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EFFECTS OF TECHNOLOGY TO EDUCATIONAL LEADERSHIP SETUP AND PERFORMANCE OF DepEd KEY OFFICIALS IN THE NEW NORMAL

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ABSTRACT

Changes in people's life and work is inevitable and a new chapter in human development with extraordinary technology advances are the current trend. The study focused on the effects of educational technology leadership and performance of school officials in the new normal setting in the province of Capiz. The research study was conducted in public schools in Capiz in the first semester of school year 2020-2021. The research design used was descriptive method. The nature of the data analysis was both qualitative and quantitative with Eighty-Eight (88) school heads as respondents from the different schools in the province of Capiz. The researcher constructed survey instrument with some ideas and concepts from the study of Anderson and Dexter (2005) and Metcalf and LaFrance (2003) was used. The instrument was validated by the panel of experts, pre-tested to 30 randomly selected respondents for validity and reliability where, reliability coefficient was 0.89. The demographic profile of the respondents such as sex, age, monthly income of the family and home location. The average time of mobile phone/laptop/computer use per day, for chatting and texting, for internet related to job performance and preference to chat/talk with teachers/employees on mobile phones/laptop/computer than face to face were included. The level of effects of technology to leadership in terms of learning environment, technology supported instructional methods and facilities and communication; level of effects of technology to performance of school leader in terms of communication support, task – oriented support, technological skills and competence support The inferential category covered the significant difference on effects of technology to educational leadership of key officials considering respondent's profile, effects of technology to performance of key officials considering profile of the respondents; significant difference between the level of effects of technology to educational leadership and level of performance of key officials, the significant relationship on the level of effects of technology to educational leadership and performance of key officials and some variables and significant relationship on effects of technology to educational leadership and performance of DepEd key officials in the New Normal. The analysis and interpretation of the data was facilitated by using the descriptive statistics such as frequency count, ranking, percentage and mean were used. For inferential statistics, t-test was used to determine the significant difference and Pearson r to determine the relationship of independent and dependent variables. The respondents were 41 - 50 years old, male and female, with income above 20,000, reside in the city, use mobile phone for 4 hours a day, 3 hours use per day for chatting and texting, 2 to 3 hours for internet related to job performance, and preferred

to chat to teachers, staff and other leaders for 1 to 2 hours. Results underlined mobile phones/laptop/computer was employed for convenient ways of reaching employees and personnel in the new normal setting. The effects of technology constituted; teachers were able to simplify lessons, have real-time feedback, designed flexible assessment criteria for student's skills and competences have made students interactive and teacher's re-discussion of lessons easy and comprehensive. In terms of technology supported instructional methods, education was made possible through technology in spite of hindrances and inadequacies, technology has supported the construction of instructional methods, expedite communication, capacitate teachers on technological trends and changes related to effective teaching and have a channel for first-hand feedback from students and stakeholders have improved proficiency in learning and teaching. As to facilities and communication, effects of technology was highly manifested in improved collaboration in utilizing school resources, constructed infrastructures for more engaged environment, innovation of traditional classroom environment to technology savvy environment, provide students with the tools needed to navigate the complex world and make informed decisions as members of the community despite of budget limitations of the school. Findings disclosed that technology serves as the leaders' assistant in performing the multitude of work brought about by the pandemic. The performance of school leaders were positively affected by technology in terms of communication support, messages were sent to teachers and subordinates on time and in efficient manner, built capability in social networking and occasional updated about school events and attract parents and interested parties for collaboration and video conferencing. Due to technology, the performance of school leaders was very high demonstrated in simplifying tedious and repetitive tasks, upgrading assessment process, innovative skills, collaborative learning approaches, accomplished communication work, promoted automated work processes of employees but teachers and students were less motivated due to the needed intellectual efforts beyond what is required of them. The effects of technology to performance is high in terms of technological skills and competence support exhibited in teachers Word Processing Skills, Spreadsheets Skills, Digital Cameras manipulations, Computer-Related Storage Devices (Knowledge: disks, CDs, USB drives, zip disks, DVDs, etc.), and Knowledge of PDAs. There was a significant difference in the level of effects of technology to educational leadership of key officials considering monthly family income, average time of mobile phone laptop computer use per day for chatting and learning environment had displayed diverse effects on the leadership of school leaders in terms of profile of the respondents, other factors have insignificant difference. There was significant difference in the effects of technology to performance of key officials. Monthly family income and average time of Mobile Phone laptop computer use per day for chatting are factors of performance skills and competence support of school leaders. A significant difference prevailed between the level of effects of technology to educational leadership and level of performance. Variations were manifested between learning environment, technology supported instructional methods and facilities and communication with performance variables communication support, task-related support, technological skills and competence support. Significant relationship among the variables

were evident, educational leadership factors and factors of performance were interlinked, educational leadership set up and initiatives of leaders have significant impact on the field of education in increasing student achievement and overall school performance.

Key words *:* *Educational Leadership Setup, Technology Innovative Skills, Collaborative Learning Approaches*

