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Enabling Motivated Instruction Outcomes through Technology Access

Maria Katrina S. Macapaz

Researcher, Cebu Technological University - Barili Campus, Barili, Cebu, Philippines

ABSTRACT

The research was conducted at Cebu Technological University Barili Campus, Barili, Cebu as a bases for Proposed Curriculum and technology integration Instructional Guide Through Departmental LAC sessions to strengthen the Domains & Objectives during actual instructional setting. The 650 respondents (600 Students & 50 Teachers) distributed from three secondary schools in Toledo City Division namely: Luray II National High School, Matab-ang National High School & Toledo City Science High School wherein Descriptive – Correlation & Purposive sampling was used for the distribution of survey questionnaire instrument which aims to assess the level of technology Implementation integration in instruction in senior high school curriculum through its domains & objectives such as classroom activities, Research Works, Product/Performance Task Monthly School Celebration Activities, Faculty Professional Communication, Learners Extrinsic motivation towards academics & Learners Monthly Percentage Attendance as well as to determine the barriers and challenges occur during the implementation of technology integration towards curriculum instruction a basis for upgraded instructional guide to be developed. Gathered data were treated using total weighted points, weighted mean, and correlations. Based on the findings and after a careful analysis and interpretation of the study, it is concluded that enabling motivated instructional guide through technology access is the best way to enhance learners 21st century skills.

KEYWORDS: *Technology in Education, Global competitiveness, Curriculum instruction & Domains, Level of implementation towards technological advancement*

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1. THE PROBLEM AND ITS RESEARCH DESIGN

INTRODUCTION Rationale

Technology, in its most advanced type, has already been introduced in education in most developed countries. The rest of the world too, is eager to make technology a common Place in the area of education, regardless of what good or bad it has to offer. As we embark on the Fourth Industrial Revolution, it is clear that technology will play a central role in nearly all aspects of our lives. Research by the "World Economic Forum" estimates that 65% of children entering primary school will find themselves in occupations that today do not exist. By 2020 it's estimated there will be 1.5 million new digitized jobs across the globe. At the same time, 90% of organizations currently have an IT skills shortage, while 75% of educators and students feel there is a gap in their ability to meet the skills needs of the IT workforce. To prepare the talent needed for the digital economy, education must adapt as fast as the demand for IT skills is growing and evolving.

Insights into the influence of psychological, social, cultural and environmental factors on how we learn are emerging from "the new science of learning". This approach to understanding education argues that in our complex and rapidly evolving world today, academic models based on interdisciplinary research are necessary to create effective teaching and learning environments. While experts believe that the human psychology behind learning has not changed vastly over time, the external factors affecting how we comprehend, retain and receive new material are constantly evolving. As the digital revolution accelerates, technology gives us exciting opportunities to shape learning experiences and achieve learning goals.

At the same time, it is important to recognize the role that a human teacher will always play in the classroom. They have a unique and personal insight into each learner's progress, serving as a role model and local expert, and providing inspiration in a way technology itself cannot.

In United States, blended learning opportunities incorporate both face-to-face and online learning opportunities. The degree to which online learning takes place, and the way it is integrated into the curriculum, can vary across schools. The strategy of blending online learning with school-based instruction is often utilized to accommodate students' diverse learning styles and to enable them to work before or after school in ways that are not possible with full-time conventional classroom instruction. Online learning has the potential to improve educational productivity by accelerating the rate of learning, taking advantage of learning time outside of school hours, reducing the cost of instructional materials, and better utilizing teacher time. These strategies can be particularly useful in rural areas

where blended or online learning can help teachers and students in remote areas overcome distance. Americans believe that open educational resources in teaching, learning, and research resources that reside in the public domain are freely available to anyone over the Web.

Indeed, Philippines implementation of K t o12 curriculum specially the curriculum itself emphasizing the enhancement of domain for listening & viewing and actual hands-on experience based in their chosen "SHS" track to cope with its general vision to promote holistic, literate and quality citizenry whose skills will strongly compete the changes brought by 21st century globalization success. K to 12 curriculum gives an edge for every young Filipino to cope of the modernization far from the traditional previous Philippine Curriculums has to offer. The teachers were ready to infuse their classroom lesson plans with a variety of technology and assigned students activities that involved creating brochures, creating PowerPoint presentations, and using video cameras. This rush of technology could be seen in almost all of the regular classes in every public schools. However, the success of technology integration in every lessons to conduct from every subject's competencies to master per quarter, depends on teacher's level of technology skills, the availability of gadgets, the physical settings if these aspects cannot be achieved there was a slow return to traditional classroom instruction, leaving PowerPoint presentations, use of Publisher, and video production behind. Students are still using word processing programs and completing a few scattered technology projects, but the flurry of technology use is over. At-risk students' grades have dropped due to lack of extrinsic motivations along with students' attendance in some or, for a few, in all classes after use of technology was dropped as the study proves that there is great significant value that technology motivates and ignite learner's curiosity to continue embracing the learning techniques of the facilitators.

The learners who are now in grades K-12 will graduate high school over the next 12 years, and more jobs will be technology-based than in previous years. Even if a student decided to work at a fast food restaurant the rest of his/her life, he/she would have to learn to work the cash register, which is computerized. In addition, the rising use of the Internet has brought people together from all over the world. People in the BPO industries in the Philippines are able to do business with people in Spain, United States, and all over parts of the world via the Internet, just for example.

Theoretical Background

Since the 20th century, some major educational theories, such as Behaviorism, Cognitivism, Constructivism and Multiple Intelligence, have been widely implemented in education, greatly linked to the development and utilization of the educational technology. *Ivan Pavlov (1849-1936)* Russian biologist and psychologist, innovated behaviorism**,** *Edward Thorndike(1874-1949)* American educator and psychologist of Columbia University and *Burrhus Frederic Skinner(1904-1990)* one of the founders of American new behaviorism, further developed the behavior theory. *Behaviorists* believe external stimulation influences one's leaning behavior, rewards and punishment can change one's learning performance took over. Researchers and scholars confirmed that Behaviorism has greatly promoted and effectively implemented in *programmatic instruction***,** and has strongly promoted and widely applied in computing-assisted-instruction and the development of educational technology. *Cognitive theory* concerns those mental processes that cannot be observed through human beings' problem solving process and human beings' learning strategies. It studies human brains' thinking process. *Cognitivists* believe that a human being possesses intrinsic modes of receiving, processing and utilizing information at different cognitive development stages; advocate the study of people's cognitive development processes and models, and design different instructional programs based on one's cognitive development needs at different developmental stages. This theory is represented by ***Jane*** *Piaget(1896-1920), Jerome Seymour Bruner(1915-2016) and David P. Ausubel(1918-2008).* In education, cognitive developmental theory is to develop students' capabilities of creative thinking, information analyzing, and problem-solving through computer-assisted instruction.

Constructivist theory is in favor of letting students to construct their point of view of the world, philosophy of living, technical expertise, and knowledge structures; emphasizes one's learning initiative, and social and situational learning experiences. The core of this theory is discovery learning. Students learn by doing. ***John Dewey*** a well-known educational psychologist, believed that practicing is a foundation of learning, and without learning practice, students would get lost. He stressed that students construct their knowledge in practice, and instructional design should respect students' psychological development needs. Former ***Soviet psychologist Vygotsky*** proposed a social constructivist theory that emphasizes one's social and cultural backgrounds to determine one's behavior. He believed human's growth is a product of culture.

The influence of Constructivist theory on the development and implementation of educational technology is mainly reflected in the pioneering educational games, multimedia development and dynamic online interactions. ***The theory of multiple intelligences stresses everyone has his or her own unique intelligence.****If curriculum, instructional contents, methods, and learning environment can fit into individual student's unique intelligence, the instruction and learning will become much more effective. According to research, currently there are nine multiple intelligence.*
1) linguistic intelligence 2) logic-mathematical intelligence 3) spatial intelligence 4) bodily-kinesthetic intelligence 5) musical intelligence 6) interpersonal intelligence 7) intrapersonal intelligence 8) naturalistic intelligence 9) existentialist intelligence

Once Howard Gardner put forth the "multiple intelligence theory," at the start of the year 2002 this theory quickly caught the attention of educators and spread across the world. The research of this theory has positively promoted and guided effective use of educational technology to optimize individualized instruction.

Also, According to ***Saloman's(2016) r***esearch, media symbol system applied to access of knowledge has multiple effects. First, media symbol system can particularly emphasize different instructional contexts. Second, media symbol system can maximize the convenience of information storage. Third, the different media symbol coding can help different psychological learners learn. Fourth, the media

symbol system can meet different needs of information processing. Fifth, media symbol system can simulate human brain to store and process different information. Therefore, symbol systems to a certain extent determine how people obtain knowledge, access to what information and how much information. If media has no symbol system, it is the same as having no numeric numbers in mathematics (Moore & Hall, 2015).

According to ***Postman (2016), "Technology is ideology***. To be unaware that a technology comes equipped with a program for social change, to maintain that technology is neutral, to make the assumption that technology is always a friend to culture, at this late hour, stupidly plain and simple" (p. 135). While some changes brought by technology have been positive, some issues remain unresolved. For example, students often complain of PowerPoint abuse by teachers, wasted time fumbling with projectors or software, unmediated chat rooms, and wasted time teachers spend teaching web tools and not content. However, these same tools can be highly beneficial to students if they are used along with a sound instructional method. Teacher complaints toward integrating technology tools into the classroom include no training, no compensation for completing training, long hours learning new technology tools, and poor distribution of technology tools among teachers.

The government is interested in assessing student achievements after adding technology tools into. However, even the government admits more than a standardized test must assess the success of technology use in the classroom.

Progress using technology is ever evolving in other aspects of society, but education seems to be stuck in a rut. The current pedagogy, and the individual schools have trouble adjusting to the changing times and face many obstacles from funding, bureaucracy, and doctrine. There are many different avenues to change, but researchers agree that teacher development is the most effective and efficient way to institute change. (*Cornu 2016*)notes that teachers teach as they were taught, so preservice teachers should be taught using technology, not about how to use it. (*Ertmer,2016)* agrees with this sentiment (*Bai and Ertmer 2016).* In "Creating an Environment for Pre-Service Teachers to Develop Technical Pedagogical and Content Knowledge," Chun Hu explains that preservice training is important, but continued education is needed after teachers enter their positions. In the study, Hu studied a twelve week preparation program offered to post-graduate new teachers. Throughout the course of the study, the pre-service teachers made some improvements in their technical knowledge, but the percentages were not immense; however, professional development takes time and the small 20 percentage increase would grow larger over time. The development of teachers' technology, pedagogical, and content knowledge "relies on constant professional development in which awareness created during pre-service education would serve as a foundation" which will enhance every teacher's strategies *(*Hu 126*).* By exploring teacher training and professional development, we will learn even more fully what problems they are facing about how to overcome them.

Lastly, In any field, the people who apply the changes in a practice are the ones who determine the success of the changes and "every reform effort should take into consideration the knowledge, skills, beliefs, and attitudes of the people who will implement the changes" *(Angeli and Valanides 2017*). Teachers are the people who interact with the students, parents, and administrators on a daily basis. The teachers get handed a set of standards or benchmarks that they must meet, and how they implement the standards is usually up to them; although there are some standards for technology being developed, teachers currently are the one required to integrate technology into their classrooms. (Aust, Newberry and O'Brien 2017***)*** observed that the level of technology integration even in American schools was low, and believing that teachers were unable to integrate effectively, they created a learning cohort.

