issue that schools need to consider and assess.

Moreover, in Tagum City, has eagerly embrace ICT integration in Education. Technology has become knowledge transfer highway for both teacher and students. Nowadays the significance of technology integration in education field is well known. Technology helps the learners and teachers in studying the course materials easily due to the fast access. The integration of technology has changed the methods from teacher-centered to learner-centered. Teacher here in this institution already practice this teaching strategy due to the good effect for the teaching and learning process. But with the fast-growing population of the school it is very impossible to accommodate all the students due to the shortage of ICT components of the school it only has more or less 50 units. In addition, some of the teachers here are seasoned and entrant teachers they don't have enough experience in terms of using ICT in the classroom.

Furthermore, the importance of this study was to unveil the different perspectives of college learners in using technology in the classroom and to find out how they adopt this digital generation learning. Findings of this study will be a great help to the teachers, researchers, students and future researchers. In addition, this would provide an idea to an authority to enhance and modify our educational system not just for the higher education but to those who were in public. Moreover, this would provide a foundation of knowledge on the need to intensify the use of technology in education, on how it improves learning, how it enhances and makes students creative towards modernity. Thus, this opens up the possibility of the country to be with the other country in terms of providing globally and competent learners. Furthermore, future researchers will benefit from the result of this study. Specially in conducting more specific and critical research and they will have idea on how they will manage their study.

OBJECTIVES OF THE STUDY

The overall purpose of this study was to know the experience of the learners who use technology in the classroom and the development of learners learning process. Our inquiry was directed at examining the experiences of learners in using technology and learners thinking process and understanding of themselves as they make the transition to learning through the use of technology. In other words, the aims in this research are to understand what are the lived experiences of learners from using technology in classroom.

Moreover, the purpose of this phenomenological study was to rediscover the different point of views of students in Tagum City College of Science and Technology Foundation Inc. In the utilization of technology in the classroom at this stage in the research, Information Communication Technology is defined as technology-based teaching and learning process that closely relates to the utilization of learning technologies in schools.

METHODS

To develop this endeavor, we reflect methods demonstrated previous studies on technology integration [7]. By doing so, we contribute to the overall reliability of this study and conclusion drawn from data analysis. This study was qualitative in design qualitative research is concerned with “understanding how people interpret experience, how they construct their world, and what meaning they attribute to their experience”.

Qualitative research according to [8], is a kind of inquiry exploring phenomena in their natural settings. It uses multi-methods to interpret, understand and explain them. It is therefore, “understanding experience as nearly and its participants feel it or live it”.

In qualitative researchers believe that “there are multiple realities represented in participant perspectives, and that the context is crucial in providing an understanding of the phenomenon being investigated” [9]. A qualitative research tries to reveal the meaning embedded in people’s experience. However, the meaning is explained through the investigator’s own perception [10].

Moreover, a qualitative research is directly concerned with experience as it is “lived”, “felt”, or “undergone (p. 7) Therefore, qualitative research depends on the views of participants in the study [11]. Hence, this study, due to the nature of the problem and the research question, employed a qualitative approach to investigate the case with the detailed and intensive and experience of those people involving in teaching and learning activities with respect to educational technology.

This phenomenological approach will be the guiding tool of our study. We will bring together the simplest to complex parts of the story to create a very interesting study. We will put in a nutshell all the unnecessary to inevitable events to come up with-kept-an-eye study. Therefore, as researcher, we will

make every bit of our study keep and can be a useful written evidence to everyone [11].

Research Participants

In this phenomenology study, the participants of the study were the learners in Tagum City College of Science and Technology Inc. who experience the challenges in using technology. The researcher selected the participants considering the criteria particularly those learners who was already 18 years old above and formerly enrolled in Tagum City College of Science and Technology Inc.

A purposive sampling of 5 to 25 individuals was utilized in this phenomenology study [20]. In connection, there were 14 informants qualified to participate in the study. The identified informants were classified into two groups; seven (7) for focused group discussion (FGD), while the other seven (7) are for in-depth interview.