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1. Introduction

Numerous jobs in the past do not use technology. Currently businesses, companies big and small be it in urban or remote areas have integrated technology in accomplishing transactions, improved productivity and performance (Farida and Setiawan 2022). Further, transformation of telecommunications, infrastructure and state-of-the-art solutions that allow small, medium and even big enterprises that tap their fullest potential will be attained through technology. By adopting technology, businesses improved and gained agility. Substantial advances in communication technologies have allowed corporations to organize their teams better. The adoption of technology solutions for business allows small and medium-sized enterprises to run efficiently as larger corporations. Technology solutions for business allow executives to generate new sources of revenue for their enterprises. Information technology infrastructure modernization enables businesses to drop outdated legacy systems for cloud storage solutions which can be carried out also in education. Technology solutions for business can help better protect corporate information (He, Zhang, Li, 2020) Technology support for small businesses can help create encryptions and firewalls that enhance data security. Through technology customers have better experience. According to the U.S. Department of Education a blend of classroom and web-based teaching and learning offers access to the widest range of learning modes and methods for developing student skills and expertise as learners. Many findings on blended learning show an increase in learners' ability to learn collaboratively, think creatively, study independently and tailor their own learning experiences to meet their individual needs. Through careful, thoughtful blending and with consideration for technological skill levels and Internet access, learning for anyone can take place with greater flexibility and convenience. In the Philippine education, teachers were required to cope up with the changing times and have to use technology despite of limited knowledge. Technology is being used by children and adults on a daily basis by way of web surfing, texting, social networking, interactive games, and in more ways. Thus, the use of technology and teaching students have to use it has become a high priority in the public schools. There is also a common focus on raising student achievement while integrating technology as a tool. Due to the large use of technology, teaching and learning is essential on how to make a lasting impact on how students learn. As Cristen (2009) stated with the onset of the Common Core Standards and their emphasis on technology, the use of technology will become an even bigger priority in schools. However, technology causes students to be more engaged.

Technology is becoming such an integral part of our everyday world. Also, students and adults are using technology on a daily basis to communicate, get information in multiple ways. The prevalent daily use of technology in people's lives overall makes the use of technology very relevant to the students and provides a connection that will greatly benefit student learning.With the advantages, the current study intended to identify the extent of technology integration in Grade 11 and 12 along with the span of time Grade 11 and 12 students engage in multiple uses of technology and the extent technology helped them in their studies. Likewise, the ways in which technology have aided teachers in the enrichment of their lessons and tasks to benefit learning. In addition, the weaknesses, challenges and difficulties of the integration that negatively impact parents, schools and learners will be among the targets for intervention to speed-up the recovery process and to provide data for schools to consider in planning to the future especially at this time of post-pandemic.

Statement of the Problem

The study aimed to find out the effects of technology integration to junior and senior (Grade 11 & 12) high school students at Integrated National High Schools in the Municipality of Sapian, Capiz. Specifically, the study sought to answer the following;

1. What is the socio-demographic profile of the respondents in term of sex ages, home location, estimated monthly family income, length of study time daily, average time of mobile phone/laptop/computer use per day for chatting and texting, internet related to class instruction, preference to chat or talk with friends and teachers than face to face?
2. What is the level of effects of technology integration in terms of;
   A. Teachers Abilities and Skills
   B. Teaching Methods
   C. Student Engagement
   D. School support/facilities
   E. Negative Effects
3. Is there a significant difference in the level of effects of technology integration to Grade 11 & Grade 12 high school students considering profile of the respondents?
4. Is there a significant difference in the level of effects of technology integration to Grade 11 & Grade 12 high school students considering average time and preference towards use of mobile devices?
5. Is there a significant relationship on the effects of technology integration to Grade 11 & Grade 12 high school students considering profile of the respondents?
6. Is there a significant relationship on the effects of technology integration to Grade 11 & Grade 12 high school students considering average time and preference on use of mobile devices?
7. Is there a significant relationship on the effects of technology integration to Grade 11 & Grade 12 considering teacher competence and school factors?

Hypotheses

Based on the problems of the study, the following assumptions were tested.

1. There is no significant difference in the level of effects of technology integration to Grade 11 & Grade 12 high school students considering profile of the respondents?
2. There is no significant difference in the level of effects of technology integration to Grade 11 & Grade 12 high school students considering average time and preference towards use of mobile devices?
3. There is no significant relationship on the effects of technology integration to Grade 11 & Grade 12 high school students considering profile of the respondents?
4. There is no significant relationship on the effects of technology integration to Grade 11 & Grade 12 high school students considering average time and preference on use of mobile devices?
5. There is no significant relationship on the effects of technology integration to Grade 11 & Grade 12 considering teacher competence and school factors?

Theoretical Framework

The study was anchored on Engagement theory (Shneiderman, 1994, 1998; Shneiderman et al, 1995; Kearsley, 1997) and Technological Pedagogical Content Knowledge (TPCK) Framework of (Mishra and Koehler, 2006).

The theory of engagement holds students must be evocatively engaged in learning activities through interaction with others and worthwhile tasks. They should be consistently involved in manipulating tasks. The engagement could occur without the use of technology, but with technology learning environment and activities manipulation would be much easier and enjoyable. The theory encourage students to be team players where each player is given a chance to learn and develop useful knowledge that can be used in creative manner. Student activities include vigorous mental processes like creating, problem-solving,

reasoning, decision-making, and evaluation and essentially interested to learn due to the evocative nature of the events.

Technological Pedagogical Content Knowledge (TPCK) Framework of Mishra and Koehler (2006). The technology integration at multiple levels included theoretical, pedagogical, and methodological that provide teaching approach based upon the framework.

The integration of technology into the classroom, whether face-to-face, online or hybrid presents both opportunities and challenges. TPACK, is an essential skill for all teachers to possess since it is embedded inseparably and identified in three domains of knowledge needed to successfully integrate educational technology; Content Knowledge (CK), Pedagogical Knowledge (PK) and Technological Knowledge (TK). The cohesive overlapping of knowledge, skills, and abilities known as TPACK formed the basis for effective technology integration. The three domains need equal attention, importance and priorities because they are interdependent with one another. The study used the theory for vivid description of the effects of technology integration in instruction.

While the Theory of Technology Integration developed by Gunuc (2017) also support the research. Technology integration influenced engagement. As stated, the theory centered on the teacher and the student. The main idea that student success is related for effective learning through student engagement and technology integration. It emphasized, to achieve successful learning outcomes there should be quality student engagement and quantity would the student's psychological, cognitive, affective, behavioral responses and energies to participate in the learning process, academic and social activities inside and outside the classroom.