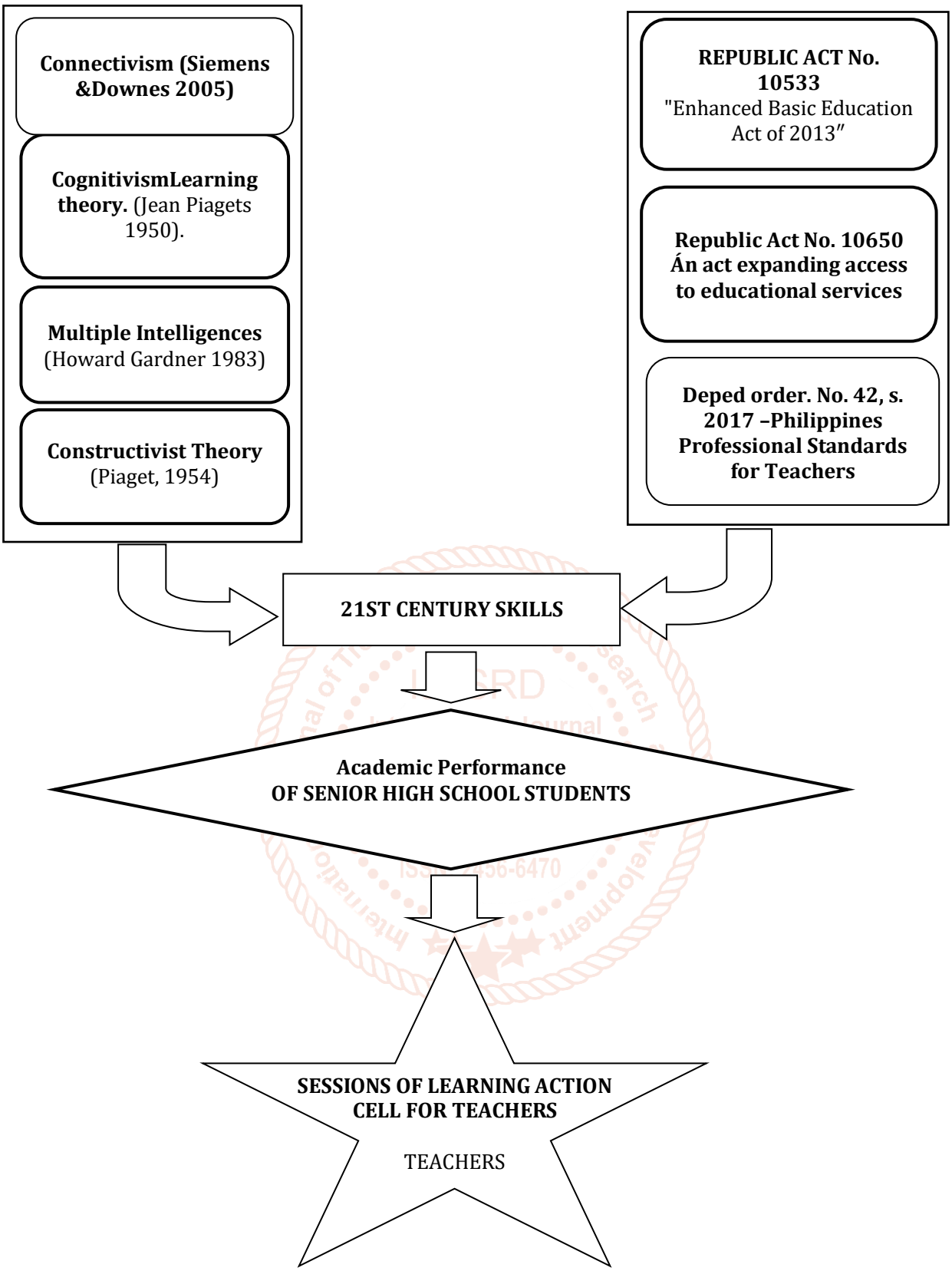

Figure 1 Theoretical Framework of the Study

Statement of the Problem

This research assesses the level of technology Implementation integration in instruction at the identified Schools: Luray II National High School, Matab-ang National High School & Toledo City Science High School during School Year 2019-2020.

Specifically, it seeks to answer the following questions:

1. What is the related information as regards:
1.1. Teacher's Profile:
1.1.1. Age
1.1.2. Gender

1.1.3. Number of years of teaching,
1.1.4. highest educational attainment
1.1.5. total amount of relevant training/seminar attended
1.1.6. subject taught and its value for technology integration
1.1.7. teaching class size

1.2. Profile of students:
1.2.1. Age
1.2.2. Gender
1.2.3. chosen SHS Track;
1.2.4. specialization
1.2.5. multi-media available at home
1.2.6. experience of using the Internet
1.2.7. attitude towards technology usage
1.2.8. learners interaction on curriculum and technology integration

1.3. Schools Technology Resources:
1.3.1. Handheld devices
1.3.2. Technical Shop Equipments
1.3.3. Computers; tablets
1.3.4. LED/Smart TV's ; Projectors
1.3.5. Audio devices

2. As perceived by the respondent groups, what is the level of implementation of technology integration in the following instruction domains.
2.1. classroom activities
2.2. Research Works
2.3. Product/Performance Task
2.4. Monthly School Celebration Activities
2.5. Faculty Professional Communication
2.6. Learners Extrinsic motivation towards academics
2.7. Learners Monthly Percentage Attendance

3. Is there significant relationship between the identified information variables and level of implementation?

4. What are the barriers and challenges occur during the implementation of technology integration towards curriculum instruction?

5. Based on the findings, what upgraded instruction guide can be developed?

Significance of the Study

The research focused on *"Enabling Motivated Instruction Outcomes through Technology Access"*. It is mainly designed for all the Senior High School of Toledo City Division by making Luray II National High School, Matab-ang National High School & Toledo City Science High School Senior High School learners and teachers as the respondents of the study. The inclusion of learner's classroom and shops on the use of handheld gadgets and equipment's specifically in technology effectiveness in relation to integration of ICT for competency mastery of the learners, the frequency of correct responses, and sets of survey questionnaires will help the researcher in identifying the weak points of the learners by using 4 point Likert scale. Furthermore, it is helpful for not only promote academic and technology effectiveness but also makes technology as a bridge of interactive classroom atmosphere and meaningful engaging activities in developing learners who were digital native as part of 21st century skills.

Department of Education

The result of this study will somehow help the government to seek further concern in regards to budget allocation for every public schools digitalization opportunities to eradicate inequity in education and the use of technology in school classrooms and shops specially in senior high schools who consist of different tracks to masters in preparation for higher education and other innovations in teaching to cope the K to 12 Standards in molding a holistic and globally competitive graduates.

Administrators

To give advanced instruction of every work level of education and make decisions that affect the academic community towards the development of direction and mission of department of education for senior high school program to prepare students for more advance in university courses, entrepreneurship or early labor.

Teachers

To see the positive perspective that when teachers effectively integrate technology into subject areas, teachers grow into roles of adviser, content expert and coach, technology helps make teaching and learning more meaningful and fun. Students are also able to collaborate with their own classmates through technological applications.

Students
lt helps them find ways to continue their study and develop a positive perspective and interpersonal relationship and see the value of technology as they learned best being interactive, and technology is what helps them to do that. Children often struggle to stay on task or interested, and with resources to help the teacher, they can better stay focused and learn faster.

Parents
It is a big help for parents to encourage their sons and daughters to pursue their studies and support their children's education. Wither Parents may want their child use technology for convenience or to aid their learning. Having a mutual respect for one another's authority will help parents and teachers reach a consensus on the role of technology in a child's life.

Community
The result of this study will be of assistance for youth empowerment and community involvement that would strengthen the area of youth welfare and technological advancement development while outsiders want to develop local community they should develop the local conditions and sustain the result.

The Future Researchers
The research findings of this study can somehow expound by other researchers or tackling other concerns about technology effectiveness integration within the curriculum context. This encourages further research to determine other factors that may contribute to effectiveness of technology integration when it comes to curriculum actual implementations of public senior High schools.

Researcher
With this research, the researcher considers this as a breakthrough on her professional growth and development that somehow made her an agent of positive change in education, for the youths, for the nation.

RESEARCH METHODOLOGY
Research Design
In this study, the descriptive-correlation method was employed to identify the barriers influencing the *student's academic performance and skills mastery within the competencies offered and the ratio of the availability of technological advancement &*its significant *relationship of teachers mastery level of technology integration towards curriculum success in developing 21st century skills in Luray II National High School* Matab-ang National High School & Toledo City Science High School specifically in Senior High School learners. The aim of descriptive-correlation is to verify formulated hypotheses that refer to the present situation in order to interpret it and attempts to determine whether and to what degree a relationship exists between two or more quantifiable variables. The descriptive approach is quick and practical in terms of the financial aspect. Moreover, this method allows a flexible approach, thus, when important new issues and questions arise during the duration of the study, further investigation may be conducted.

A survey is a structured way of learning about a larger group of people by obtaining information from a representative sample of that particular group of people. Some of the advantages of a survey are that it describes the characteristics of a large population and there is no other method of observation, which can provide this general capability. It allows many questions to be asked about a given topic by giving considerable flexibility to the analysis.

This is a quantitative research technique that involves in conducting individual survey with a large number of respondents to explore their perspectives on a particular resources, demographic profile and program perspective. (Mertens, 1998). Hence, will be administered to know the teachers and learners perception on technology effectiveness of K to 12 curriculum leading to 21st century skills." The result will then be interpreted as suggestive of the respondent's attitudes towards the use of their methods of instruction. Deriving from the current attitudes and perceptions of the true essence of technological advancement classroom atmosphere.

The researcher distributed the questionnaires to 50 teachers and 600 Senior High School Learners for evaluation. Gathered data was treated using the simple percentage, weighted mean and arithmetic mean in both learners and teachers profile. The data collected will be an indispensable tool in making the development plan that could be useful in SLAC (session learning action cell) in introducing proper integration of ICT and handheld equipment on shops in mastering competencies under the Kto12 curriculum and its respective Subjects.

Research Flow
The synthesis of the whole study is reflected in the research flow as illustrated in Figure 2. The main source of data as shown in the chart are the data from the respondents which includes Demographic Profile & Educational Background of Teachers, length of service of the teacher, the level of implementation of technology integration in the current curriculum, integration of ICT in lesson contextualization, barriers which resulted to set aside the use of technology in classroom setting. Separate survey questionnaire for Senior High School Students which also determine their demographic profile, means of technology access from home, availability of school technology resources, level of academic performance, level of awareness in modern ICT – applications, and their level of expertise in using Microsoft applications and other handheld or technical equipments. In the process of the study, the research conducted a survey through a four-part questionnaires and test papers to gather the data needed. The collected data was analyzed and interpreted. These were the basis of the researcher in formulating the impact of technology in learners and teacher's academic lives.

