

PERCEIVED EFFECTS OF INSTRUCTIONAL TECHNOLOGY ON STUDENTS' MOTIVATION AND ENGAGEMENT IN CLASSROOM-BASED LEARNING

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Abstract

This study was conducted to determine the perceived effects of instructional technology on students' motivation and engagement in classroom-based learning. The descriptive method of research was used and the survey questionnaire was utilized for gathering the data. The respondents were 76 Social Studies students of the College of Teacher Education of CSU-Piat. The results revealed that Social Studies students have strongly agreed and motivated on the use of instructional technology in their learning process. The respondents have strongly agreed in the use of updated materials and other instructional materials during the face-to-face learning. To test the difference between the profile variables and the perceived effects of instructional technology, the Analysis of Variance (ANOVA) was used. The data revealed that the respondents significantly vary in their perception on the effects of instructional technology when grouped according to the grouping schemes. However, when they are grouped according to age and socio-economic status with a computed F-value of 26 and 12.5 respectively, a significant difference exists. Furthermore, the respondents vary in terms of their perceptions on the effects of instructional technology when they are grouped according to age and socio-economic status. The respondents encountered some problems related to instructional technology in their classroom-based learning like poor working condition of computer, lack of internet connectivity, no available software instructional tools. Respondents recommended improvements in instructional technology such as the students should equipped with computer skills, improve working conditions, conduct hands-on activities, upgrade software tools used in teaching, upgrade internet connectivity to improve student engagement and motivation. Based on the results of the study, the respondents have strong motivation and engagement in the teaching and learning process.

Keywords: Instructional technology, motivation, engagement, classroom-based learning, social studies students

INTRODUCTION

The rising use of instructional technology in the classroom today shows how important it is to teach 21st-century learners, who actively participated in class discussions and acquired information. It is anticipated that the usage of instructional technology and technologically enhanced learning settings would contribute to raising student motivation and engagement levels.

Integration of instructional technology has been more crucial over the past few decades in fostering student and instructor motivation and engagement. Since teachers utilize computers and TVs to motivate

students to acquire and comprehend knowledge, its position in the classroom has long been established. Such advancements have become crucial in assisting students in becoming active members of the global community (Duke et al., 2013).

Technical applications may be used to offer the learning process intrinsic value, which will boost interest and motivation (Usher and Center on Education, 2012). These classrooms must also be equipped to accommodate all of the kids' demands. According to Heafner (2004), Liu (2006), and Housand & Housand (2012), effective use of instructional

technology may enhance the conventional classroom by energizing students in all subject areas, including math, social studies, and reading.

Constructivist teaching and learning techniques can be facilitated by students' effective use of instructional technology. According to Jean Piaget's constructivism theory, a kid is better able to integrate his or her experiences into daily life when they actively interact with activities and make more active connections (Piaget, 1995). Students can acquire global competence, literacy, and technological trend awareness and concerns into real-world classroom as instructional technology becomes more integrated in classroom-based learning.

There are several reasons why using instructional technology in the classroom may inspire kids more. In the classrooms of elementary schools, Liu (2016) conducted a research. 31 teachers were monitored for eight weeks throughout this investigation. The teachers were questioned about their decision to include instructional technology into their class at the conclusion of the research. Different replies varied from 14.8% saying it satisfied the learners' specific needs (difference and inclusion) to 17% saying it assisted with routines and behavior control. The majority of respondents (31.1%) claimed that it improved student motivation and engagement as well as the ability of teachers to relate literature in ways that were more enjoyable and engaging for pupils.

In connection to the study, the College of Teacher Education - Piat Campus is currently using instructional technologies like computers, laptops, printers, devices, and projectors for information and communication technology for teaching new concepts effectively methodologies, and strategies among learners. As such, it is beneficial for them to have met motivation and engagement in teaching and learning. That is why the researchers conducted this study to determine the perceived effects of instructional technology on students' motivation and engagement in classroom-based learning.

LITERATURE REVIEW

The Concept of Instructional Technology

Projectors, smartboards, smart tables, computers, tablets, phones, digital textbooks, cameras, and audio

upgrades are just a few of the digital tools used in instructional technology, which is used to assist and improve students' learning in the classroom. Additionally, to provide motivational and pedagogically sound learning experiences utilizing the available technology tools.