Conceptual Framework

Based on the conceptualized factors, the research identified the socio-demographic factors and the effects of technology integration in Grade 11 and Grade 12. The socio-demographic factors and effect of technology integration as to teaching methods, students engagement, school support facilities and negative effects.

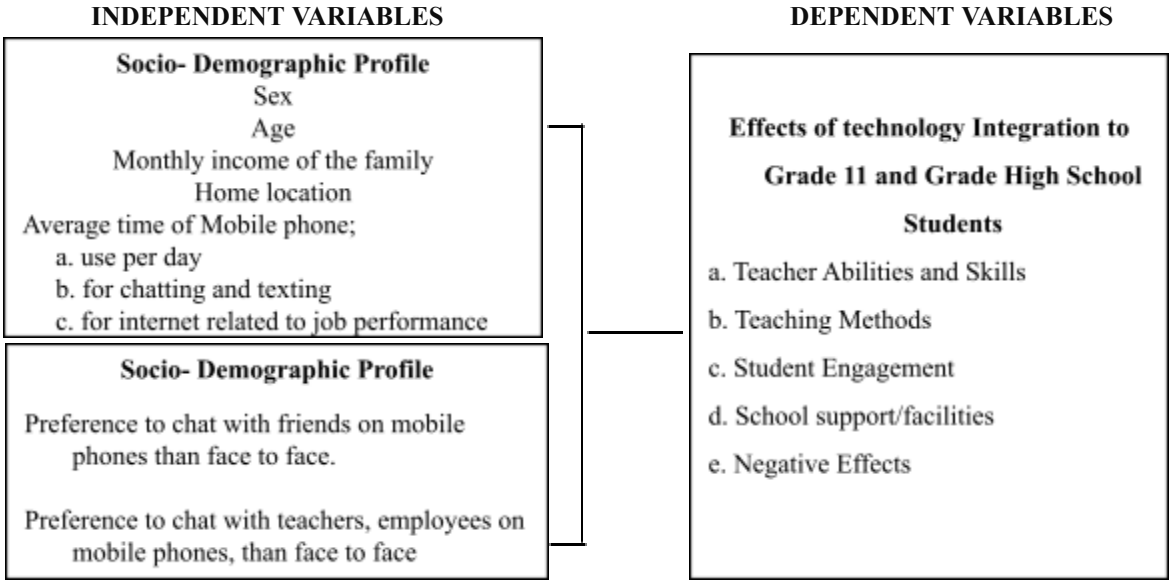

Figure 1. Schematic diagram showing the relationship of the variables

2. Literature Review

Foreign literature

Nearly every public school in the United States has been connected to the Internet, allowing students to connect with the world. Research has shown that technology can help students develop higher-order thinking skills, creativity, and research abilities when used for more ambitious learning goals. Technology offers active engagement, group participation, frequent interaction and feedback, and connections to real-world contexts. It also expands what students can learn by providing access to an ever-expanding store of information. Technology integration is only one element in a coordinated approach to improving curriculum, pedagogy, assessment, teacher development, and other aspects of school structure. The interactive nature of technology, exemplified by Web 2.0 tools, creates new opportunities for students to learn by doing tasks, receiving feedback, and building new knowledge. To kindle that flame in education, educators must meet students where they are and ensure they are fully engaged when encountering new material. Technology is an ever-present part of students' lives outside of the classroom, and many Montessori elementary students seem disengaged from traditional materials.

Engagement theory is a conceptual framework for technology-based learning and teaching, focusing on meaningful engagement in learning activities, Gunuc (2017)through interaction with others and worthwhile tasks. It emerged from experiences teaching in electronic and distance education environments(Shneiderman, 1994, 1998; Shneiderman et al, 1995; Kearsley, 1997).. While it could occur without technology, the theory emphasizes the importance of technology in the learning environment and activities. It shares similarities with constructivist approaches, situated learning theories, and adult learning theories due to its emphasis on meaningful learning, collaboration, and experiential learning. The engagement theory is a constructivist approach that promotes teamwork and creative learning in education. It focuses on active cognitive processes like creating, problem-solving, reasoning, decision-making, and evaluation. Students are intrinsically motivated to learn due to the meaningful nature of the learning environment and activities. The theory also emphasizes the importance of creating successful collaborative teams working on ambitious projects that are meaningful to others outside the classroom. This approach aligns with technology integrated matrix concepts and encourages students to be creative and engaged in learning. Theories can be used by educators to incorporate technology into classrooms at all educational levels. Educators can learn from others and use various methods to engage students. Simple devices like television, CD players, videos, radios, and cameras can be beneficial for both teachers and students. Technology tools are currently used in social media and collaboration, supporting the social nature of learning. These technologies teach old and new things in new ways, and becoming literate in the 21st century requires learners to use technology for accessing, analyzing, and organizing information. The International Society for Technology in Education (ISTE) updated its National Educational Technology Standards for Students in 2007 to better describe the skills needed in an increasingly digital world.

The integration of technology in education aims to improve the student learning experience by incorporating various types of technology, such as virtual classrooms, into the classroom. This approach fosters active engagement with learning objectives and provides instant access to information. The use of technological devices in the classroom is explored to create meaningful experiences for students of all ages. The implementation of technology also facilitates differentiated instruction to meet individual student needs within a broader classroom environment. The integration of technology in the classroom is expected to bring positive changes.

The integration of technology in the classroom is not a financial burden for school districts, but it can foster student engagement for auditory and visual learners. Simple technologies like PowerPoint presentations, games, internet homework assignments, and online grading systems can significantly impact students' growth. Teachers can use tools like Kahoot, which is accessible on phones or computers, to work independently or in teams. Online assignments via platforms like Blackboard, Brightspace, and Moodle can also increase student engagement and organization.