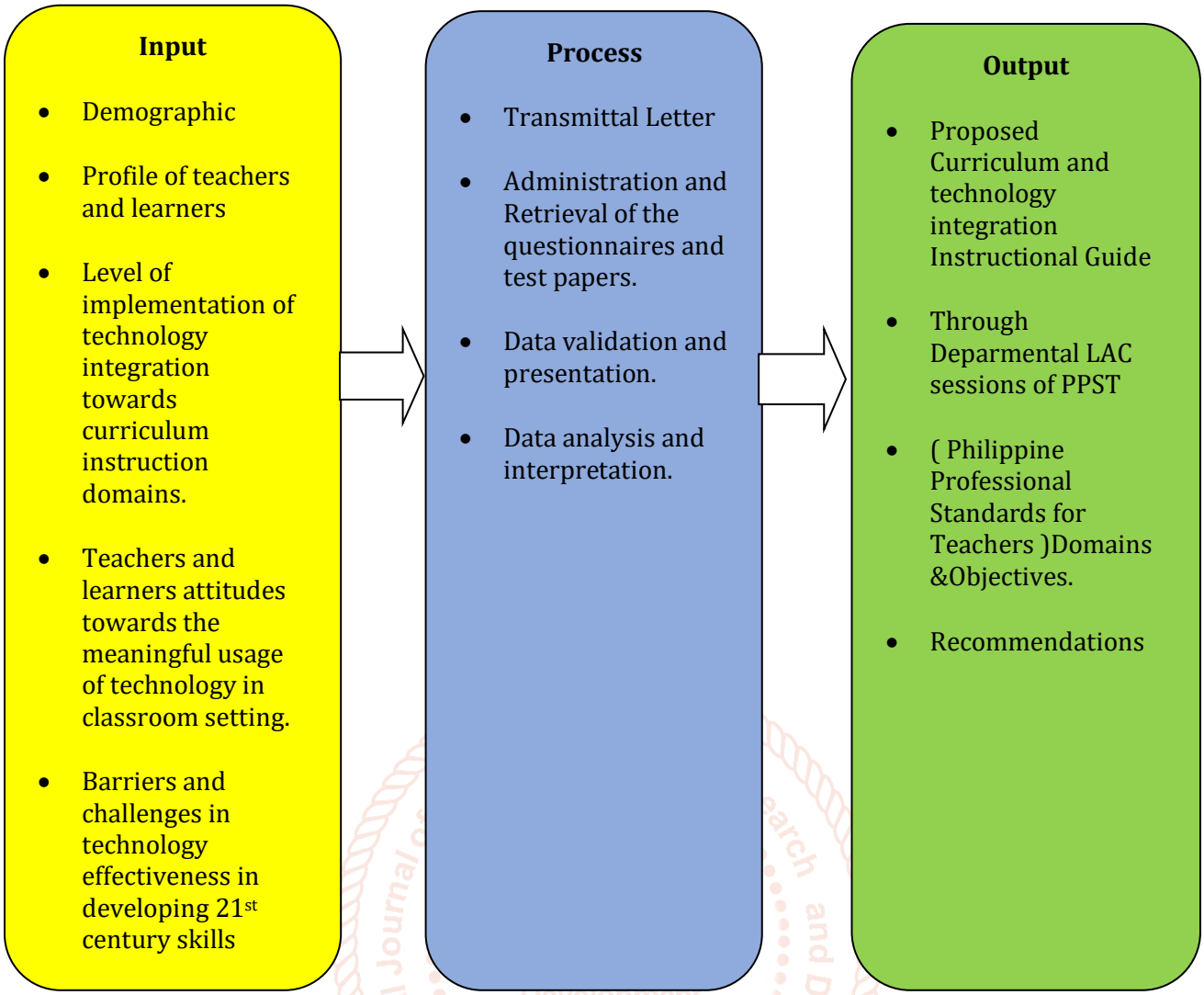

Figure 2 Flow of the Study

Environment

The study was conducted at Matab-ang National High School, Luray II National High School & Toledo City Science High School which belongs at North District in Toledo City Division. First, Matab-ang National High School consist of 1,497 students population which offers six level of secondary curriculum gr.7 (338 in population), gr.8 (373 in population) gr.9(294 in population) & gr. 10(254 in population)and Senior high School(grade-11 = 133 & grade 12=105) a total of 238 students of SHS by the year 2019-2020) with 61 faculty members and 3 Administrative staff and 1 School Head.

The Second School where the study conducted is located at Luray II Toledo City, it is one of the most densely populated barangay in the city of Toledo. It has 4,168 residents and a land area of 7.95 square meters. The reason why the school of Luray II National High School consist of 4,700 students population who also came from neighboring barangays, its senior high school populations consist of 550 students and 168 faculty members combined numbers from JHS & SHS department.

The third school where the research conducted was at Toledo City Science High School located located at Ilihan Toledo City, its Senior High School students population consist of 44 for grade 11 students and 40 for grade 12 students a total of 84 students with 19 Faculty members and 1 school head.

Figure 3 Map of the Research Environment

Respondents

The respondents of this study were determined through purposive sampling methods. Specifically, it comprises 600 Senior High School Students and & 50 SHS teachers from three respective schools in North District Toledo City. Who were selected to validate the effectiveness of the study- "Enabling Motivated Instruction Outcomes Through Technology Access"

Table 1 Distribution of Respondents

N=650

Senior High School Department SCHOOLS	Students Respondents	Teachers Respondents	Total no. of Respondents	%
Luray II National High School	268	23	291	44.76
Matab-ang National High School	238	15	253	38.93
Toledo City Science High School	94	12	106	16.31
Total	**600**	**50**	**650**	**100%**

Instruments

The instrument used in this study were the questionnaires- one researcher's made for the senior High School Students and one questionnaire for the teachers it is adopted through standardized questionnaire from the study entitles of Technology Implementation In K-12 Schools: A Research Study Of Perceptions And Practice (2012) of Kaitlin Martinez in University of Central Florida. The questionnaires for the learners and teachers differ in content. For the learners it measured the demographic profile & and their technology level of advancement while the questionnaire for the teachers determined the current barriers, attitudes and perceptions of the level of technological advancement in its implementation through actual instruction.

Gathering of Data

The following are the steps in data gathering:

Preliminary Preparation

A letter of approval from the three Principal of the schools were the study conducted, and the Division Superintendent letter of approval, was secured.

Distribution of Questionnaire: Upon endorsement, the questionnaires were personally to the learners and teachers. An explanation on the purpose of the study was done before filling up the survey questionnaire. After the questionnaire were answered by the respondents, they were collected by the researcher.

Treatment of data:

The data collected from the survey questionnaires and test papers were checked, listed, tabled and subjected to the succeeding statistical treatments.

Simple Percentage: This was used for the profile of the respondents.

Weighted Mean: This was used to identify the learners' and teachers' attitudes towards adopting technology integration in classroom/shops setting.

Arithmetic Mean: This was used to determine the academic performance of the SHS learners in core and tvl/major subjects.

Chi-square: This was used to recognize the significant relationship between the demographic profile towards ICT integration of K t 12 curriculum competencies.

Scoring Procedure

The following scoring matrix was observed in this study.

To what extent is the technology implementation as to integration of teaching competencies & strategies?

Scale	Range	Category	Verbal Description
4	= 3.26 – 4.00	Always	The teachers always used ICT integration in teaching the competencies because they felt that it is very effective in developing relevant skills.
3	= 2.51 – 3.25	Sometimes	The teachers sometimes used ICT integration strategy in teaching the competencies because they felt that it is effective in developing 21st century skills.
2	= 1.76 – 2.50	Seldom	The extent that the teachers seldom used the ICT integration strategy in teaching the competencies because it is not so effective.
1	= 1.00 – 1.75	Never	The extent that the teachers never used ICT integration strategy because they felt that it is not effective in teaching.

Attitudes towards adopting the Online Collaboration Group as Perceived by the Teachers and Learners

Scale	Range	Category	Verbal Description
4	= 3.26 – 4.00	Strongly Agree	The respondents Strongly Agree that technology Implementation is effective in the academic performance among SHS students.
3	= 2.51 – 3.25	Agree	The respondents only Agree that technology implementation is effective in the academic performance among SHS students
2	= 1.76 – 2.50	Disagree	The respondents Disagree about the effectiveness of technology implementation towards academic performance enhancement of SHS Students
1	= 1.00 – 1.75	Strongly Disagree	The respondents Strongly Disagree about the effectiveness of technology implementation towards academic performance of SHS Students.

DEFINITION OF TERMS

The following terms are used throughout the dissertation, and their definitions are provided below:

21st century skills: Generally used to refer to certain core competencies such as collaboration, digital, literacy, critical thinking, and problem-solving that advocates believe schools need to teach to help students thrive in today's world.

Behaviorism: A theory of learning based on the idea that all behaviors are acquired through conditioning.

Competencies: The applied skills and knowledge that enable people to successfully perform their work while learning objectives are specific to a course of instruction. Competencies are relevant to an individual's job responsibilities roles and capabilities.

Computerized testing: Testing that is created, taken, and graded online. Computerized testing must be done in a lab that has enough computers for each student.

Interactive learning: Situations in which the learner is a participant in the process rather than a spectator (Bork, 2015).

Connectivism: A theoretical framework for understanding learning in a digital age. It emphasizes how internet technologies such as web browsers, search engines, wikis, online discussions forums, and social networks contributed to new avenues of learning.

Constructivism: Theory espousing that knowledge is not "about" the world but rather "constitutive" of the world (Sherman, 2005). According to constructivism, knowledge is not a fixed object; instead, an individual through his/her own experience of that object constructs it. The constructivist approach to learning emphasizes authentic, challenging projects that include students, teachers, and experts in the learning community. Its goal is to create learning communities that are closely related to the collaborative practice of the real world (Dwyer, 2010).

Core Subjects: These are the subjects that all SHS students will study regardless of their chosen career tract or learning strand.

Curriculum: the specific learning objectives or standard to be mastered. It is he general learning goals and activities for a course, set of courses, or grade level.

Educational software: Educational programs used to direct the operations of a computer. Educational software can include any software program used for any subject in the school curriculum for educational purposes.

Educational Technologist: A teacher who is a full-time, school-level computer coordinator and teacher of technology implementation to teachers.

Educational Technology: The use of both physical hardware, software and educational theoretic to facilitate learning and improving performance by creating, using, and managing appropriate technological processes and resources.

Engaged Learning: The Process in which students actively participate in their learning. Students are involved, beginning on the first glance up to the evaluation process.

Holistic Development: is a practical approach to a comprehensive learning system where physical, social, emotional, mind and spiritual growth of a child is taken care. This style of education not only focuses on mere learning but also on implementing what is learnt.

Integration: Occurs when separate people or things are bought together, like the integration of technology in education specially in actual classroom setting.

Information Technology: The use of computers to store, retrieve transmit and manipulate data or information. IT is typically used within the context of business operations as opposed to personal or entertainment technologies. It is considered to be a subset of information and communications(ICT)

Implementation: An act or instance of implementing something, the process of making something active or effective.

K to 12 Curriculum: As a general educational term typically refers to the context being taught and the learning experiences studentshavr in the school setting in grades kindergarten through twelve.

Laptop: A portable computer that can be docked at a station or used with a wireless connection. These laptop computers can be taken home or to workshops and conferences.

Online Collaborative learning: Refers to methodologies and environments in which learners engage in a common task by the use of online world specifically the social media where each individual depends on and is accountable to each other.

Multiple Intelligences: A theory that differentiates human intelligence into specific modalities rather than seeing intelligence as dominated by a single general ability.

Senior High School: A secondary school that students attend in the three or four highest grades before college. A high school where someone is a freshman, sophomore, junior and senior in 11th, and 12th grades is an example of a senior high school student.

Technical-Vocational-Livelihood (TVL)- is one of the two tracks offered in senior high school. The other one is the Academic track.

Technology tools: Tools such as, but not limited to, an interactive whiteboard, software, email, computers, and the Internet are considered technology tools.

Technology*:* The branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment, drawing upon subjects as industrial arts, engineering, applied science, and pure science (Technology, 2012).

2. REVIEW OF RELATED LITERATURE AND STUDIES

Related Literature

Technology has been a growing force in education, business, and private life for quite some time. More and more people use email instead of writing letters and sending them through the postal service, and many times, ecards are sent for birthdays and other special occasions instead of paper greeting cards. My Space, an international site that offers email, social networking, communities, videos and web logging on the Internet is where the students can communicate with friends, virtually designing and

maintaining their own website for fun. In addition, more and more homes, schools, and business offices have computers and Internet access. A decade ago, access to technology was limited, and wiring schools was one of the nation's education priorities. Ten years of substantial investments and government interventions have vastly improved this picture. According to The Secretary's Fourth Annual Report on Teacher Quality. Ninety Percent of schools with computer access have Internet access compared with 35% of schools with computers having access to the Internet in 1994 (Clopton, 2016, p. 98).

Many schools across the country use technology to enhance student learning: tools such as Internet access(specially social media), digital cameras, email, interactive whiteboards, laptop computers, LCD projectors, and course specific software that support the curriculum. Most teachers should have a basic understanding of how to use word processing software, such as Microsoft Word, which is available on all school computers.

Many teachers are allowing students to use the Internet as a source of information for research projects assignments. Honey (2015) stated that, according to the National Center for Education Statistics (NCES), public schools have made consistent progress in expanding Internet access in instructional rooms. However, the technological tools themselves should not be the focus. Technology is not the teacher; it is a tool the teacher uses to widen the student's reach and should complement and enhance what a teacher does naturally. Bassett (2015) acknowledged the digital age is not about technology; it is about what the teachers and the learners are doing with the technology to extend their capabilities (p. 77).

Furthermore, the question is not whether technology tools are available for teachers and students to use. Technology tools are more available to teachers and students than ever before. The question is this: Are technology tools improving education? Even though complex factors exist, such as the ways in which technology has been introduced to different schools in different school's systems around our nation and the amount of money that has been used to purchase technology at individual schools, ultimately, the schools will be held accountable for these investments.