Integration of Instructional Technology in Teaching and Learning

As a vital tool for facilitating communication between professors and students in a global setting, instructional technology is now frequently employed. Modern teaching techniques must be used with pupils of the twenty-first century as a result of this transition. Therefore, in order to deliver more effective and up-to-date guidance, educators must master the integration of knowledge, skills, and technology (Mishra et al., 2010; Schwab, 2015). The use of instructional technology into academic courses can also aid students in improving their problem-solving abilities and preparing them to compete in the global marketplace (Hicks & Turner, 2013). Student use of technology for information acquisition, demonstration, application, and communication is intended to be ethical and safe. Teachers must be able to utilize technology, knowledge from a range of sources, and built creative works in a safe, ethical, and responsible manner.

Both Bruce and Levin (2001) and Gilakjani (2013) asserted that the use of instructional technology may benefit students' individual expression, communication, and the production of educational materials. Schools use a range of instructional tools to organize, develop, distribute, and share knowledge. The influence of instructional technology on education has been studied by researchers from a wide range of fields, and they have all reached the same conclusion: technology helps teachers improve their methods of instruction and learners increase their knowledge.

Less than half of children used the instructional technology in their homes for schoolwork, according to Ehrlich, et al. (2013) and the Consortium on Chicago Schools (2013). Pedagogy needs to adapt to the times. Students may get demotivated and lose interest when teachers continue to teach subjects and abilities that they may believe are irrelevant or unusable in the real

world (Usher & Center on Education, 2012). This is because the intrinsic worth of what was learnt is diminished. Teachers will be able to inspire and incorporate pupils from learning handicapped to bright and talented by using technology into the classroom.

Instructional Technology as it is used for Motivation

Additionally, it is critical that these classrooms meet the needs of all kids. The requirement for different learning styles is supported by instructional technology, which also helps to foster a feeling of community and a fulfilling experience (Futurelab, 2009). Similar to how it may benefit the traditional education classroom, using instructional technology effectively can inspire students in all subject areas, including math, social studies, and reading (Heafner, 2004; Liu, 2016; Housand & Housand, 2012).

Moreover, according to both students and teachers, the employment of instructional technology in the classroom increases academic attainment (Courville, 2011). Real-world uses of instructional technology and other academic courses assist encourage pupils, according to a research by Usher & Center on Education (2012). They discovered that when technology-based inquiry-learning is connected to actual events, students start to see the intrinsic worth of what they are learning, which heightens their interest and drive. Additionally, by putting abstract concepts into practice, students may better comprehend complicated ideas, which will boost their competency. Teachers may use this instructional technology to diversify education, inspire students, and incorporate students of all ability levels by integrating it into the classroom.

It's also critical to remember that constructivism actively promotes the idea of differentiation or active assistance that enables learners at all proficiency levels to take part completely. A teacher who uses these strategies will also design a curriculum that, from resources to pace, best meets the requirements of the students (Gensburg & Herman, 2009). In light of this, teachers prepare differentiated learning activities that let each student approach a set of learning objectives in their own way and at their own pace. Students are then able to build knowledge and provide meaning to the material being delivered because to

differentiation. Teachers may use technology to diversify instruction and adapt learning settings by using a technology-centered curriculum. When utilized properly, technology promotes constructivism in learning and provides different avenues for students with or without documented learning disabilities to learn.

Importance of Instructional Technology on Student Motivation and Engagement

In a Social Studies classroom, Heafner (2004) investigated how instructional technology affected students' motivation. The pupils, who were in grades 9 and 10, were studying international politics, economics, and legal systems. Students in this subject had to create a PowerPoint slide as part of their assignment. Although normal classroom and hallway conduct was observed, it was seen that pupils' behavior changed noticeably after they entered the computer lab. Students started to demonstrate pride in their work and became more enthusiastic about studying. All of the students said they enjoyed the task and felt more motivated as a result.