Technology has become a crucial tool in education, despite teachers' limited knowledge. It is used daily by both children and adults, including web surfing, texting, social networking, and interactive games. As a result, teaching and learning have become a high priority in public schools. As Cristen (2009) stated, the Common Core Standards emphasize technology, making it even more important. Technology increases student engagement and relevance due to the rapid global arrival of new technologies. Therefore, integrating technology into teaching and learning is essential for a lasting impact on student learning.

Technology is a common tool among students, often seen as useful and enjoyable. It can significantly enhance learning by deepening engagement in meaningful and intellectually authentic curriculum (De Pasquale, McNamara, & Murphy, 2003. It is particularly beneficial for English language learners and children with disabilities. Teachers should model the use of technology to ensure children see the appropriate use and benefit from exposure to advanced applications(Keser, Huseyin, & Ozdamli,2011). Technology can be used for establishing meaningful projects, promoting critical thinking and problem-solving, and increasing student collaboration. A study on Wiki technology in a college English as a foreign language writing class found that students received immediate feedback from instructors and learned vocabulary, spelling, and sentence structure by reading their classmates' work (Lin & Yang, 2011).

A study on pre-service teachers' experiences with technology in math lessons found that students were engaged and able to discuss their learning the following day. Some students believed that technology helped them understand the teacher's message (Herron, 2010).. Technology can create hands-on, meaningful lessons and increase student engagement and motivation. Integrating technology with peer-led discussions of literature can also increase motivation and expose students to other ideas and cultures. Technology is a great vehicle for effective and permanent learning in the 21st century, and providing information and communication technologies for teaching and learning will have advantages.

Students are enthusiastic about using laptops for learning, demonstrating their ability to interact, exchange ideas, research independently, adapt to new situations, and take ownership of their own learning (Miller, 2011). Early exposure to technology is crucial for students' comfort in using it at school. Elementary school teachers actively engage students and create a stimulating work environment (Kenney, 2011). A study in Turkey found that exposure to information and communication technology at home and school positively impacts students' math and science achievement scores.

The integration of information and communication technology in classroom instruction has been shown to positively impact student learning. A study by Baytak, Tarman, & Ayas (2011) found that students believe their learning is improved by incorporating technology into the curriculum. This technology can increase motivation, social interactions, and engagement, and unlock the keys of learning for all students. Teachers have been trained to integrate technology into general education lessons, and a practical technology support plan has been implemented for students with special needs, enabling them to meet their IEP goals more quickly.

The Dogan (2021) study examined the impact of technology support, teachers' confidence, beliefs, and perceived skills on the use of instructional and application software. The findings revealed that perceived technology skills were the most significant factor in teachers' use of these tools (Ritzhaupt et al. 2012). Professional development for teachers' perceived skills could increase their use of these tools. The study also found that the total effect of support from technology specialists for instructional software use was more than application software use(Fernandes et al. 2014). The study aims to address gaps in literature on the effects of demographic factors and technology availability on teacher use of technology. As K-12 schools gain access to technology, understanding teachers' viewpoints and perceptions is crucial. However, a comprehensive account of teacher use of technology and related factors is still limited.

The study reveals that students generally have a positive attitude towards using writing tools, which can enhance their writing skill development. This software can also increase motivation and autonomy, making it a useful support tool in EFL classrooms. Banitt et al.'s (2013) study found a 5-10% increase in student engagement and enjoyment in lessons involving technology compared to traditional parallel lessons. Tosco's (2015) study in a Montessori upper elementary classroom in Raleigh, North Carolina, found students

preferred lessons with technology, increased engagement, and a 16% increase in accuracy based on short answer responses.

Local Literature

The use of Information and Communication Technology (ICT) in education is beneficial, impacting learners' experiences (Obillos and Dela Rosa. 2016). However, attitudes and experience of language teachers influence ICT integration in teaching English as a Second Language. Experienced teachers have more exposure to ICT use, but view insufficient resources like limited internet access as detrimental. Both subjects have positive attitudes towards ICT integration in English Language Teaching and hope for its strengthening in the Philippines. The paper presents implications on ICT use in basic education institutions.

Tomaro and Mutiarin (2018) and Hero (2020) conducted a study on the integration of Information and Communication Technology (ICT) in the Philippine educational system. They reviewed two scholarly works, promoting ICT education in developing countries and developing ICT curriculum standards for K-12 schools. The study found that policy actions to fully integrate ICT in education include teacher training, computer infrastructure provision, strategized curriculum integration, and strong leadership. The government's efforts were also highlighted. The study also highlighted the inadequacy of school facilities and its impact on the competitiveness of Filipinos in the job market and the country's technological advancement. Hero's research aimed to understand the impact of technology integration on the teaching performance of Social Studies teachers in public high schools in Valenzuela City. The results showed that Social Studies teachers were satisfied with all seven indicators of teaching performance, and technology integration had a significant impact on teaching performance.

Rosales' study highlights the increasing demand for Technology Integration in education, as schools adapt to 21st-century learners. This integration process involves understanding how technology is used in pedagogy, equipping teachers through continuous training programs, and promoting professional development. Understanding Technology Integration involves defining the term, exploring teacher preparation, and implementing it as an educational experience. Focusing on learning with technology rather than learning about it makes it more achievable, as it goes beyond tangible products.

Bucci et al. (2003) emphasize that while there are common theoretical threads in contemporary teacher education programs, each program is unique. The use of technology in content courses must fit the resources, program demands, and theoretical frame. Incorporating technology simply because it is available is not beneficial. The ISTE standards drive technology infusion, but it is essential to integrate it to improve learning. The appropriate use of technology provides opportunities for students to observe and reflect, as well as to put more of themselves into lessons through presentation software and group authoring. However, the most important aspect of technology use in teacher education programs is its fit with the program's theoretical frame.