Student-Centered Technology in the Classroom-Technology can help facilitate the knowledge-constructed classroom. Many researchers view computers as having a positive influence on the teaching and learning processes. These researchers such as Crowl, Becker, and Means (2012)have confined in their research with the use of computers in the classroom, schools can become more student-centered and offer more individualized learning than ever before. In some situations, such as distance learning, students may never actually meet the teacher since all of the work for the class is completed online. Student-centered classrooms can be challenging for educators because they must re-study their teaching methods. Research completed by (Roshelle, Pea, Hoadley, Gordin,. 2017) indicated that computers can be used in collaboration for all subject areas, but teachers must take into account the different styles of teaching and the students' different styles of learning in order to use them effectively (p. 82).

Children of the Technological Tools Revolution

Technological tools, especially personal computers, are often cited by educators and policymakers as magic-workers in literacy programs, providing great access to all students. Blamires (2015) claimed that technological tools could help overcome skill-level barriers to learning. He went on to say computers could make us smarter, if not wiser. Other researchers such as Baker, Gearheat, and Herman (2015) have dedicated pages to the motivational qualities of learning with technological tools. Students are very familiar with how to work computers, which means students are more engaged when using these technology tools.

Motivation and engagement are frequently identified as the major benefits of using technological tools to support literacy learning (Andrews, 2016). A common view is that in using computers, students are so engaged and motivated by a viewing text they hardly realize they are accessing, reading, decoding, and analyzing information. Why is it so engaging? As previously mentioned, technological tools are everywhere in society and are part of our everyday lives. Hence, the use of technological tools in teaching and learning experiences directly relates to the real lives of students. Van Kraayenoord (2018) declared, "Students with learning difficulties in particular will quickly become disengaged if classroom teaching does not connect with their lives, and if it does not engage them as learners with topics and issues that have interest and meaning for them" (p. 398). Reading information on a website advertised in a favorite skating magazine, downloading the latest hits from a radio website, and reading the latest gossip about film stars are just some examples that connect with students' real lives yet require active practice and development of literacy skills. Others have suggested using computers for literacy building and literacy practice also allows students to take more risks with their language because of less fear of embarrassing mistakes.

Student Learning with Technology

Computers are being used, in part, to enable teachers to improve the curriculum and enhance student learning. One potential target could be "at-risk" students. Recent findings show that not being challenged and not being given the chance to use complex thinking skills are depriving "at-risk" students of a quality education. Means, Blando, Olson, Middleton, Morocco, and Remz (2019) suggested that technology in the classroom could provide authentic learning opportunities to "at-risk" students. Teachers can draw on technology applications to simulate real-world situations and create actual environments for experiments so students can carry out authentic tasks as real workers would, explore new terrains, meet people of different cultures, and use a variety of tools to gather information and solve problems (Means et al., p. 43). Most of these "at risk" students will be entering the work field after high school, and real world experiences could be helpful in fostering these students' success.

Related Studies

Several studies have suggested any student, including the "at-risk" student, who has technology integrated into the curriculum, could potentially see a positive change in classroom grades, GPA, and attendance. Technology brings about changes to the classroom roles and organization, especially as it allows students to become more self-reliant. Students may use peer coaching, and teachers may function

more as facilitators rather than lecturers (Means, 2016). Students are allowed to work on their own, at their own pace, when working on computer projects. These students may not be afraid to fail when their failure is personal instead of in a large classroom discussion.

The study conducted by Sandholtz, Ringstaff, and Dwyer (2016) on the Apple Classrooms of Tomorrow (ACOT) over a lO-year period showed changes in teacher and student interactions. Teachers were observed more as guides or mentors and less as lecturers. The cooperative and task-related interactions among the ACOT students were spontaneous and more extensive than in traditional classrooms. Student interest in computers did not decline with routine use, and teacher peer sharing began to increase as students and teachers sought support from one another. Other changes that were seen during this study were teachers began teaming and working across disciplines, and school schedules were made to accommodate unusually ambitious class projects by the administrators and the teachers. Teachers and students started to show mastery of technology and to integrate several kinds of media into lessons or projects. Classrooms were a mix of traditional and nontraditional learning, as teachers changed the physical layout of the classroom along with daily schedules to give students more time on projects (Sandholtz et al.). Both students and teachers were motivated to team with others while analyzing and solving real world problems with the use of carefully planned projects.

The ACOT study brought to light meaningful use of technology in schools goes beyond just putting computers in classrooms. Technology cannot be considered a change agent for education in and of itself. When used as an integrated tool with the curriculum, technology can make a difference in education (Sandholtz et aI., 2017). Technology (a) must be used to support collaboration in the classroom or to access information, (b) should also be used to express and represent the thoughts and ideas of students, and (c) must be used with authentic forms of assessment to be a value to students and teachers in the classroom.

The Use o/Technological Tools to Support Reading Skill Development-Many authors relate their experiences in researching the effectiveness of "talking books" as a specific example of a technological tool that supports reading skill development. When using "talking books," leaners do not need to be able to read well in order to access a text. The text of the story is highlighted from left to right while a narrator reads expressively and animations aid understanding. Many student textbooks are very difficult to read because of long sentences and an extensive vocabulary, so a learning disabled student would not be able to read and understand the content of the book. Rusch, Conley, and McCaughrin (2017) found talking books aided in developing children's skills in decoding print media in a similar way to traditional adult-print child interactions, with the talking book taking the place of the skilled reader. Becker (2016) suggested for children with learning difficulties, talking books stimulate because of sound, animation and the opportunity for children to be in control, a key issue for these authors. Students do not have to stumble over unknown words, which aids in content comprehension.

As well as examining how students interact individually with the support features provided on electronic texts, there is a need for further research into the incorporation of electronic texts into specific classroom contexts. Many of the studies on the effectiveness of talking books have been conducted outside of the classroom (e.g., in reading clinics) or without considering the influence of the wider context on students' learning. VanKraayenoord (2017) says many researchers working in this area had noted the importance of context, yet there is little literature available about "regular" classroom teachers in "regular" situations using technological tools to support reading. A regular classroom does not contain tools to accommodate students with special needs.

Writing and Technology Tools-Although research has shown talking books, other computer programs and Information Communication Technology (ICT) texts support learning of reading skills with positive results, both Dorman (2016) and Jaber (2016) suggested this is not enough. They explain a great number of technological tools are available to move students with learning difficulties from being mere consumers of predetermined reading packages to actual producers of texts. According to Dorman (2016), the introduction of simple multimedia authoring packages, such as Microsoft PowerPoint or Apple's Keynote, moved children from the passivity of readers and responders to the activity of writers and authors.

Use of a word processor may mean a student identified as being "at risk" of failing major literacy outcomes could be included in more high-Ievel activities and could access and create texts they otherwise could not. Spell and grammar check capabilities included in computer software are helpful tools for these students. In terms of programming and assessment, students and teachers can focus on literacy tasks and not lack of literacy skills while using these and other technology tools. This is in line with the "writing to learn" model of literacy rather than "learning to write"; however, there are dangers. Dorman (2018) argued, "If teachers use word processors simply to facilitate repetitive tasks of copy-typing, it 'becomes an educationally dehydrated means of child control'" (p. 25). Teachers must use these tools to aid students in completing a project, not as the project itself. Again, tasks must be engaging, purposeful, and relative to the real lives of students because, as Roschelle et al (2018) related, sitting in front of a computer doing word processing is not necessarily more interesting or constructive than using pen and paper (p. 92).

Another example is the Government Support and Standardized Testing-In education proposal, When President George W. Bush (2015) stated. The quality of our public schools directly affects us all as parents, as students, and as citizens. Yet too many children in America are segregated by low expectations, illiteracy, and self-doubt. In a constantly changing world that is demanding increasingly complex skills for its workforce, children are literally being left behind. This Administration believes schools should use technology as a tool to improve academic achievement, and that using the latest technology in the classroom should not be an end unto itself. (p. 2-24)

Although there is some law that has forced teachers and administrators to change their curricula to focus on material in the standardized tests .Technology support services, and

infrastructure over the past decade. As a result, the legislators and the public are watching for some improvements in the schools.

The legislators will be asking for proof regarding the cost and time spent on technology in K-12 schools. They will want to know if all of the money spent has been worth the cost of this changes.

The concerned about student achievement, and brought many ways to measure achievement and performance, and, yes the education community believes that our standardized achievement tests are only a partial measure of what students know. But even in that limited arena, there is research under controlled conditions that shows that students with access to good technology applications and good teaching learn more and learn faster than students who don't. (Clopton, 2006, p. 4)

Technology tools are not the teacher; the teacher must understand and use these tools to enhance the curriculum. According to Coley (2017), the results of implementing technology tools in the classroom "are highly dependent on the quality of the implementation of the instructional design." He went on to say, "Standardized achievement tests might not measure the types of changes in students that educational reformers are looking for" (p. 67-68). There must be other ways to test the knowledge students' gain by integrating technology into the classroom. Performance based assessments focusing on issues students have solved or electronic portfolios that highlight the accomplishments of each student would be a much better indication of students' knowledge. Schools could also research attendance of students before and after technology was added into the curriculum.

Barriers to Teachers' Use of Computers-New and improved models of teaching are often considered the best way to teach students; however, they change regularly, just as technology does. Other barriers to using technology in education include lack of teacher time, training, and support; limited access; high costs of equipment; lack of vision or rationale for technology use; and assessment practices that may not reflect what is learned with technology (U.S. Congress Office of Technology Assessment lOTA], 2016). In particular, the lack of teacher training and expertise is a major barrier to using the computer and related equipment.

However, with adequate training, technology tools can be quite effective in the classroom. With computer competence, teachers' anxiety decreases, and their attitudes toward computers improves with hands-on computer literacy courses. Adequate time allows teachers to experiment with new technologies, to share these experiences with other teachers, to prepare lessons using the technology, and to attend technology courses or meetings (Barron & Goldman, 2016). Learning how to use new technology includes the time the teacher needs to become competent with the computer as a personal tool and as an instructional tool. Teachers need to develop their skills outside of the regular school day so they can concentrate on instruction and training objectives during the school day. After teachers become knowledgeable about using technology tools, they need time to transfer the skills learned into the curriculum. Training could come in many forms, such as in-services, professional development, collaborative learning, and peer coaching. Whatever methods are pursued, teachers need the time to learn at their own speed and with their own learning styles (Brand, 2019).

Admittedly, technology can be difficult to integrate into the curriculum. However, when teachers see how technology can benefit their students, they might be willing to become part of the technology plan. Schools and districts need to meet the vision of the new technologies with planning and leadership. Teachers must be included in this process of understanding the curriculum uses and ways of incorporating technology into the lessons. Many times, the need for keeping abreast with new technology changes is not communicated to teachers. The fact is to be effective, technology must be ingrained into the broader education reform movement that includes teacher training, curriculum, student assessment, and a school's capacity for change (Roschelle et aI., 2018). Teachers have the unwieldy task of keeping up with new styles of learning, new program changes and new technology, and they need to prepare themselves and their students for those changes. Schools need to aid in this preparation by addressing these changes through professional development programs.

Technology Assessment-At home, computer skills are necessary to do many common tasks, such as pay bills online; email friends, family or business associates; and book reservations for vacations. Employers and university professors demand certain skills and modes of thinking appropriate for the challenges of the 21 st century, and almost all jobs now require some basic understanding of computer hardware and software, especially word processing, spreadsheets, and email. Schools must change to meet the demands of higher education communities and the job market to prepare students for a successful adult life after they finish high school and to enable them to compete internationally (Bassett, 2015).

Much research has been done on using technology in the classrooms, but few studies have uncovered ways to assess student learning through the use of technology besides the obvious standardized testing. According to Honey (2015),

Sivin-Kachala and Bialo (2018) reviewed 311 research studies on the effectiveness of technology on student achievement. Their findings revealed positive and consistent patterns when students were engaged in technology-rich environments, including significant gains and achievement in all subject areas, increased achievement in preschool through high school for both regular and special needs students, and improved attitudes toward learning and increased self-esteem. (p. 23) Evaluators of educational technology do not have an easy job and could be disadvantaged by the fact technology is constantly changing and improving. Legislators and the public are interested in the results of the money they spend for a particular technology in the school systems. However, by the time researchers collect, analyze, and publish data regarding that particular technology, it is probably obsolete.