Godzicki et al.'s (2013) investigation on the topic of student motivation in elementary and middle schools. They developed a learning environment backed by instructional technology and focused on some problematic behaviors. These habits included not finishing their assignments, being unprepared for class, and dozing off or resting their heads on their desks. The researchers discovered that merely because technology is being utilized, kids are more inclined to participate in an activity. However, just 80% of the instructors in the poll utilized technology for 80 minutes or less each day. Students said that teachers presented them with activities that were relevant to them after a technology intervention was implemented, and motivation and engagement increased for all students by 9% (Godzicki, et al. 2013). The ability of technology to engage students in relevant learning, in that it raises student motivation and engagement, is one of the main results in the adoption of instructional technology (Godzicki et al. 2013). According to several research, kids who have access to instructional technology are more motivated to study. Halat's (2013) study on the usage of

WebQuests supports this. Students are more likely to develop their comprehension of complicated concepts when they are actively participating in their learning as actors (Futurelab, 2009).

Incorporating Instructional Technology into Pre-Service Teachers

In training new teachers to incorporate instructional technology in their teaching practice, teacher education programs were also seen as the primary catalyst. Teacher education programs played a major role in developing the self-efficacy and identity of the candidates (Pendergast et al., 2011). As a result, teacher educators' position in improving the instructional technology self-efficacy of pre-service teachers was impacting the future instructional technology integration in classrooms. Nevertheless, the nuanced information required to incorporate instructional technology successfully was proving a major challenge for both teacher education systems and content-related training courses for teachers.

The National Research Council (2005, 2010) acknowledged a need to tackle the convergence of instructional technology in both materials (e.g. undergraduate courses in Social Science and Mathematics) and instructional courses in pedagogy. Educational researchers also studied the effectiveness of different course systems and stressed the strategies and abilities of pre-service teachers to incorporate instructional technology into their teaching (Brupbacher & Wilson, 2009; Cavin, 2008; Chai, Hwee, L. Koh, & Tsai, 2010; Kramarski & Michalsky, 2009; Jang & Chen, 2010). Educational scholars had started studying the efficacy of various course models and stressing the strategies and abilities of pre-service teachers to incorporate technology into their teaching (Brupbacher & Wilson, 2009; Cavin, 2008; Chai, Hwee, L. Koh, & Tsai, 2010; Jang & Chen, 2010; Kramarski & Michalsky, 2009). However, due to the complexity of the skills required to effectively incorporate instructional technology in classroom teaching as well as the interconnected nature of this information, it was necessary to understand how the expertise of teacher candidates for technology integration evolved through the course

interactions throughout the teacher preparation programs.

Jimoyiannis (2008) argued that teachers' perceptions of instructional technology use in education were mostly technology-based; that was, they were mostly related to how to use technological tools. Effective integration of instructional technology is achieved when teachers can select and utilize appropriate technology tools to help them deliver the content effectively.

SYNTHESIS

From the studies mentioned above, it can be concluded that instructional technology is useful for learning and teaching process. From these published articles or studies being gathered, the researchers can determine the perceived effects of instructional technology on students' motivation and engagement in classroom-based learning by integrating instructional technology in teaching among pre-service teachers.

METHODOLOGY

This study used the descriptive method of research. Descriptive research is a type of research design that aimed to obtain information to systematically describe a phenomenon, situation, or population employing a survey as a data collection tool. In this study, the researchers would like to determine the perceived effects of instructional technology on students' motivation and engagement in classroom-based learning. This study was conducted at Cagayan State University-Piat Campus particularly at the College of Teacher Education at Baung, Piat, Cagayan. The respondents of the study were the 1st year to 4th year Bachelor of Secondary Education students majoring in Social Studies from the College of Teacher Education. The researchers employed total enumeration in selecting the respondents. The researchers used a survey questionnaire as the main tool in gathering the needed data. The research instrument used was a questionnaire by Siddiquah & Salim (2017) from their study titled *"The ICT Facilities, Effects, Skills and Usage of Instructional Technology: A Case Study in Higher Education"*. The questionnaire was modified and

adopted to suit the problem of the study. The questionnaire has three sections namely; the demographic profiles of the respondents. Secondly, a questionnaire on the perceived effects of instructional technology on students' motivation and engagement, and lastly, the problems encountered by Social Studies students on using the instructional technologies.

FINDINGS / RESULTS

Demographic Profiles of the Respondents

1.1 Age

Table 1 shows the frequency and percentage distribution of 76 respondents according to their age. Findings revealed that the majority of the respondents (56.58%) are within the bracket of 17-20 years old. While (42.11%) of the respondents are within the bracket of 21-24 years old and (1.31%) of the respondents are within the bracket of 25-28 years old. The findings show that majority (56.58%) of the respondents are within the bracket of 17-20 years old, and some of the respondents are within the bracket of 25-28 years old.