In addition, the researcher describes the lived experiences of every participants or informants about the phenomenon as describe by the chosen interviewees who were appropriate for the study and had a potential to answer the research questions.

Data Analysis

After collecting and organizing data, it was then presented to an experts or authority for the data evaluation for the purpose of having data accuracy and validity whether it is real which is coming from the source or coming from anyone which is unknown and imagine [12]. Content analysis was used to analyze the data which was gathered from personal interviews. According to Moore & McCabe [13], this is the type of research whereby data gathered is categorized in themes and sub-themes, so as to be able to be comparable. A main advantage of content analysis is that it helps in data collected being reduced and simplified, while at the same time producing results that may then measure using quantitative techniques.

Moreover, content analysis gives the ability to researchers to structure the qualitative data collected in a way that satisfies the accomplishment of research objectives. However, human error is highly involved in content analysis, since there is the risk for researchers to misinterpret the data gathered, thereby generating false and unreliable conclusions [14].

In addition, the aim of this study can have several aims. First aim has been to describe a phenomenon in some or greater detail. The phenomenon can be the

subjective experiences of specific participants in which are part of this study. This can focus on the learner’s experience of using technology in the classroom. This study also focuses on comparing several cases of the students and on what they have in common or on the differences between them. The second aim has been to identify the conditions on which such differences of the participants are based. The third aim may be to develop a theory of the phenomenon under study from the analysis of empirical material through our survey.

Ethical Consideration

Ethical consideration in research is critical. Ethics are the norms or standards to conduct that distinguish between right and wrong. They help to determine that differences between acceptable and unacceptable behaviors on the part of the research. Ethical considerations are so important in research because of the integrity, reliability, and validity of the research findings that rely heavily on the adherence to ethical principles. The readers and the public want to be assured that researchers followed the appropriate guidelines for issues such as safety and so on. Ethical consideration needs honesty and integrity to conduct a possible study. It is to protect the rights of every individual human being.

Before gathering the data, we must produce a written permission and informants’ consent to conduct the research. We will inform the informants about the purpose and objective of the study, and the procedures

on how to collect data. Since this is an experience based, we assured that there is no right and wrong answers.

Respect for person and consent are one of the ethical principles to be observed. Researchers must inform the informants involved in the study. It includes the rights of every informant to know about the study, to voluntarily participate or to withdraw without any cost or penalty. Consent is needed for the negotiation or trust [15].

RESULTS AND DISCUSSION

This section presents the result of the gathered data from the response of the informants and participants. Their responses were based on the qualitative research questions of the study.

Promotes Learning

Technology is a tool that supports knowledge construction for indicating learners’ opinions, understandings, and beliefs and producing organized knowledge bases by learners. Technology is an information vehicle for finding knowledge to support learning by making for accessing the necessary information and comparing beliefs and worldviews. It is a real context to support learning by doing for showing and arousing meaningful difficulties, situations, and contexts, revealing beliefs, views, arguments, and defining a controllable problem space for students’ thinking [16].

Table 1. Students Experience of using technology

Essential Themes	Core Ideas
Promotes Learning	<ul style="list-style-type: none"> It is important because we can research and learn easily through technology. Also, it can give us benefit to really understand our lesson. To make the learning process easy, especially in studying and we can get a lot of information through it” The importance of technology for learners it helps a lot, to have an advance or wide learning when there is technology.
Difficulties in using technology	<ul style="list-style-type: none"> My first encounter using computer, it’s difficult when there are things unfamiliar to me but as time pass by, I develop my learning and feel amaze with it. During the first-time technology is integrated in our class discussion it is quite difficult for me because I am not use to it. Well as for me during first time technology is integrated in our class it is quite easier at first, but as time goes by it was not easy as what I’veexpected because you know technology corresponded with complexity of situation or process rather than with practice and with proper guidance by our teacher it can be attainable.
Knowledge Dispenser	<ul style="list-style-type: none"> We need technology in the classroom to make the class discussion more efficient. I think technology is important because we can research and create a power point to our report. For the importance of technology for leaners again it makes our work easier and comfortable. Of course, when we say technology it’s all about the ideas and information when we use technology.