Technology cannot be expected to improve all areas of teaching and learning. Teachers' styles of teaching differ as greatly as students' styles of learning. A meta-analysis report by the Software Publishers Associations analyzed 176

studies completed on the use of technology in schools and concluded, "The use of technology as a learning tool can make a measurable difference in student achievement, attitudes, and interactions with teachers and other students" (Coley, 2016 p. 62). However, technology used along with the constructivist approach has proven to be effective. Constructivism position is when students are engaged in choosing the content of the subject, learning is more effective. In 2016 Means and Olsen of the U.S. Department of Education's Office of Educational Research and Improvement specifically investigated the influence of technology on constructivist teaching in classrooms. Overall, increased technology use affected schools positively, specifically in the areas of student motivation and academic performance. Specifically, seven out of eight districts reported lower teacher turnover in their district, six out of eight reported higher student attendance rates, five out of eight reported higher test scores, and eight out of eight reported fewer disciplinary incidents (Coley, p. 65).

Teacher Training-After the educational goals and visions of learning through technology have been determined, it is important to provide professional development to teachers to help them choose the most appropriate technologies and instructional strategies to meet their goals. Students cannot be expected to benefit from technology and teachers cannot be expected to use it if they are neither familiar nor comfortable with it's use. Wenglinsky (as cited in Crowl, 2016) found that teachers who had received professional development with computers during the last five years were more likely to use computers in effective ways than those who had not participated in such training. Yet teacher training too often focuses on helping new teachers survive the first year of technology use without equipping teachers to use the technology long-term (Fulton, Yoon, & Lee, 2016, as cited in Honey, 2016). One teacher told the publication Education World, "Many trainings are too focused on tools and not strategies of how to use them" (Baver et aI., 2016, p. 22). Another teacher told the same publication that faculty should be compensated for completing training and using technology (Baver et aI., p. 22).

The fact is that it takes much longer than a year to incorporate and understand the effects of technology added in the classroom, and teachers often complain about the lack of training available for them to learn new technologies. Young (2017) stated,

Colleges have spent millions on "smart classrooms" packed with the latest gadgets to assist teaching--computerized projection systems, Internet ports at every seat, even video cameras with motion detectors that can track the movements of a lecturer. But colleges have spent far less time and money giving professors the skills to use even the simplest technology effectively. (p. A31)

If teachers are not properly trained, technology might actually impair their effectiveness. This would mean they would be more effective using something they are skilled at using such as chalk on a chalkboard. Another problem could be the fact many of the technology tools districts buy go un-used in some classrooms, while teachers who are interested in teaching with technology and enhancing their curriculum do not have the tools needed. In other words, some have it and do not use it, while some want it and do not have it. Summary

According to Postman (2018), "Technology is ideology. To be unaware that a technology comes equipped with a program for social change, to maintain that technology is neutral, to make the assumption that technology is always a friend to culture, at this late hour, stupidly plain and simple" (p. 135). While some changes brought by technology have been positive, some issues remain unresolved. For example, students often complain of PowerPoint abuse by teachers, wasted time fumbling with projectors or software, unmediated chat rooms, and wasted time teachers spend teaching web tools and not content. However, these same tools can be highly beneficial to students if they are used along with a sound instructional method. Teacher complaints toward integrating technology tools into the classroom include no training, no compensation for completing training, long hours learning new technology tools, and poor distribution of technology tools among teachers. The government is interested in assessing student achievements after adding technology tools into the curriculum and has offered grants to help school districts obtain technology. However, even the government admits more than a standardized test must assess the success of technology use in the classroom.

Technology is entwined in the social lives of students today. They carry cell phones and MP3 players in their pockets, play video games during their free time, and use computers to chat with friends. Therefore, when technology tools are added into the classroom, it would stand to reason that these students would be more engaged in the learning process. Technology tools used in the classroom are valuable because they can motivate students to become involved in the lesson. As a result, it is very important for teachers to understand how technology tools can improve their teaching skills and their students' learning skills and test scores. Teachers who have an open mind are more likely to add these tools to their curriculum with basic staff development and a line extra time to practice the new skills.

3. PRESENTATION, DATA ANALYSIS AND INTERPRETATION

This chapter evaluated and understood the results from the separate questionnaires answered by the teachers and learner's respondents of this study. Each section in the chapter is labeled according to the status on the level of technology implementation integration in instruction as basis for a developed curriculum and technology integration instructional guide. The recommendations for creating instructional guide in the schools based on the gathered data were through students demographic profile, schools technology resources, teachers profile & the level of technology implementation towards instruction with its identified sub-factors from the three selected secondary schools in Toledo City Division, Cebu as the schools representative in the said division was also discussed.

The data were gathered by means of 2 set of questionnaires completed by the 600 learners and 50 teachers from 3 secondary public schools as a sort of purposive sampling. The contents of this chapter are the demographic profile, gender, highest educational attainment, effectiveness of technology integration among the 7 domains, identifying the barriers of technology integration in curriculum instruction and some other open-ended questions, number of years in teaching, seminars attended, dominant teaching loads,

average class size and the availability of school technology resources of teacher respondents. This chapter also shows the learners' age, gender, SHS track, specialization, means of access of technology from home, experience using the internet, attitudes towards using technology and learner's perception about the correct usage of technology.

The extent in the implementation of the technology effectiveness instruction al guide as to objectives and teaching strategies across the Senior High School Curriculum in its specified core and specialized subjects, learners perception, attitudes and experiences towards the use of technology and its effectives towards their learning style of the learners and teachers feedback on in the 7 mentioned domains on its the level of implementation of technology integrations in instruction as perceived by the respondents groups. Furthermore, it reveals the significant relationship between identified information variables and the level of implementation. Lastly, the barriers and challenges occur during the implementation of technology integration towards curriculum instructional setting was incorporated in this chapter.

DEMOGRAPHIC PROFILE OF THE RESPONDENTS- GROUP
Teachers

The first section of the study deal with the profile of the teachers its background, teaching style and resources available to them. The profile of the research respondents for teachers seek to interpret the data gathered from the survey distributed to 50 teachers from three selected secondary schools. 23 teachers respondents from Luray II BHS, 15 teachers respondents from Matab-ang NHS & 12 teachers respondents from Toledo City Science High School. It comprises information including the age, sex, highest educational attainment, number of years in service, appropriate trainings & seminars attended, dominant teaching load, average class size, availability of school technology resources, level of implementation among 7 domains, usage of multi-media, handheld devices and equipments plus the open-ended questions to identify their suggestions regarding the most effective objectives to set in the making of instructional guide. All of these data were tallied, collated and tabulated to find out its significance to the implementation of the desired output which is the Curriculum & technology integration instructional guide.

Age: Age are important data that determine the chronological maturity of the respondents.

Table 2 shows varied ages of the teacher -respondents from three different schools who were teaching senior high school core or specialized subjects.

Table 2 Age of the Teachers

N=50

Age	Frequency	Percentage
51-60	5	10.00
41-50	11	22.00
31-40	9	18.00
21-30	25	50.00
TOTAL	50	100

As reflected in Table 2, there were 25 or 50 percent of the Senior High School teachers fell within the age bracket of 21 - 30. On the other hand, 11 or 22.00 percent of them are within the age bracket of 41-50, and in the age groups of 31-40 there were 9 (nine)teachers or 18 percent, 5 (five) teachers or 10 percent only for the age bracket of 51 - 60 out of the total population of teacher-respondents. This implies that most of the respondents are within the millennial age bracket which ranges from 21– 30 years old.

Gender: Genders are significant data that can be related to learning styles and their preferred teaching styles.

Table 3 presents the gender of teachers who are handling core or specialized subjects in Senior High School among the 3 (three) selected secondary schools in Toledo City division as serves as the respondents-groups

Table 3 Gender of Teachers

N=50

Sex	Frequency	Percentage
Male	17	34
Female	33	66
TOTAL	50	100

Table 3 reveals that 33 teachers or 66 percent out of 50 SHS teacher-respondents are females and only 17 or 34 percent of male teacher from the total respondent groups of this study. Certainly, it is a common scenario in the teaching profession that only few males are entering the field if yes they are more on technical-vocational aspects while females dominating most of the schools fields. Females are more patient and caring in dealing with the children. This statement was already proven true and reliable because according to the World Bank collection of development indicators that percentage of female teachers under primary education here in Philippines was reported at 87.63 % compared to 12.37 % of male teachers in 2015.

Number of Years in Teaching: Experience is vital data that is believed to influence the teaching styles of the teachers.

Table 4 presents the number of years already spent by the teaching in teaching in the public schools.

Table 4 Number of Years in Teaching

N=50

Number of Years in Teaching	Frequency	Percentage
35 years and above	2	4
31-34 years	3	6
26-30 years	5	10
21-25 years	6	12
16-20years	1	2
11-15 years	8	16
6-10 years	10	20
1-5 years	15	30
TOTAL	50	100

Table 4 above presents how long the teachers have been teaching. Fifteen (2) or equivalent to 30 percent are in the teaching field for one to five years. Whereas, 10 or 20 percent has been teaching for 6 – 10 years. 8 teachers or 16 percent were teaching for 11- 15 years and only 1 or 2

percent of teacher-respondents who's in the service for 16-20 years already. 6 or 12 percent has been teaching for 21-25 years, 5 or 10 percent has been teaching for 26-30 years, 3 or 6 percent had been in the service for 31-40 years and only 2 or 4 percent or has been teaching for a very quite long time for 35 years and above. Apparently, in field of studies teaching experience really affects the level of technology implementation integration for Instructional Setting for the effectiveness Senior high school curriculum. It is consider as the strongest weapon in facing the 21st century skills to become holistic and globally competitive individuals teachers strategies, technology hands-on expertise coupled with numerous invaluable trainings and seminar that made the delivery of the lessons better. In the modern multi-media functions within the range of education the average teaching experience of 6 to 10 years revealed that the respondents could be considered experienced teachers and more exposed to teaching approaches, strategies and techniques added the fact that most of them belongs to millennial respondent teachers groups.

Highest Educational Attainment: Educational qualification provides significant information that serves as ready reference for human resource development of organization.

Table 5 reveals the information about the educational qualifications of the teacher-respondents of the study.

Table 5 Highest Educational Attainment

N=50

Highest Educational Attainment	Frequency	Percentage
College Graduate	18	36
With Masters degree units	20	40
Master's Degree	8	16
With Doctorate Degree units	4	8
Doctorate Degree	0	0
TOTAL	50	100

Table 5 tells that 20 or 40 percent of the SHS teacher-respondents group were enrolled in Master's Degree and still on the process of completing the course. While, 18 of them or 36 percent were graduates of Bachelor of Secondary Education. Only 8 or 16 percent of them, had graduated or full pledge masters degree holder, about 4 or 8 percent enrolled and earned some units in Doctorate Degree relevant to their specialization and out of 50 teachers no one or (zero) 0 has able to accomplished or graduated Doctorate Degree. This infers that there is no problem on the educational qualification of teachers. Majority of them had gone through personal and professional growth through pursuing graduate studies.

Total amount of Appropriate Trainings and Seminars Attended: Seminars and trainings are essential in developing the confidence of the teachers in the performance of his/her responsibility. More likely, it also contributed to the development of his/her teaching styles.

Table 6 presents the total amount of appropriate trainings and seminars participated by the teachers which is relevant to Curriculum and Technology integration in Instructional Setting.

Table 6 Appropriate Trainings and Seminars Attended

N=50

Appropriate Trainings and Seminars Attended	Frequency	Percentage
More than a one-semester course	15	30%
A one semester course	10	20%
More than a full day and less than a one semester	25	50%
A full day or less	0	0%
None	0	0%
TOTAL	50	100

Table 6 displays the total amount of appropriate trainings and seminars attended by the teachers related to curriculum and technology integration in instructional setting. It shows that 25 or 50 percent of the teacher-respondent had undergone less than one semester course of seminars and trainings. 15 of them or 30 obtain a more than one semester course and only10 teachers or 20 percent respondents has an equivalent of a one semester course of seminars and trainings. none of the teachers or 0% who experienced an equivalent of a full day or less. It is obvious that 50% of the teacher-respondents among the three selected schools in Senior high school department in Toledo City Division need an additional trainings and seminars in regards to curriculum and technology integration towards instructional setting since a less than of one semester equivalent of trainings does not guarantee expertise. Hence, the trainings and seminars usually all about subjects areas on how to teach and make lesson plans on the given learning competencies. So there is a need for an enhanced curriculum and technology integration as an instructional guide which is the output of this study especially senior high school curriculum's one of its major objective is to produce a globally competitive 21st century learners who also possesses the 21st century skills.