Table 1
 Frequency and Percentage Distribution of the Social Studies Major students According to their Age

Age	Frequency	Percentage (%)
17-20	43	56.58
21-24	32	42.11
25-28	1	1.31
Total	76	100

1.2. Gender

Table 2 segregates the respondents according to their gender. It shows that 19 or (25%) of the respondents are male and 57 or (75%) of the respondents are female. These findings mean that there are more female than male respondents.

The authors conducted a study on technology adoption at a large Canadian university. One of its purposes was to inform how gender matters in the process of technology adoption in post-secondary teaching. Results suggest that females were more likely to use student-centered pedagogical approaches in teaching than males. The male had lower confidence and less experience in the use of computers in teaching. They tended to learn how to use technology from others, whereas females were more likely to learn from their own experiences. Based on these findings, the paper recommends that professional development for males should involve more showcases and interactions while training for females would be more appropriate when it provides many hands-on activities. The data imply that pre-teaching is a preferred profession by the female group.

The research findings of Drudy (2008) and Ullah (2016) it shows that there is female dominance in the pre-teaching profession within the tertiary levels.

Table 2
 Frequency and Percentage Distribution of the Social Studies Major students According to their Sex

Gender	Frequency	Percentage (%)
Male	19	25.00
Female	57	75.00
Total	76	100.00

1.3 Socio-Economic Status

Table 3 illustrates the frequency and percentage distribution of the socio-economic status of the respondents.

It revealed that majority (76.32%) of the respondents have parent's monthly income of 1,000.00 to 5,000.00, followed by (14.47%) ranging from 6,000.00 to 10,000.00; then (6.58%) ranging from 16,000 to 20,000.00; and finally, only (2.63%) ranging from 11,000.00 to 15,000.00. It indicates that the majority of the respondents' socio-economic status has low monthly income. This implies that parents' monthly income limits both the educational attainment and academic performance of students. A significant number of studies found that students from low-

income families perform poor than those from a relatively richer family.

However, the study of Adzido et al. (2006) concludes that low family income improves students' performance, but for the responsible student, low-income must not be an excuse for poor performance.

Table 3
 Frequency and Percentage Distribution of the Social Studies Major students According to their Socio-Economic Status

Monthly Income	Frequency	Percentage (%)
1,000.00-5,000.00	38	76.32
6,000.00-10,000.00	11	14.47
11,000.00-15,000.00	2	2.63
16,000.00-20,000.00	5	6.58
Total	76	100.00

1.4 Year level

Table 4 presents the frequency and percentage distribution of the year level of the respondents. It can be gleaned from table 4 the majority of the respondents are in the second-year with a frequency of 26 or 34.21%. It is followed by a frequency of 17 or (22.37%) of the respondents both 3rd year and 4th year. Lastly, the first year students have the lowest number of respondents with a frequency of 16 or (21.05%).

Table 4.
 Frequency and Percentage Distribution of the Social Studies Major students According to their Year Level

Year Level	Frequency	Percentage (%)
1st Year	16	21.05
2nd Year	26	34.21
3rd Year	17	22.37
4th Year	17	22.37
Total	76	100.00

2. Effects of Instructional Technology on Student Motivation and Engagement

2.1. Motivation

Table 5 shows the perceived effects of the respondents on the use of instructional technology on students' motivation.

Results showed that the social studies major students strongly agreed with "students' motivation" with an overall weighted mean of 3.35. Results further showed that Social Studies major students are uses of "Instructional technology like digital projectors which can be used to display PowerPoint presentations, video clips or movies" It received the highest mean of 3.51 (Strongly Agree), while their lowest was 3.09 (Agree) "podcasts can be used as powerful instructional technology to supplement other instructional materials such as textbooks or lectures" but the respondents are not familiar on the technological use of podcast during their academic engagement. The use of podcasts is to entertain students on updated current issues and events and to use for informative conversations between the learners and the teacher during the learning process during classroom-based learning (Gwebpro.com, 2019).