Researchers found that most students believe that their learning is improved by integrating technology into classroom curriculum. Students participating in the study reported that using technology in school makes learning fun and helps them learn more [17].

Red Stated having technology can help in understanding the lesson.

“It is important because we can research and learn easily through technology. Also, it can give us benefit to really understand our lesson”. (IDI_Red_001 Line 2-4 page)

Blue also stated that he gets a lot of information and also it can make his study easy.

“To make the learning process easy, especially in studying and we can get a lot of information through it” (IDI_Blue_002 Line 102-103 page)

Orange describe that technology is important in learning.

“The importance of technology for learners it helps a lot, to have an advance or wide learning when there is technology”. (IDI_Orange_006 Line 286-288 page)

Difficulties of Using Technology

Although students are generally tech savvy, and thus able to manage computers well, lack of computer literacy is a major issue among students today. Many of them cannot operate basic programs such as Microsoft Word and PowerPoint and therefore are not able to handle their files. Furthermore, many students find fixing basic computer problems troublesome, as they have no knowledge in this area. However, technological proficiency is a must for following online courses, as it enables students to manage their assignments and courseware in an organized manner without struggling. Basic courses in computer literacy enhance students’ knowledge in the field; having a fundamental knowledge of computer hardware would help them participate in online classes without interruptions and hindrances.

Orange experience difficulties of using computer

“My first encounter using computer, it’s difficult when there are things unfamiliar to me but as time pass by, I develop my learning and feel amaze with it.” (IDI_Orange_006 Line 283-285 page)

Green Experience difficulties of using technology

“During the first-time technology is integrated in our class discussion it is quite

difficult for me because I am not use to it.” (IDI_Green_007 Line 320-321 page)

Pink shared that during the first time they use technology it was not easy.

“Well as for me during first time technology is integrated in our class it is quite easier at first, but as time goes by it was not easy as what I’ve expected because you know technology corresponded with complexity of situation or process rather than with practice and with proper guidance by our teacher it can be attainable.” (FGD_Pink_004)

Brown stated that technology corresponded a lot of experiences.

“For me during the first time I encounter technology inside our classroom it is quite difficult and also challenging in my part because my classmate is already skillful when it comes to technology.” (FGD_Brown_001)

Knowledge Dispenser

Education technology can make learning more interactive and collaborative and this can help students better engage with course material. Rather than memorizing facts, they learn by doing. This could be as simple as taking an interactive quiz in class or participating in tech-enabled group discussions or as involved as playing educational games, practicing science experiments in a virtual lab or taking a virtual field trip.

Red shared that technology make the class more efficient

“We need technology in the classroom to make the class discussion more efficient.” (IDI_Red_001 Line 8-10 page)

Blue observed that through technology he can improve his report.

“I think technology is so important it is because we can research and create a power point to our report”. (IDI_Blue_002 Line 48-49 page)

Peach claimed that technology gives a lot of ideas and information.

“For the importance of technology for learner’s again it makes our work easier and comfortable. Of course, when we say technology it’s all about the ideas and information when we use technology”. (IDI_Peach_005 Line 217-220 page)