Teaching Loads: A face-to-face teaching, supervision of self-access classes and any other duties which may be allocated in substitution for face-to-face teaching also the number of contract hours assigned to a faculty member in a given semester or academic year.

Table 7 presents the teacher-respondents teaching load for the second semester this school year 2019 – 2020.

Table 7 Teacher Respondents Teaching loads

N=50

Subject Taught	Frequency	Percentage
Core subjects	23	46
Specialized subjects	17	34
Research & Statistics Related subjects	10	20
TOTAL	50	100

Table 7 shows that 23 teachers or 46 percent handling core subjects (e.g Filipino, English, Science etc.) 17 teachers or 34 percent respondents handling specialized subjects(major subjects e.g cookery, SMAW, EIMS, beauty care, tailoring etc.) and only 10 teachers-respondents or 20 percent subject taught related to research/statistics work related subjects. It can be stated further that the teacher- respondents from

senior high school department divided into three subject fields wherein each fields recognizes the value of curriculum and technology integration towards instructional setting specifically on hands-on-experiences offered by senior high school specialized/ major subjects integration hence all the teachers-respondents were educationally qualified to teach the respective subject.

Class size: The average number of students per class, calculated by dividing the number of students enrolled by the number of classes. In order to ensure the desired quality outcome of learning. In most cases, student-teacher ratios are based on the total number of school instructional staff divided by the total enrollment of students and if teachers supply were limited, the benefits of academic gain will also suffer.

Table 8 presents the average class size of the teacher-respondents for the second semester school year 2019 – 2020.

Table 8 Average class size

N=50

Average class size	Frequency	Percentage
40-50 students	30	60
20-30 students	14	28
10-15 students	6	12
Less than 10 students	0	0
TOTAL	50	100

Table 8 shows that 30 or 60 % the teacher-respondents hold a big class size, 14 teacher-respondents or 28% holds an average of medium class size and only 6 teachers or 12% holds a small class size. It is clear that the student's population is not proportion or there is no adequate number of teachers for equal distribution of student-teacher ratio per class. Study also found out that those teachers who were handling specialized subjects or TVL teachers has the opportunity to handle smaller class size with a range of 10-15 students. One of the sighted factor is the consideration of the availability of school technology resources per shops to accommodate learners need during hands-on experiences or actual skills demonstration contrary to core & research teachers who handles bigger class size as the multi-media devices can be used as a general tool for teaching. Evidently, school availability of technology resources has something to do with its distribution to teacher-student ratio/class size.

Learners

The profile of the research respondents for learners seek to interpret the data gathered from the survey distributed to 600 Senior High School learners. It comprises information including the age, gender, year level, track, specialization, means of access of technology at home. All of these data was tallied, collated and tabulated to find out its significance relationship between the identified information variables and level of implementation.

Age: Ages are important data that determine the chronological maturity of the sample respondents.

Table 9 shows varied ages of the learner – respondents from the three selected secondary schools in Toledo City Division specifically in Senior High School Department

Table 9 Age of the Learners

N= 600

Age	Frequency	Percentage
Above 20 years old	40	6.66
18-19	250	41.67
16-17	310	51.67
TOTAL	600	100

As reflected in Table 9, majority of the research respondents were 16-17 years old or about 51.67 percent which is within the right age for a Grade 11 level student. 41.67 percent of the student respondents were 18-19 years old who also within the right age for a grade 12 level student and only 6.66 percent learners whose age above 20 years old whom we can consider as late in schooling.

Gender: The gender of the learners helped the teachers determine the teaching method to be developed in order for the learners to learn and capture the topic to be presented.

Table 10 presents the gender of the learner-respondents of this study who are under TVL & Academic Track in Senior High School Curriculum.

Table 10 Gender of the Learners

N= 600

Sex	Frequency	Percentage
MALE	272	45.34%
FEMALE	328	54.66%
TOTAL	600	100

Table 10 indicates the distribution of learner-respondents where 328 or 54.66 percent are female and 272 or 45.34 percent are male. Female respondents comprised the majority of the total 600 sample respondents.

Track in Senior High School: Each students in senior high school can choose among four tracks: Academic, Technical-Vocational- Livelihood, Sports and Arts from which can also help them choose a course they might want to take in college. Given the fact that this is a big decision and a lot of thinking must be done when deciding. Hence, Toledo City Division Public schools only offers the two following tracks for SHS. These are the: Technical-Vocational Livelihood and the Academics.

Table 11 Chosen SHS track

N= 600

Available track in Toledo City Division	Frequency	Percentage
Academics	210	35.00%
TVL	390	65%
TOTAL	600	100

Table 11 shows that majority of the Senior High School students in three selected secondary schools in Toledo City division enrolled in TVL track which composed of 390 or 65 percent out of 600 total respondents population and only 210 or 35 percent student-respondents enrolled in academic track.

Specialization: Students can choose an area of specialization under its chosen track as early as senior high school. Knowing a student's interest before even entering college enables them to predict their future career path.

Table 12 SHS student-respondents Specialization

N= 600

Student- Respondents Specialization	Frequency	Percentage
Academics		
HUMMS	65	10.83
ABM	87	14.5
GAS	58	9.66
		34.99
TVL		
Beauty Care	40	6.66
SMAW	50	8.33
EIM	34	5.66
Tailoring	45	7.5
House keeping	23	3.83
Cookery	48	8
Food & Beverages	25	4.17
Care giving	35	5.83
Computer system servicing	90	15
		65.01
TOTAL	**600**	**100**

Table 12 shows that specialization under the TVL track covers a huge percentage which is 65.01 percent of the total student-respondents: 90 or 15 percent from Computer system servicing student-respondents, 30 or 8.33 percent from SMAW, 40 or 6.66 percent from beauty care, 48 or 8 percent from cookery EIM 34 or 5.66, 35 or 5.83 percent for care giving, 25 or 4.17 percent from food & beverages and 23 or 3.83 percent only came from housekeeping. While Academic track only covers 34.99 percent of the total student-respondents breakdown as follows: ABM 87 or 14.5 percent, HUMMS 65 or 10.83 percent and GAS 58 or 9.66 percent only. In the given data, we can predict that students prepare themselves for a number of opportunity in the work fields. TVL (Technical-Vocational Livelihood) is designed to develop students skills useful for livelihood projects/entrepreneurship or an extra skills in preparation for higher education.

Available Multi-media at Home: This section presents the available multi-media resource can be found at home. This will determine how the pupils learned and grasped lessons through viewing and listening. Table 13 presents the different multimedia that are available in the home of the learner-respondents.

Table 13 Multimedia Available at Home

N= 600

Multimedia Available at Home	Available	Percentage	Not Available	Percentage
Television	498	83.00	102	17.00
Transistor Radio	256	42.67	344	57.33
Computer	110	18.33	490	81.67
Internet	257	42.83	342	57.17
Others (tablet and CD Player)	220	36.66	380	63.34
TOTAL		100		100

This Table manifests the multi-media resources in the home of the learners. There were only few of the respondents who had Computers, 110 or 18.33 percent and Internet Connections, 257 or 42.83 percent. Apparently it is expensive to buy those gadgets. The finding also shows that the commonly bought multi-media were Television,498 student-respondents or 83.00 percent and Transistor Radio, 256 or 42.67 percent. Although Televisions and Radios are cheaper compared to other devices, they are still very informative for the learners.

STUDENTS EXPERIENCES UPON USING INTERNET AND THEIR ATTITUDE TOWARDS CORRECT USAGE OF TECHNOLOGY

The following Tables present the students perception on how internet and technology serves as an instrument in every human life specifically into their academics. It is crucial to know the potentialities of the upbringing of technology in every teens life.

Table 14 Students common usage of Internet

N= 600

Usage of Internet	Weighted Mean	Verbal Description
Watch Educational videos	2.8	So
Prepare assignments & projects	3.5	A
enhance technological vocational & academic skills using youtube tutorials	2.17	Se
play online games	4.5	A
Download google applications for entertainment	4.70	A
Read news	2.4	Se
Find information, references for research works	2.17	Se

Legend:
3.26 - 4.00- Always (A)
2.51 - 3.25- Sometimes (So)
1.76 - 2.50- Seldom (Se)
1.00 - 1.75- Never (N)

Table 14 shows on what extent the teenagers or the student-respondents nowadays uses internet. Apparently, it shows that downloading google applications and playing online games are the most frequent used of internet for them as it marks **always** or with the weighted mean ranges to *4.7-4.5*. **very high** compare to reading news, finding references for research works & watching youtube as tutorials to enhance learning & skills who only marks as **Seldom** with the weighted mean ranges to *2.8-2.4* and watching educational videos that mark **sometimes** with a weighted mean of *2.8.* Finding out from the given data that technology is an attention deficit because it makes teenagers don't give their full attention to the things that is worth valuable that may contribute to their learning & skills enhancement. Clearly, it is a great challenge of every teachers & parents to bridge the gap.

Student Attitudes towards using technology in learning: This section shows the attitude of student-respondents in using technology towards learning whether in a confident, distrustful or in some way they are open-minded with its advantages and great contribution towards learners academic success.

Table 15 Student Attitudes towards using Technology in Learning

N=600

Attitudes Towards using technology in learning	Weighted Mean	Verbal Description
I enjoy using technology	2.98	A
I avoid using technology when I can	2.00	D
I think using technology in class takes up too much time	2.06	D
I know that technology can help me learn & create many new things	3.21	A
Technology intimidates and threatens me	1.55	SD
Technology evidently improves my learning	3.21	A
Student should know how to operate basic handheld devices &equipments in TVL class.	3.32	SA
I would be a better learner if I knew how to use technology properly	3.30	SA
I'm very confident when it comes to working with technology at home at work and at school	2.24	D
I want to learn more about using technology for my future career use.	2.81	A
I believe that I can improve my technology skills with the help of my teachers	3.35	SA
Using technology is necessary for every human life.	2.58	A
Technology breaks down too often to be of very much use.	2.75	A
Average Weighted Mean	**2.72**	**AGREE**

Legend:
3. 26 - 4.00 - Strongly agree (SA)
2.51 - 3.25 - Agree (A)
1.76 - 2.50 - Disagree(D)
1.0 - 1.75 - Strongly Disagree (SD)

Table 15 include statements that describe learner's attitude in using technology in their overall learning process. According to the outcomes of the survey, with the weighted mean ranges from *3.30 to 3.35* equivalent **to Strongly Agree** that majority of the student-respondents would like to know how to operate basic handheld devices &equipments in TVL class, they also prefer to be a better learner if they knew how to use technology properly and most of all student-respondents believe that they can improve their technology skills with the help of the teachers.

This survey coincides with the study conducted on the year *2017*. it is a student survey at the *University of Ohio* addressed students' views on how technology was being used in their classrooms and how it affected them. More than half of the students surveyed said they have had assignments using technology, including the use of a webpage, online assignments and syllabi, regular contact with the teacher through email, PowerPoint use for lectures, and Internet discussion groups. Results suggested students have a good attitude about using technology. Approximately *3.2%* of the students said technology should be used in all of their classes, and *62.5%* said technology should be used in some of their classes. According to Young (2019), "Students find technology use particularly helpful when it relates directly to course topic areas or when learning about abstract concepts" (p. A31).

Students perception on Curriculum & technology integration: Refers to the external technologies such as computers, internet, content authoring tools, simulations, animations, manipulable objects, etc. these technologies can be integrated into a teaching-learning environment to aid the process of achieving any teaching-learning goal.