New technologies, such as smart devices, have revolutionized learning by enabling more efficient, flexible, and comfortable learning experiences. Smart education, a concept in the digital age, includes a four-tier framework of smart pedagogies and ten key features of smart learning environments. These include class-based differentiated instruction, group-based collaborative learning, individual-based personalized learning, and mass-based generative learning. Teaching is a crucial component in educational planning, and studies have shown that effective teaching methods help students question their preconceptions and motivate them to learn. Nationally and locally recognized professors play a crucial role in providing ideas, insights, and strategies to educators, and should be more involved in regulating teaching rules.

3. Research Method

The research used the descriptive correlational method. The participants of the study was composed of four hundred two (402) grade 11 and grade 12 students. The research was conducted during the pandemic. A researcher made survey questionnaire that has been validated by the panel of experts was used in the study. However, some of the items was source out from which has been modified for fitness and appropriateness to answer the concerns of the study. The questionnaire consisted of two parts; profile of the respondents and effects of technology integration. The research instruments used to gather the needed data was a survey questionnaire distributed personally and through Google forms. Conversely, to make the data substantive yet exhaustive in response to the prevailing pandemic, a mix method of gathering data was used. Hard copies of the research instrument was distributed personally to the respondents. Strict observance of health safety protocols was followed. The survey questionnaire were simply left to the respondents and agreed on the specific time for retrieval in compliance with the lesser time contact as per health safety guidelines. The statistical tools used in the study were frequency count, percentage, mean, standard deviation, t-test and

Analysis of Variance (ANOVA) for significant difference among variables. While Pearson r was used to test for significant relationship. The level of significance for all inferential tests was set at 5% Alpha. The dependent variables was the effects of technology integration to Grade 11 and Grade 12 in terms of teacher and school factors while the socio demographic profile served as the independent variables.

4. Result and Discussion

Socio-demographic Profile of the Respondents

Findings revealed the respondents were Grade 11 and 268 (66.7%) were Grade 12, female, 264 (65.7%) and 138 (34.3%) were males, majority were 17 years old which was 216 (29.6%), and 186 (21.8%) were 18 years old, with 317 (37.1%) have monthly income below 15, 000, 61 (37.1%) have 15,000 – 25,000 and 24(2.8%) have income 25,001 and above. The respondents also reside in the barangay, 274 (68.16%), from town was about 128(31.84%), has 2 – 3 hours average length of study time, 196 (48.76%) have below 2 hours of study and only 80 (19.90%) were studying for four hours and above study time.

Table 1. Socio-demographic Profile of the Respondents

Year level	Frequency	Percent
Grade 11	134	33.3
Grade 12	268	66.7
Sex		
Male	138	34.3
Female	264	65.7
Age		
17 years old and below	216	25.3
18 years old and above	186	21.8
Monthly Income of the Family		
Below 15, 000	317	37.1
15,000 – 25,000	61	7.1
25,001 and above	24	2.8
D. Home Location:		
Barangay	274	32.1
Town	128	15.0
Total	402	100.0

The data on average time of mobile phone/laptop/computer use per day showed 161 (40.05%) of the respondents have below 2 hours average time of mobile phone/laptop/computer use per day, others have 2 – 3 hours while the shortest time for computer use per day was below 2 hours. For average time of mobile phone/laptop/computer use per day for chatting and texting results showed 216(53.73%) of the respondents spend below 2 hours average time of mobile phone/laptop/computer use per day for chatting and texting. As to average time of mobile phone/laptop/computer use per day of the internet related to class instruction findings highlighted 178 (44.28%) of the respondents spend below 2 hours average time of mobile phone/laptop/computer use per day of the internet related to class instruction.

Table 2. Socio-demographic Profile of the Respondents

Categories	Frequency	Percent
Length of Study Time Daily		
Below 2 hours	126	31.34
2-3 hours	196	48.76
4 hours and above	80	19.90
Average time of Mobile phone/laptop/computer Use per Day		
Below 2 hours	161	40.05
2-3 hours	142	35.32
4 hours and above	99	24.63
Average time of Mobile hone/laptop/computer Use per Day for chatting and texting		
Below 2 hours	216	53.73
2-3 hours	135	33.58
4 hours and above	49	12.19

Average time of Mobile phone/laptop/computer Use per Day of the internet related to class instruction		
Below 2 hours	178	44.28
2-3 hours	173	43.04
4 hours and above	51	12.68
Preference to chat/talk with friends on mobile phones/laptop/computer than face to face if given the chance		
Below 2 hours	225	55.97
2-3 hours	143	35.57
4 hours and above	34	8.46
Preference to chat/talk with teachers on mobile phones/laptop/computer than face to face if given the chance		
1- 2 hours	158	39.30
3 - 4 hours	165	41.05
5 hours and above	79	19.65
Total	402	100.0

On preference to chat/talk with friends on mobile phones/ laptop/computer than face to face if given the chance manifested the respondents spend below 2 hours have the preference to chat/talk with friends on mobile phones/laptop/computer than face to face if given the chance.

Findings on preference to chat/talk with teachers on mobile phones/laptop/computer than face to face if given the chance showed 158 (39.30%) of the respondents preferred to chat to teachers, within 1 to 2 hours through mobile phones or laptop/computer than face to face.

Effects of Technology Integration to Junior and Senior (Grade 11 & 12) High School Students at Integrated National High Schools in Sapian, Capiz

Presented in the preceding table discussion are the effects of Technology Integration to Junior and Senior (Grade 11 & 12) High School students at Integrated National High Schools in Sapian, Capiz. The effects were divided into five categories presented in Table 2a, 2b, 2c, 2d and 2e.