Table 5.
 Perceived Effects of Instructional Technology on Students in Terms of Motivation

Indicators	Weighted Mean	Descriptive Value
1. Instructional technology like digital projectors can be used to display PowerPoint presentations, video clips or movies.	3.51	Strongly Agree
2. Students can become globally competent, literate, and technically aware of trends and concerns in the real-world classroom as	3.39	Strongly Agree

instructional technology becomes more integrated.		
3. Instructional technology like smartboards can be used to create interactive activities and games.	3.32	Strongly Agree
4. Audio and video conferencing as an example of instructional technology will be used to facilitate discussion and collaboration among students who are working on group projects.	3.41	Strongly Agree
5. Podcasts can be used as powerful instructional technology to supplement other instructional materials such as textbooks or lectures.	3.09	Agree
6. Effective integration of instructional technology is achieved when teachers can select and utilize appropriate technology tools.	3.36	Strongly Agree
7. Instructional technology	3.49	Strongly Agree

integration can boost self-motivation and can be applied to acquire, demonstrate, apply, and communicate information.		
8. PowerPoint presentation as instructional tool will make lessons more enjoyable, clear, and comprehensible for students.	3.34	Strongly Agree
9. The use of instructional technology helps students to find related knowledge and information for learning.	3.38	Strongly Agree
10. Through the presented instructional technologies in the classroom, learners are equipped with computer skills.	3.24	Agree
Overall Weighted Mean	3.35	Strongly Agree

2.1. Engagement

Table 6 shows the perceived effects of the respondents on the use of instructional technology on student engagement.

Results showed that the Social Studies major students strongly agreed with “students’ engagement” with an overall weighted mean of 3.38. Results further showed that Social Studies major students are “using instructional technology which help learners to improve teaching skills with more updated materials”

received the highest mean of 3.50 (*Strongly Agree*) while their lowest mean 3.25 (*Strongly Agree*) is "classroom engagement is achieved when instructional technology is used in teaching" The finding suggests that the respondents used and integrated instructional technology in the teaching-learning process. The respondents believed that instructional technology improved the perceptions of the students towards student engagement during classroom-based learning (Unal, 2013).

Table 6
 Perceived Effects of Instructional Technology on Students In Terms Of Engagement

Indicators	Weighted Mean	Descriptive Value
1. Classroom engagement is achieved when instructional technology is used in teaching.	3.25	Strongly Agree
2. The students make creative works for their lesson if they have learned the proper integration of instructional technologies.	3.49	Strongly Agree
3. Using instructional technology in the classroom like digital storytelling can be used to engage learners in active reflection.	3.32	Strongly Agree
4. Mobile devices can be used to deliver	3.43	Strongly Agree

content such as lectures or readings.		
5. Instructional technology like gamification can be used to teach new information and skills to learners.	3.26	Strongly Agree
6. The use of instructional technology enables the students to be more active and engaging in any demonstration task.	3.38	Strongly Agree
7. The use of instructional technology boosts students' whole confidence in learning new computer skills.	3.36	Strongly Agree
8. Students are aware of the great opportunities that instructional technology offers for effective teaching.	3.38	Strongly Agree
9. The use of instructional technology helps	3.50	Strongly Agree

learners to improve their teaching skills with more updated materials.		
10. Instructional technology provides opportunities for students to work collaboratively with teachers, discussing ideas or asking questions inside of the physical classroom.	3.45	Strongly Agree
Overall Weighted Mean	3.38	Strongly Agree

2. Problems Encountered by Students on the use of Instructional technology

Table 7 illustrates the frequency and rank distribution of the problems encountered by the respondents on the use of instructional technology. As seen in table 7, the top 3 most problems encountered by the students are as follows:

1. *Poor working conditions of computers.* The most common problem is the poor working condition of the computer and laptops of the respondents during the learning process. Most of the 71 respondents have poor conditions on their personal computers and laptops during their motivation and engagement process with the use of instructional technology in their teaching and learning processes.

2. *Lack of internet connectivity.* One of the respondents experienced lack of internet connectivity because of the topographical location of the school. Students cannot access information, download lectures, or online submission of requirements, and

students become passive to do their instructional tasks and other academic activities due to a lack of internet connectivity (Liquigan, 2022).

3. *No available software instructional tools.* Most of the respondents have no available software instructional tools used in their learning process, they lack technological resources in their classrooms and fail to understand and learn the lesson effectively (Liquigan, 2022).