Table 16 Learners Interaction on Curriculum and Technology Integration

N-600

Learners Interaction on Curriculum and Technology Integration	Weighted mean	Verbal Description
Are you a typical students who is motivated to learn in your class if there is technology within the subject?	3.29	SA
Do you care about your grades?	3.58	SA
Do Having computer/handheld devices at home and internet connection really helps in your studies?	3.63	SA
Is visiting social media sites can be useful in gathering right informations?	1.86	D
Are you in favor with pure lecture/discussions with the teacher without technology integration on the subjects she/he taught?	1.31	SD
Is learning and enhancing your skills in using Microsoft applications could be helpful enough in your future profession?	3.40	SA
Technology availability within the classroom and shops could be useful in enhancing learners skills and proving better understanding and interest.	3.47	SA
Are you in favor of using google class and online social media collaboration (e.g., group chat in fb) for teachers fasters instruction on projects and assignments?	3.29	SA
Do you think that access to the internet will give a good impact to your education?	3.59	SA
Do you think that access to the internet will help you do your assignments & projects?	3.61	SA
Does the search engine in the internet lead you to the appropriate topic you have searched?	2.41	D
I would be more likely to use my phone/tablet/laptop in class for class-related activities if it was incorporated into lessons of our teacher	3.47	SA
Using technology to do activities doesn't help me learn in class	1.35	SD
Average Weighted Mean	**2.94**	**AGREE**

Legend:
3.26 - 4.00-Strongly agree (SA)
2.51 - 3.25-Agree (A)
1.76 - 2.50-Disagree (D)
1.0 - 1.75-Strongly disagree (SD)

X- Weighted Mean
VD-Verbal Description

Table 16 shows the learners interaction in regards to the characteristics of modern integration of curriculum and technology in the field of education. Majority of the statements that talks about traits of being a 21st century learner got an average weighted mean ranges from 3.29 to 3.63 with a verbal description of **Strongly Agree**. On the other side statements that talks about the characteristics contrary to modern approach got an average weighted mean ranges from 1.31 to 1.35 with verbal description of **Strongly Disagree.** In addition, statements that shows distrustful effect of social media and search engine got an average weighted mean ranges from 1.86- 2.41 with a verbal description of **Disagree.** These survey simply proves that learners nowadays really knows how to weigh things such how to identify trustworthy, credible and reliable websites to use as reference or addition to their learning and they learned best if there is technology involved.

Table 17 Level of Implementation of Curriculum and Technology Integration effectiveness in the following Domains as perceived by the Teacher-respondents

N=50

Level of implementation of the following domains	Weighted mean	Verbal Description
Classroom activities	3.49	High
Research Works	3.20	Moderate
Product/Performance Task	2.58	Low
Monthly school Celebration Activities	3.70	High
Faculty Professional Communication	4.50	Very High
Learners extrinsic motivation towards academics	3.40	Moderate
Learners monthly percentage Attendance	3.30	Moderate
TOTAL	**3.67**	**High**

Legend:

Mean Scale:	**Description**
(1.0-1.7)	Very low
(1.8-2.59)	Low
(2.60-3.40)	moderate
(3.41-4.19)	High
(4.20- 5.00)	Very High

Table 17 shows the level of implementation of curriculum and technology integration in different domains as perceived by teacher-respondents, based on the presented table the **Faculty Professional Communication** has the highest a weighted mean of 4.50 with a verbal description of **very high.** This is a good indicator wherein teachers plays significant roles in technology-enhance learning specially in determining changes in students learning as well as the blended techniques that a teacher can get through professional contacts. It is followed by **monthly school celebration and classroom activities** which weighted mean ranges from 3.49-4.10 with a verbal description -**High,** and **Performance-task** as the slowest weighted mean of 2.58 with a verbal description –**Low**. Moreover, it is a good indicator wherein the power of technology is highly leverage with curriculum integration like choosing tools, platforms and policies based on standards, assessment and instruction, a side benefit to this approach is the possibility of teacher collaboration and same-pageness.

Hence, **Research works, learners extrinsic motivation and learners monthly attendance** has a weighted mean ranges from 3.20 -3.40 with a verbal description –**moderate**. It is an alarming data knowing that technology increases learners interactivity ,while internet as part of research works makes it easier, convenient and can find various tutorials as an added learning, also teachers seek best strategies as an extrinsic motivator towards learners interest in school. In addition, technology and education integrate teaching and learning inside and outside the classroom, and improve the way by which the material is presented and comprehension that aids and possible increases learner's monthly attendance. That is why the aim of this study is to create curriculum and technology integration instructional guide as a sort of teachers guide on how to increase the level of implementation from the above mentioned domains.

Availability of School Technology Resources. Technology has the ability to enhance relationships between teachers and students. When teachers effectively integrate technology into subject areas, teachers grow into roles of adviser, content expert and coach. Technology helps make teaching and learning more meaningful and fun. Hence, the government and Department of Education must keep on eye on how to make progress on this matter as part of curriculum development.

Table 18 Availability of School Technology Resources

N=50

TVL Shops /Classroom Technology Resources	Limited Resources F	%	Sufficient Resources F	%	Plenty Resources F	%
Handheld devices	6	12	26	52	18	36
Technical Shop equipments	8	16	28	56	14	28
Computer; tablets	10	20	32	64	8	16
LEDTV/Smart TV's Projectors	24	48	20	40	6	12
Audio Devices	40	80	5	10	5	10
Total:		**35.2%**		**44.40%**		**20.40%**

Table 18, displays the teacher-respondents responses on the availability of school technology resources within the range or parameter of their actual teaching workload and designations.111 or 44.40 percent responded that their hold of resources is **Sufficient** meaning that it can cater the needs based on their student's ratio and the equipments/multi-media devices. 85 or 35.2 percent had responded that their resources are **limited** while only 51or 20.40 percent of the teacher-respondents answered that their resources are **Plenty** specifically the handheld devices that commonly available in TVL shops and can accommodate huge class size as part of learning hands-on experiences.

Based on the gathered data, it is still an alarming fact that 35.2 percent responded that there resources are limited. It is an imperative that administrators need an urgent moves to give focus more on the procurement and allocation on schools technology resources specifically on the audio devices and Smart Tv's/Projectors that marks as the highest lacking facility in senior high school department within the three selected secondary schools as the scope of the study.

Knowing, that technology can boost learne'rs literacy and it prepares the learners or the young people for the reality of digital workplace. To effectively harness the potential of technology to support every child's learning, greater investment in resources, training and research is needed, as well as support from the policy makers, technology companies, academics and fellow education professionals. We must do everything we can to unlock the literacy skills that children and young people need to thrive at school at work and in life.(Education Business EB news 2019)

BARRIERS AND CHALLENGES

Table 19 Barriers and Challenges occur during the implementation of technology integration towards curriculum instruction

Challenges and Barriers	Description	Reference/ Source	Findings
1. Lack of Resources (lack of technology, Insufficient access, Scarcity of time, inadequate technical support.	- A lack of resources can particularly inhibit integration in the media center. Since students in the library typically deal with tangible items- books, encyclopedias, computers and the like- creating a technologically integrated curriculum may seem daunting when the things are not present.	Byers (2016) The 'Learners' barriers in embracing technology	Educators in lower socio-economic districts/clusters, this can be particularly difficult to overcome, as ever increasing budget cuts in MOOE necessitate teachers to use their own pocket due to fewer resources available.
2.**Inadequate Knowledge & skills**(Lack of knowledge In specific technology & inadequate knowledge supported pedagogy, insufficient knowledge of technology related classroom management)	-even when proper resources are present, teachers often struggle with an adequate knowledge of specific technology, technology-supported pedagogy and technology-related-classroom management.	The Educational technology (Lim, Teo, Wong et. Al 2017)	For many educators particularly those who did not grow up with computers or the internet, technology can be a frightening concept. It may be easier to pass up the use of a tool rather than admit to inadequate knowledge.
3.Institutional Barriers (leadership,school-time-tabling structure, school planning)	- Factors outside of the classroom, including leadership, school time-tabling structure and school planning can all prevent effective integration of technology.	Becker(2018)	- this can be difficult to overcome, as they are all outside of the individual media specialists control. They may not become immediately apparent but rather only after initial efforts have been made, the institutional barriers include(leadership, school-time-tabling structure, school planning
4. Subject Culture	- refers to the general set of institutionalized practices and expectations which have grown up around a particular school, subject, and shapes the definition of that subject as a distinct area of study	Selwyn (2017)	Because of this set of institutionalized norms, teachers may believe that certain types of technology that they do not believe fit in with their subject.
5. Assessment	Currently assessment in schools typically take the form of school and national high stakes testing, meaning that assessment has serious consequences such as promotion or graduation for students. Like no child left behind	No child left behind perception (Bichelmeyer&molenda, 2017)	This act puts a lot of pressures on teachers and schools to succeed. Like it leaves little time, facilitating assessment rather than learning, result in fewer resources of technology, learning test-skills instead of 21st century skills & most of all neglecting higher-level critical thinking or 21st century skills.

Table 19 Barriers and Challenges occur during the implementation of technology integration towards curriculum instruction as perceived by teacher-respondents.

N=50

Barriers and Challenges occur during the implementation of technology integration towards curriculum instruction as perceived by the teacher-respondents.	Weighted Mean	Verbal Description
1. **Lack of Resources** (lack of technology, Insufficient access, Scarcity of time, inadequate technical support.	2.16	**D**
2. **Inadequate Knowledge & skills** (Lack of knowledge In specific technology & inadequate knowledge supported pedagogy, insufficient knowledge of technology related classroom management)	1.38	**SD**
3. **Institutional Barriers** (leadership, school-time-tabling structure, school planning)	1.04	**SD**
4. **Subject Culture(**institutionalized norms of belief that one subject is distinct to others and cannot used the same technology in actual instruction)	1.30	**SD**
5. Assessment(leaves little time, facilitating assessment rather than learning, learning test skills instead of 21st century skills)	3.56	**SA**
	1.89	

Legend:
3.26 - 4.00-Strongly agree (SA) 1.76 - 2.50 –Disagree (D)
2.51 - 3.25-Agree (A) 1.0 - 1.75 -Strongly disagree (SD)

Table 18 exhibits the barriers and challenges in injecting technology within the curriculum instruction. Based on the data presented it is evident from the weighted mean of 3.56 that the respondents have **strongly agreed** that **Assessment** is the hardest part on them to incorporate technology within the curriculum instruction. The pressure related to high –stakes testing may leave teachers little time to experiment with new instructional methods involving technology. When teachers must devote time to teaching skills that will aid in assessment instead, it can put away from the precious few opportunities to utilize technology. In addition to the time spent teaching material that will be tested, the sheer amount of time that must be dedicated to the testing process itself can serve as a barrier as standardized testing is typically done several times in classrooms.

SIGNIFICANT RELATIONSHIP BETWEEN THE IDENTIFIED PROFILE AND THE EXTENT OF IMPLEMENTATION

Table 20 The Significant Relationship between the Identified Profile and the level of Technology Implementation Integration

N=50

PROFILE	COMPUTED CHI-SQUARE Value	P-VALUE	DECISION	VERBAL INTERPRETATION
Age	- 0.587	0.221	Accept Ho	No Significance
Highest Educational Attainment	- 0.489	0.325	Accept Ho	No Significance
Years in Service	1.000	0.000	Reject Ho	Significance
Gender	0.107	0.840	Accept Ho	No Significance
Total amount of training and seminars attended	1.000	0.020	Reject Ho	Significance
Teaching class size	1.000	0.010	Reject Ho	Significance
Subject taught and its value for technology integration	-0.764	0.077	Reject Ho	No Significance

Table 20 presents the significant relationship between the identified profile and the level of implementation of technology integration towards actual instruction. The computed chi-square values of the variables under teachers' profile are as follows: - *0.587 for age with a p-value of 0.221, 0.489* for Highest Educational Attainment with a *p-value of 0.325, 1.000* for the number of years in service with a p value *of 000, 0.107* for gender with a *p-value of 0.840*, and - *0.764* for ratings with a p-value of *0.077. 1.000*for total amount of training with a p value of *0.000, 1.012* for teaching class size with a p value of 0.000 and last but not the least -*0.764* for subject taught and its value for technology integration with a p value of *0.0.77*

It is therefore evident that 4 out of 7 variables from the given profile were accepted except for these three*: years in service, total amount of training/ seminars attended and teaching class size*. which were rejected because it's computed chi-square value is higher than the p-value. This finding implies that there is *no significant relationship between the Age, Highest Educational Attainment, Gender,and the subject-taught by the teacher-respondents as to the level of technology implementation in instruction.*

These findings also manifest that the number of years in teaching matters and the number of trainings and seminars attended helps the teacher enhance his/her expertise in actual Instructional Setting. The findings jived with the average teaching experience of *11 to 15 years* which revealed that the teacher-respondents were considered experienced teachers and more exposed to teaching approaches, strategies and techniques.