Effects of Technology Integration in terms of Teachers Abilities and Skills

On the effects of technology integration in terms of teachers' abilities and skills revealed that the technical skills and knowledge retention, were improved. Presentation of information was clear and in understandable manner, improved design skills and maximized use of external resources, increased motivation and self-esteem among students, expedite accomplishment of more tasks, vividly clarify doubts, improved teaching outcomes, higher productivity and quality of work. All these signified that use of technology sharpened the practical and mechanical skills of teachers in explaining lessons which improve retention of lessons taken in the class Likewise teachers were able to maximize the use of resources which motivated the interest and enthusiasm of students to expedite accomplishment of performance tasks. However, the areas that teachers need to have additional focus increased teamwork and collaboration with peers and administrative personnel, augment ability to discuss and emphasize important points, effective use of class time, eased in keeping up with changes in students and teacher's roles, simplified the complexity of the material to be covered and covered the amount of material/topics to be discussed in a short time.

Effects of Technology Integration in terms of Teaching Methods

The data on the effects of technology integration in terms of teaching methods revealed that among the effects were provide opportunity to students to learn in different ways, higher productivity and quality of work, willingness to answer questions and listen to the student opinions of other, and has the ability to relate course material to real life situations. This means that through technology, the teachers' capability were also enhanced that enable them to formulate strategies that provides various facets of learning opportunities, become proficient in their tasks and produce quality work.

Effects of Technology Integration in terms of Student Engagement

Findings showed that technology integration played major roles on the instructors' work that resulted to gain prestige and appreciation on their work as well as on materials they use for class instruction. Technology had also higher effects on students' learning, access to numerous resources which are difficult to secure, has impact on attendance, alertness and preparation in class session. But on participation in class discussions, time spent and take additional class for greater interaction, technology integration had mild effects. This implied that technology integration was instrumental in quality work of instructors, as teaching tool for enhancing instruction and use of instructional materials. Though results of integration of technology is less than perfect, it has accomplished more than other teaching instrument or devices. It connected Mueller et al. (2008) assertion technology use is a complex domain to uncover but with the rapid advances in technology and its integration in school, the complexities may be simplified. Especially, schools focused on reforms and opportunities to integrate technology into the classroom. As Scherer et al. (2019) contention the most effective factor to integrate technology into the classroom is the teacher themselves wherein the need to focus more on the individual variation in beliefs, attitudes, and skills among teachers is a priority. As Karaca et al. (2013) postulated teacher attitudes and beliefs on technology affects learning and its use makes the lessons more student centered.

Effects of Technology Integration in terms of School Support and Facilities

Effects of technology integration in terms of School support and facilities. Data revealed five items with mean from 3.60 – 3.80 interpreted with high effects of technology. The items were protected/ keep students safe from bad elements outside their home; gained support for differentiated instruction; conducted in-service/sent teachers to technology trainings, aided in visualizing and decision making and made the school technologically competitive. In contrast the items with mean from 3.41 – 3.55 though rated high belong to the lower bracket. These items were with adequate technologically knowledgeable staff and personnel, has incentive/support system for technology integration, adequacy of physical and technological infrastructure, augmented the budget for technology resources, with available technicians for repair and maintenance of the units and with available reserve it resources. It can be inferred that technology were instrumental in keeping students safe since the students stay at home preoccupied with the gadgets in accomplishing their performance tasks. Technology also exposed students to differentiated instruction; conducted in-service technology trainings with less challenges and difficulty; and make schools become technologically competitive. But technologically knowledgeable staff and personnel, adequacy of physical and technological structures and budget were limiting factors in the conduct of instruction. In Ghavifekr, Athirah, Rosdy (2015) ICT integration has achieved great effectiveness for both teachers and students due to well-equipped preparation of ICT tools and facilities that contributed success of technology-based teaching. Also, Carstens (2021) inferred technology enhanced many learning opportunities and allows for student comfort. Through technology learning and teaching became easier and enhanced because of the ease that technology provide with thousands of apps and websites available online have assist students and teachers. But the study of Murithi & Yoo (2021) highlighted teachers perceived ICT facilities were inadequate which challenge the integration of technology in the implementation of new curriculum.

Effects of Technology Integration in terms of Negative Effects

Effects of technology integration in terms of negative effects. Findings showed top four statements that describe the negative effects of technology integration with mean from 3.40 – 3.52 interpreted as high. These items were might make students easier to cheat, new technology is costly, has health hazards or related to medical problem, limited to word processing or basic research while modern technology are either not permitted or partially excluded. However the negative effects considered as moderately high were tendency of students in misusing technology, cause students to use unreliable resources for learning, make curriculum

planning more difficult and expensive, lack knowledge on how to use technology and choosing the most appropriate tool for the task, disconnect students from face to face relationship and distract the students. Data denoted that the tendency of students to cheat was high compared to the traditional method aside from new technology is expensive. Technology has been found also that it affects health or cause medical problems which may lead to complicated ones. Other effects which may lead to school problems were technology may be misused, become the source unreliable data and information and curriculum planners find it difficult. As to personnel and other technology users, the lack of knowledge on the use technology and choosing most appropriate tool for the task was a puzzling and challenging activity. Further technology was coined to disconnect and hinder interrelationship among students as compared to face to face relationship. In the study of Mahadir (2021) technology integration need school support and facilities to enable students with a set of skills to navigate through the variety of online tools and also provides teachers opportunities to educate students on digital citizenship and the new challenges to academic integrity.

Difference in the level of Effects of Technology Integration to Grade 11 & Grade 12 High School Students considering some variables

The difference in the level of effects of technology integration to Grade 11 & Grade 12 High School students considering some variables is shown in Table 3. Results showed that the profile considered such as year level, sex, age and home location have computed p-value lower than 0.05 level of significance. The hypothesis stating that there is no significant difference on the level of effects of technology integration to Grade 11 & Grade 12 was rejected. This means the variables have exhibited variation as to the effects of technology integration. The effects independently varied from one variable to the other. Since results differed due to some reasons, Courville, 2011 posited leadership process and related theory be adopted to effectively integrate technology to increase student achievement and overall school performance. Moreover achievements of students vary thus it is appropriate that implementation of technology integration be strengthened. As McClure (2018) acknowledged direction of effects be focused on implementation and use of technologies for work-related purposes, designs or features be tested and evaluated prior to adoption.