Table 2. Coping Strategies from Using Technology

Essential Themes	Core Ideas
Time Management	<ul style="list-style-type: none"> • When we say limitations, we should know how to manage our usage of technology, do not relay everything in technology you should also study on your own. • Time management, during class hour do not use cellphone or any kind of technology. • For me you should use what is being required by you teacher do not go beyond the limit
Change Academic Performance	<ul style="list-style-type: none"> • So, we always adjust to technologies, there are that are times that we apply technology during class, some students are distracted in which their focus is on the technology itself not on the discussion. Their attention will be on their cellphone and technology. • For me the main role of technology play in education it gives impact towards the students so that they could use technology in a good way. • As what I said a while ago, our knowledge is not enough if we don't use technology it is because through technology our learning is enhanced and our knowledge increase.
Student Guide	<ul style="list-style-type: none"> • For me technology is like a teacher that serve as a guide. Technology teach us more knowledge rather than teacher. • Yes, if you have report you need to use a power point presentation aside from that it makes your report more presentable and you can deliver thoughts clearly. • I challenge myself to study more and to enhance my skills in using technology

Time Management

Students will use the time management to cope with the use of technology. Time management is very important and it may actually affect overall performance and achievements. However, all of these are related by how individuals manage their time to suit their daily living or to make it flow steadily with their routines. Conducive settings and environment individuals will surely promote positive outcomes to the students, besides having good lectures given by their teachers. Nevertheless, students' time management can be considered as one of the aspects that can move a student to be a good student.

A good time management is vital for students to shine. However, some of the students do not have a good time management skill that has negatively affect their life and their academics. The usage of time by students in higher education institutions is related to their daily routines and activities. Students' time management can also affect stress level of students as they need to cope with their tasks and their personal achievements.

There are a lot of cases with people who waste their lives in discolored doings and attain very small since they are placing their labors into the incorrect responsibilities or weakening to focus their activity successfully, established that two-time management workings directly affect the collective academic achievements.

Red Stated that do not be dependent on technology

“When we say limitations, we should know how to manage our usage of technology, do not relay everything in technology you should also study on your own.” (IDI_Red_001 Line 22-23 page)

Blue argued that we should practice time management “Time management, during class hour do not use cellphone or any kind of technology.” (IDI_Blue_002 Line 74-75 page)

Magenta share that do not go beyond what is require by teachers

“For me you should use what is being required by your teacher do not go beyond the limits.” (IDI_Magenta_003 Line 116-117page)

Change in Academic Performance

Technology is a powerful contributor to learning it is used to deepen learners’ engagement in meaningful and authentic curriculum [18]. Technology is a learning tool. It should be chosen when it is the best tool for learners to learn. Technology can be an effective tool for language learners. Learners should start using technology tools as an important part of their academic program.

Blue Stated that students got distracted while using technology during classes

“So, we always adjust to technologies there are times that we apply technology during class, some students are distracted in which their focus is on the technology itself not on the discussion. Their attention will be on their cellphone and technology.” (IDI_Blue_002 Line 60-65)

Peach describe that technology is beneficial to students “For me the main role of technology play in education it gives impact towards the students so

that they could use technology in a good way.” (IDI_Peach_005 Line 247-249 page)

Black opined that technology enhanced learning and our knowledge increases

“As what I said a while ago, our knowledge is not enough if we don’t use technology it is because through technology our learning is enhanced and our knowledge increase.” (IDI_Black_004 Line 183-186 page)

Student’s Guide

ICT enables learners to learn according to their own pace and level and they can control their learning, urges active learning rather than passive, promotes physical and mental abilities of learners, and involves learners in study and data analysis, so facilitates higher-levels of thinking process [19].

Pink claimed that technology serves as a guide for students

“For me technology is like a teacher that serve as a guide. Technology teach us more knowledge rather than teacher”. (FGD_PINK_007)

Red describe that technology enhance the technical skills of students

“Yes, if you have report you need to use a power point presentation aside from that it makes your report more presentable and you can deliver thoughts clearly.” (IDI_Red_001 Line 25-28 page)

Magenta shared that technology challenge students to study more

“I challenge myself to study more and to enhance my skills in using technology.” (IDI_Magenta_003 Line 111-112 page)

Skills Enhancer

Technology could be used as a tool for performing meaningful projects to engage learners in critical thinking and problem solving. Technology can be used to restructure the language classes to produce an environment that promotes the growth of thinking skills. Technology increases learners’ cooperation.