The findings was related to the study of Kini, T. &Podolsky, A. (2017) on his review of 30 studies published within the last 15 years that meet rigorous methodological criteria in analyzing the effect of teaching experience on student outcomes in the United States, he found out that teaching experience plus relevant and updated trainings and seminars attended are positively associated with student achievement gains throughout a teacher's career. As teachers gain experience, their students are more

likely to do better on other measures of success beyond test scores, such as school attendance. Teachers make greater gains in their effectiveness when they teach in a supportive and collegial working environment, or accumulate experience in the same grade level, subject, or district. More experienced teachers confer benefits to their colleagues, their students, and to the school as a whole. In addition, teaching class size also really matter as this is one of the factor to consider when evaluating a school's effectiveness. Education researchers FredirickMosteller (2017) suspect that class size education in the early grade helps students achieve because there is a greater opportunity for individual interaction between student and teacher in a small class. Teachers generally have better morale in a small class, too, and are less likely to feel overwhelmed by having a variety of students with different backgrounds and achievement levels. As a result, they are more likely to provide a supportive environment.

4. SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter abridges the result of the study. It presents the summary, findings, conclusions, and recommendations for improvement. The summary was based from the purpose of the study. The findings answered the sub- problem and the conclusions answered the main problem which are both gathered from the results of the responses and perceptions of the respondents. In addition, recommendations were based from the discoveries and finish of the review.

SUMMARY

The study looked into the relationship between the identified information variables from the respondent-groups and to what extent is the level of implementation of technology integration on the curriculum domains as a basis for developing an enhanced curriculum and technology integration instructional guide. It also ventured into the relevant demographic profile of the student-respondents as to age, gender, chosen SHS track, specialization, multi-media available at home, experience of using the internet, attitude towards technology usage and learner's interaction on curriculum and technology integration. Teacher-respondents Demographic profile also put into consideration as to their age, gender, number of years of teaching, highest educational attainment, total amount of relevant training/seminar attended, subject taught and its value for technology integration and their hold teaching class size. In connection, it also identified the school technology resources. Furthermore, it also determined the seven instructional domains with its level of technology integration. Lastly, it discovers the barriers and challenges occur during the implementation of technology integration across curriculum instructional setting.

FINDINGS

On the basis of the data gathered, findings were revealed that 50 was the total number of teachers who participated in the survey which are all handled subjects under the Senior High School Curriculum, whether core, specialized or applied field. Most of the teacher-respondents are within the millennial age bracket which ranges from 21-30 years old the given data was congruent to the most number of years in teaching experience –ranges from 1- 10 years from the teacher-respondents group. Where we can consider as a novice to proficient teacher level of expertise. Gender of teacher-respondents shows that 33 or 66 percent of them are female and only 17 teachers or 34 percent of them are male. Educational Attainment among teacher-respondents revealed that only 20 or 40 percent have earned master's degree units, 18 teachers or 36 percent are Bachelors Degree and the remaining 12 or 24 percent wither Master's degree holder or with doctorate units only. Study also found out that 25 teacher-respondents or 50 percent had undergone less than one semester course of seminars and trainings. Where we can testify that it does not guarantee teachers expertise when it comes to technology and curriculum integration.

Moreover, gathered data also shows that 23 out of 50 teacher-respondents which consist of 46 percent are handling core subjects higher than those 17 teacher-respondents or 34 percent of them handling specialized subjects and only 10 teachers or 20 percent who are into research & statistics related subjects. Lastly, data shows that 30 teacher-respondents or 60 percent of the total teacher-respondents handles a big class size with range of 40-50 students per class. One of the sighted factor is the consideration of the availability of school technology resources per shops preferably the handheld devices and equipments to accommodate learners need during hands-on-experiences or actual skills demonstration that in most cases 10-15 students class size usually handled by TVL/ specialized teachers contrary to core & research subject teachers who handles bigger class size as the multi-media devices can be used as a general tool for teaching. Therefore, school availability of technology resources has something to do with its distribution to teacher-student ratio/class size.

On learners data gathered, 310 learners ages ranges from 16-17 years old or 51.67 percent of the total student-respondents which is appropriate to an equivalent age of grade 11 student and 250 learners ages ranges from 18-19 years old whose also equivalent age for a grade 12 student. In addition, only 40 learners or 6.66 percent whose age can be considered as late in schooling. Other data indicates the distribution of learner-respondents where 54.66 percent are female and 45.34 percent are male. Female respondents comprised the majority of the total 600 sample respondents. Among the three selected Senior High Schools majority of the learner-respondents are enrolled in TVL(Technical Vocationl Livelihood track)which consist of 390 in population or 65 percent and only 210 learner-respondents or 35 percent who were enrolled in Academic track. TVL and Academic track population vary on learners chosen field of specialization. With regards to television, radios, computer and internet available at home it can be implied that most of these research respondents belonged to the marginalized sector of the society.

In student's experiences upon using internet -results find out that learners tend to use more on playing online games and downloading google applications for entertainment and in preparing assignments and projects which also good to know that there is a balance between academics and time for entertainment. Students attitudes towards using technology in learning results find out that majority of the learners would like to know how to operate basic handheld devices and equipments in TVL class, they also prefer to be a better learner if they knew how to use technology properly and most of all student-respondents believe they can improve

their technology skills with the help of the teachers. It is similar to the result of learners interaction in regards to the characteristics of curriculum and technology integration, wherein majority of the statements that talks about traits of being a 21st century learner got a verbal description of *strongly agree.* The survey simply proves that learners nowadays really knows how to weigh things such how to identify trustworthy, credible and reliable websites to use as reference or addition to their learning and they learned best If there is technology involved.

Comparatively, the level of implementation of curriculum and technology integration effectiveness explains as to the following domains. First, the faculty professional communication was on the highest level, followed by monthly school celebration and classroom activities. Research works, learner's extrinsic motivations towards academics and learners monthly attendance whose level of implementation were on moderate level while performance/product task has the lowest level of implementation as perceived by the respondents. Likewise, the availability of school technology resources among the three selected schools based on the gathered data 44.40 percent responded that their hold of resources is Sufficient while 35.2 percent had responded that their resources are limited and only 20.40 percent responded that they had plenty of resources specifically in handheld devices among TVL shops. It is still an alarming fact of 35.2 percent responded that their resources are limited.

Along with the barriers and challenges in injecting technology within the curriculum instruction. Undoubtedly, it is evident that the respondents have **strongly agreed** that **Assessment** is the hardest part on them to incorporate technology within the curriculum instruction. The pressure related to high –stakes testing may leave teachers little time to experiment with new instructional methods involving technology. When teachers must devote time to teaching skills that will aid in assessment instead, it can put away from the precious few opportunities to utilize technology upon curriculum instruction.

Lastly, the findings of Significant Relationship between the Identified Profile and the level of Technology Implementation Integration clearly state that 4 out of 7 variables from the given profile were accepted except for these three: *years in service, total amount of training/ seminars attended and teaching class* size. This finding implies that there is *no significant relationship between* the *Age, Highest Educational Attainment, Gender, and the subject-taught* by the teacher respondents as to the level of technology implementation in instruction whereas, *There is a great significant relationship of level of implementation against teachers years in service, amount of trainings/seminars and their class size handled.*

These findings also manifest that the number of years in teaching matters so as the number of trainings and seminars attended helps the teacher enhance his/her expertise in actual Instructional Setting. The findings jived with the average teaching experience of 11 to 15 years which revealed that the teacher-respondents were considered experienced teachers and more exposed to teaching approaches, strategies and techniques.

CONCLUSION

Curriculum and technology integration in Instructional Setting was proven helpful not only for the teachers but most especially for the learners for them to be holistically prepared and competitive enough brought by the changes of 21st century global skills. Teachers have lesser preparations and can focus to a specific subject which make him/her mastered the lesson while integrating it into better technology skills. Resulting to the better performance of the learners in the class. However, despite of its effectivity it still has disadvantages that must be rectified.

RECOMMENDATION

On the basis of the findings revealed in this study, the researcher recommends that the Proposed Senior High School Curriculum and Technology Integration Instructional Guide.

BIBLIOGRAPHY

[1] Aharoula A. and Valanides N.(2018). A Socio-Technical Analysis of Factors Affecting the Integration of ICT in Primary and Secondary Education.

[2] Aust, R., Newberry B., and O'Brien J. (2015) Learning Generation: Fostering Innovation with Tomorrow's Teachers and Technology *Journal of Technology and Teacher Education* p.167-95.

[3] Bua P, and Peggy F.(2017). Teacher Educators' Beliefs and Technology Uses as Predictors of Preservice Teachers' Beliefs and Technology Attitude.p.93-112.

[4] Colin B. (2017). Transforming the K-12 Classroom with ICT: Recognizing and Engaging New Configurations of Student Learning.DC: American Association Publishing.

[5] Can J., Subramanin M. Bitter, Gary G., Lajeane G. Thomas, and Knezek G. (2017)Nation Educational Technology Standards: developing new learning environments for today's classrooms." *p.*52-8. *Education Full Text.*

[6] Cadiero K, (2017).Teachers and Technology: Engaging Pedagogy and Practice. p.452-468.Turner. New York: Norton

[7] *Casas P. (2018).National Educational Technology Standards for Students: Connecting Curriculum and Technology.* Eugene, OR: International Society for Technology in Education, Print.

[8] Cornu B. (2017) Characteristics of an Effective Integrated Curriculm. *ConnectEd*, New technologies: integration into education journal.

[9] David J., (2016). The reality of learners' achievements with IT in the classroom." *Integrating Information Technology into Education*.

[10] Edutopia G (2017). What is Successful Technology Integration?" *Edutopia*. George Lucas Education Foundation,

[11] ErtmerJ., Peggy A., Deborah Conklin, and Judith Lewandowski.(2018) Increasing Preservice Teachers' Capacity for Technology Integration through the Use of Electronic Models." *Teacher Education Quarterly*

[12] Ertmer J, Peggy A.(2018). Addressing first- and second-order barriers to change: strategies for technology integration." *Educational Technology Research and Development* 47.4 *Education Full Text*

[13] Hickey D., Ann C., Kindfield H., and Horwitz P.(2018) Integrating Curriculum, Instruction, Assessment and Evaluation in a Technology-Supported Genetics Learning Environment." *American Educational Research Journal* 40.2 (2018):495-538. *Education Full Text*.

[14] Hu P. (2019).Creating an Environment for Pre-Service Teachers to Develop Technical Pedagogical and Content Knowledge."

[15] *Hershey E. (2019) Technologies for Enhancing Pedagogy, Engagement, and Empowerment in Education Creating Learning-friendly Environments*. P.24-32 Science Reference Publishing

[16] Ottenbreit L., Glazewski K., andTimothy J. (2017)"Teacher value beliefs associated with using technology: Addressing professional and student

[17] Peck C. (2015) High access and low use of technologies in high school classrooms: explaining the apparent paradox." *American Educational Research Journal* p.38-813-34. *Education Full Text*. needs." *Computers & Education* 55.3

[18] Steven S. (2018) "Integrating the Study of Technology into the Curriculum: A Consulting Teacher Model." *Journal of Technology Education* Vol 18.1

[19] Watson D. and Tinsley D. (2015) Does Teaching Experience Increase Teacher Effectiveness? A Review of the Research (research brief). Palo Alto, CA: Learning Policy Institute.

[20] Watson Ed and Tinsley D. (2017) Integrating Information Technology into Education. Housework Published