Table 3. Difference in the level of Effects of Technology Integration to Grade 11 & Grade 12 High School Students considering some variables

Source of variation		t/F	Sig. (2-tailed)	Probability
Year level		70.799	.000	s
Sex		69.872	.000	s
Age		58.744	.000	s
Home Location:		56.672	.000	s
Monthly Income of the Family				
Preference to chat/talk with friends on mobile phones than face to face	Between Groups Within Groups	3.621	.028	s

Difference on effects of technology integration to Grade 11 & Grade 12 considering average time and preference on use of Mobile Devices

Difference on effects of technology integration to Grade 11 & Grade 12 considering average time and preference on use of mobile devices. Results showed when the variables were tested as to difference on effects of technology integration between teachers' abilities and skills, teaching methods, student's engagement, school support facilities, negative effects and the average time of use per day, when used for chatting and texting, used for related class instruction, preference to chat/talk with friends than face to face if given the chance and preference to chat/talk with teachers than face to face if given the chance, the p-values

were within the 5% level of significance. The hypothesis stating that there is no significant difference between the level of effects of technology integration to Grade 11 and Grade 12 and average time of Mobile Phone Use per Day for chatting, texting and communicating with teachers, friends and classmates was rejected.

Conversely, the effects of technology integration on Grade 11 and Grade 12 with some variables implied dissimilarity existed. The difference can be attributed to different needs of students that is why needs-based technology integration education were tested to fit the rapid changing needs of students. Nonetheless rapid positive effect on teacher attitudes, such as computer anxiety, perceived importance of computers, and computer enjoyment were observable. As Ra (2019) stated extensive changes in the nature of work due to automation may cause displace of workers but Huang et al., (2015), identifying suitable technological concepts for fitness and may reduce challenges due to changes and inconsistent nature of technical ideas and perceptions at times.

Relationship on effects of technology integration to Grade 11 & Grade 12 considering profile of the Respondents

The relationship on effects of technology integration to grade 11 & grade 12 considering profile of the respondents. Findings showed five variables established significant relationship since the p-values of the variables were lower than .05 level of significance. The hypothesis that there is no significant relationship on the level of effects of technology integration to Grade 11 and Grade 12 and profile of the respondents such as age, monthly family income and teaching methods, student engagement and negative effects of technology integration was rejected. Specifically, the significant relationship existed between monthly Income of the Family and Teaching Methods with p-value of . 040, student engagement with sig. value of .000, home location, student engagement with .011 p-value and monthly income of the family and negative effects of technology integration with sig .043. The variables have significant relationship which indicated relevant connections with one another. While other profile variables failed to make connections which denoted negligible relationship. The factors correlated the least. Further the correlation in some variables were substantial and others have insignificant connection, as Johnson (2016) found that although technologies can be powerful means to improve learning, the teacher remains the critical factor to student success, and must be informed and supported with their needs. While Dautov 2020 had pointed among the challenges of integrating technology in the classroom is students may misuse technology and the assumption was supported by his findings that the differences in laziness levels as well as causes of laziness and procrastination were identified between students with high and low academic performance which might be credited to misuse of technology.

Relationship on effects of Technology Integration to Grade 11 and Grade 12 considering average time and preference on use of mobile devices

Table 4 is the relationship on effects of technology integration to grade 11 & grade 12 considering profile of the respondents.

Table 4. Relationship on effects of technology integration to Grade 11 & Grade 12 considering average time and preference on use of mobile devices

Variables	Pearson r	Sig. Values	Probability
length of study time daily			
Teachers Abilities and Skills	.189**	.189**	ns
Teaching Methods	.143**	.000	s
Student Engagement	.213**	.000	s
School support/facilities	.216**	.000	s
Negative Effects	.136**	.007	s
Average time of Mobile phone/laptop			

/computer Use per Day			
Teachers Abilities and Skills	.113*	.024	s
Teaching Methods	.156**	.002	s
Student Engagement	.116*	.020	s
School support/facilities	.130**	.009	s
Negative Effects	.192**	.000	s
Average time of Mobile Phone/laptop computer Use per Day for chatting and texting			
Teachers Abilities and Skills	.043	.390	ns
Teaching Methods	.102*	.040	s
Student Engagement	.059	.237	ns
School support/facilities	.094	.059	ns
Negative Effects	.057	.256	ns
Average time of Mobile Phone/laptop/ computer Use per Day of the internet related to class instruction			
Teachers Abilities and Skills	.000	.996	ns
Teaching Methods	.032	.518	ns
Student Engagement	.047	.344	ns
School support/facilities	.002	.973	ns
Negative Effects	-.008	.876	ns
Preference to chat/talk with friends on mobile phones/laptop/computer than face to face if given the chance			
Teachers Abilities and Skills	.032	.523	ns
Teaching Methods	.114*	.022	s
Student Engagement	.209**	.000	s
School support/facilities	.180**	.000	s
Negative Effects	-.002	.963	ns
Preference to chat/talk with teachers on mobile phones/laptop/computer than face to face if given the chance			
Teachers Abilities and Skills	.186**	.000	s
Teaching Methods	.149**	.003	s
Student Engagement	.084	.094	ns
School support/facilities	.158**	.002	s
Negative Effects	.061	.226	ns