Red describe that technology is helpful in making a data program

“It is helpful like how to use computer, data programming.” (IDI_Red_001 Line 40-41 page)

Blue Shared that it enhanced our understanding and skills

“Yes, because technology enhance work and skill and also people learn a lot from technology through research.” (IDI_Blue_002 Line 87-88 page)

Black argued that technology helps in her learning and also, she knows how to use different apps

“The impact of ICT for me I learn a lot from it, I learn how to encode use different apps and how to make power point presentation.” (IDI_Black_004 Line 206-208 page)

Table 3. Insights and Opinion of Students from using Technology

Essential Themes	Core Ideas
Skill Enhancer	<ul style="list-style-type: none"> It is helpful like how to use computer, data programming. Yes, because technology enhance work, skill and also people learn a lot in technology through research. The impact of ICT for me I learn a lot from it, I learn how to encode use different apps and how to make power point presentation.
Make Study Easier	<ul style="list-style-type: none"> Technology is useful specially in reviewing lessons As what I’ve said we can study without technology, but if we use technology in our study, we can create thoughts and ideas that’s why technology is helpful in our study. As a student my perceptions about technology it is helpful to everyone. In which this technology can pass through generation to generations.

Make Study Easier

The findings obtained from this research study towards the effect of technology on learning revealed that learners increased their learning through incorporating technology into their classes. The researchers emphasized that technology made learners’ learning interesting and interactive and increased their motivation, social interactions, and engagement.

Red claimed that technology helps in reviewing lessons

“Technology is useful specially in reviewing lessons.” (IDI_Red_001 Line 34 page)

Black opined that using technology can help you create new area of ideas and knowledge.

“As what I’ve said we can study without technology, but if we integrate technology in our study, we can create thoughts ideas that’s why technologies helpful in our study.” (IDI_Black_004 Line 201-203 page)

Orange claimed that technology make her study easy. "I use technology to make my study easier and faster". (IDI_ Orange_007 Line 349 page)

CONCLUSION AND RECOMMENDATION

This study concluded that the impact of technology in schools is somewhere between the only way to make a positive change in schools and a new fad. Technology can be a strong tool for positive change if it is used in the right way. As a result, steps must be taken for technology to make a positive difference. School leaders must plan for technology and include everyone at the beginning of the plan, not after technology is implemented. Teachers must change the way they teach and must on occasion become facilitators. Classrooms must take on student-centred learning methods. Students must be allowed to use technology as a tool that enables them to collect, analyse, and create major projects. The quality, not quantity, of the time allowed for technology integration into the curriculum is the key to student learning. Technology is not the entire solution for keeping "at-risk" students in the classroom, but it is a start in the right direction.

Moreover, this study was only confined from a private college institution of Tagum City, Philippines where the prospective participants or informants are located. The testimonies and statement of the college students who encountered such problems and challenges in educational setting are described and will be documented in this study.

The range of this study is delimited and aimed only at exploring the experiences of the college students, perspective on how the integration of ICT in class aids learning, their coping techniques and strategies, and insights they can share to their peers, classmates, and to the institution in general. This study delimits also on describing and understanding their personal views on the significant role of introducing ICT in teaching.

Moreover, the limited number of the informants is the factor which serves as the perceived weaknesses of this study which may not allow this research to achieve the expected generalizability of this study. Due to the minimal samples who participate in the study, the researcher does not guarantee that it represents the entire number of claims of having achieved the valid output and conclusions. furthermore, another limitation of this study is the difficulty in knowing the extent of accuracy of those memories which already happened same time in their lives when the participants are asked to recall the

experiences. Thus, further research may be conducted throughout SUC's on the use of ICT in class to achieve data validation and accuracy.

Furthermore, this research may serve as an avenue to study also the different characteristics of the teachers dealing with the lesson using ICT.

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