Findings showed variables that established significant relationship; there four out of five variables as to length of study time daily; all factors for Average time of Mobile phone/laptop/computer Use per Day: one(1) for Average time of Mobile Phone/laptop/computer Use per Day for chatting and texting which was Teaching Methods; three (3) for Preference to chat/talk with friends on mobile phones/laptop/computer than face to face if given the chance that is teaching methods, student engagement and school; three (3) for Preference to chat/talk with teachers on mobile phones/laptop/computer than face to face if given the chance which were teachers abilities and skills, teaching methods and school support/facilities and average time of mobile phone/laptop/computer use per day of the internet related to class instruction. These variables have p-values lower than .05 level of significance. The hypothesis for these variables were rejected. Data illustrated the connections between the variables signifying the increase in one variables would mean an increase also in other factors. However, some factors failed to bridge connections with other factors. It showed the relation was weak and credited as insignificant. The results were reinforced by studies of Hero (2019) the emergence of technology integration provides new opportunities for teaching, and learning, Costley (2014) technology-enhanced experiences that strengthen curriculum and enhance teaching performance and Llomäki & Lakkala (2019) technology integration succeed by giving positive response in the field of education particularly in innovating the present education. The studies specifically illustrated how technology helped students academically succeed.

Relationship on effects of technology integration to Grade 11 & Grade 12 considering teacher competence and school factors

The relationship on effects of technology integration to grade 11 & grade 12 considering teacher competence and school factors is presented in Table 5. The hypothesis that there is no significant relationship on the level of effects of technology integration to Grade 11 and Grade 12 and teacher competence and school factors such as teachers abilities and skills, teaching methods, student engagement, school support/facilities and negative effects when correlated with each other displayed p-values lower than .05 level of significance hence the hypothesis was rejected. The variables were dependent on each other. In the study of Dogan, Dogan & Celik (2021) it was claimed that perceived skills or technology competencies of teachers contributed to increase the instructional or application software use of teachers. When teachers have the confidence and ease in using the technology, it positively affects the instructional and application of software by teachers. As previously stated Ritzhaupt et al. (2012) reform efforts, and policy changes were made to cater and equip K-12 schools with technology that enables all students to be successful. Similar consideration was made by Mueller et al., (2008) that the increasing interest in technology and its use over the two decades was understandable since the teachers were the once in contact with the students thereby technology use in K-12 settings was of utmost importance. These results supported the results of the study since some teacher's variables were connected to the effects of technology integration in Grade 11 and Grade 12.

Table 5. Relationship on effects of technology integration to Grade 11 & Grade 12 considering teacher competence and school factors

Variables	t/F	Sig. (2tailed)	Probability
Teachers Abilities and Skills			
Teaching Methods	.900	.000	s
Student Engagement	.781	.000	s
School support/facilities	.843	.000	s
Negative Effects	.459	.000	s
Teaching Methods			
Student Engagement	.854**	.000	s
School support/facilities	.862**	.000	s
Negative Effects	.414**	.000	s
Student Engagement			
School support/facilities	.778**	.000	s
Negative Effects	.298**	.000	s
School support/facilities & Negative Effects	.468**	.000	s

5. Conclusions

In general, the respondents utilized technology communication to reach out their classmates, teachers and friends. Thus regular use of gadgets for class related activities were practiced though variation in the length of time use was prevalent and two hours would not necessarily affect their health. The effects of technology integration in terms of teachers' abilities and skills comprised improved technical and design skills, clear presentation of information for knowledge retention, maximized use of external resources for increased motivation, self-esteem, expedite accomplishment of tasks, better teaching outcomes for higher productivity and quality of work. The use of technology sharpened practical and mechanical skills of teachers for better ways of explaining and providing detailed discussion coupled with examples which improve retention and memory of the respondents.

The effects of technology integration in terms of student engagement was evident in the teachers' effort for students to produce quality work using materials in group tasks and for class instruction. Technology integration facilitated students' attain higher learning through access to numerous resources which are difficult to secure. Technology integration therefore was instrumental in quality work of instructors and for students to accomplish more than other teaching instrument or devices. The effects of technology integration in terms of school support and facilities was high. Technology were instrumental in keeping students safe

being preoccupied with the gadgets at home in accomplishing their performance tasks, conduct of in-service technology trainings with less challenges and difficulty; and make schools become technologically competitive. The negative effects of technology integration included tendency of students to cheat may be hazardous to health or related to medical problem which may lead to complicated ones, cause students to use unreliable resources for learning, make curriculum planning more difficult and expensive, disconnect students from face to face relationship and distract the students and limited to word processing or basic research.

There was significant difference between the level of effects of technology integration to Grade 11 & Grade 12 High School and profile variables as year level, sex, age and home location. The variables independently exhibited variation from one variable to the other. The difference between the effects of technology integration to Grade 11 & Grade 12 and teachers' abilities and skills were as to teaching methods, student's engagement, school support facilities, negative effects and the average time of use per day, when used for chatting and texting, used for related class instruction, preference to chat/talk with friends than face to face if given the chance and preference to chat/talk with teachers than face to face if given the chance and average time and preference to use mobile devices.

There was significant relationship on the effects of technology integration to grade 11 & grade 12 and five variables, age and negative effects, monthly family income and teaching methods, student engagement and negative effects of technology integration. Home location and student engagement were also significantly related. The variables have indicated relevant interconnectedness with one another. Research disclosed relationship on technology integration as to length of study time daily and teaching methods, student engagement, school support/facilities and negative effects. Significant relationship existed as to average time of mobile phone/laptop/computer use per day and teachers' abilities and skills, teaching methods, student engagement, school support/facilities, negative effects.

Moreover, average time of mobile phone/laptop computer use per day for chatting and texting correlated with teaching methods and preference to chat/talk with friends on mobile phones/laptop/computer than face to face if given the chance has connection to teaching methods, student engagement and school support/facilities.

The preference to chat/talk with teachers on mobile phones/laptop/computer than face to face if given the chance has influenced teachers' abilities and skills, teaching methods and school support/facilities.

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