Table 7
 Respondents' Problems Encountered on Instructional Technology

Problems Encountered	Frequency	Rank
1. Poor working conditions of computers	71	1
2. Lack of internet connectivity	66	2
3. No available software instructional tools	57	3
4. Lack of technical support	49	4
5. Presence of virus threat	38	7
6. Slow speed of computers	38	7
7. Load shedding	46	5
8. Confusion in selecting instructional technology software for the students regarding their level of knowledge	46	5
9. Lack of supervision of time or over usage	42	6

2. Analysis of Variance in Perception of the Respondents on the Effects of Instructional Technology when Grouped According to Profile Variables

Table 8 presents the ANOVA result of the comparative analysis of the respondent's perception of the effects

of instructional technology as categorized according to their profile variables. The computed F-value of gender (-2.25) and year level (0.7) which is higher than the 0.05 level of significance suggests that the null hypothesis is accepted. This result means that the respondents significantly vary in their perception of the effects of instructional technology when grouped according to the grouping schemes. However, when they are grouped according to age and socio-economic status with a computed F-value of 26 and 12.5 respectively, a significant difference exists. Furthermore, the respondents vary in terms of their perceptions of the effects of instructional technology when they are grouped according to age and socio-economic status.

Table 8
 Comparative Analysis of the Respondents' Perception of the Effects of Instructional Technology as Categorized According to their Profile Variables

Profile	Computed F-value	Critical value at 0.05	Remarks
Age	26	± 5.79	Significant
Gender	-2.25	± 10.83	not significant
Socio-economic status	12.5	± 4.35	Significant
Year Level	0.7	± 4.35	not significant

DISCUSSION/ANALYSIS

This study aimed to determine the perceived effects of instructional technology on students' variables are assumed to affect the dependent variables. Motivation and engagement in classroom-based learning among

first-year to fourth-year students of the College of Teacher Education Social Studies majors. It also included profiling of the respondents to fully understand the difference in the perception of the students on the effects of instructional technology when grouped according to their profile variables and problems encountered by students on the use of instructional technology.

SUMMARY OF FINDINGS

This study was conducted to determine the perceived effects of instructional technology on student motivation and engagement in classroom-based learning. The descriptive method of research was used and the survey questionnaire was utilized for gathering the data. The respondents of the study were the 76 social studies major students of the College of Teacher Education of CSU-Piat. The study was conducted during the first semester of the academic year 2022-2023.

In terms of age, majority of the respondents belonged to the age range of 17-20 years old. In gender scheme, majority of the respondents were female students. The study also discovered that majority of the respondents have a low-income salary of 1,000.00-5,000.00 based on their socio-economic status. Most of the respondents of the study were the 2nd year Social Studies major students. In addition, the majority of respondents were satisfied with the use of instructional technology which regard to motivation and engagement and were rated as "strongly agree".

Using the Analysis of Variance (ANOVA) test, the result of the comparative analysis on the respondents' perception of the effects of instructional technology was categorized according to their profile variables. The following probabilities of -2.25 and 0.7 which are higher than the 0.05 level of significance suggest that the null hypothesis is accepted. This result means that the respondents significantly vary in their perception of the effects of instructional technology when they are grouped according to the grouping schemes. However, when they are grouped according to age and socio-economic status with a probability of 26 and 12.5, a significant difference exists.

Furthermore, the respondents vary in terms of their perceptions of the effects of instructional technology when they are grouped according to age and socio-economic status.

The findings further revealed that there is no significant difference in the perception of the students on the effects of instructional technology when grouped according to their profile variables.

CONCLUSIONS

It is concluded based on the findings, that the perceived effects of the use of instructional technology affect students' perception of motivation and engagement.

Moreover, the respondents of the study have strong motivation, engagement, and have high-quality efforts during classroom-based learning.

In addition, student motivation and engagement have strong relationships in the process of learning most especially in the use of instructional media, technological tools, and video clips are helpful and informative in the learning process.

RECOMMENDATIONS

Based on the findings and conclusions, the researchers recommended the following:

1. The students should be equipped more with computer skills so that they know how to use different technological support materials during the teaching and learning process.
2. The school should improve the working conditions of the computers in the laboratory during the lecture and hands-on activities.
3. The administration should also improve the internet connectivity of the campus to have better access to information, submission of activities and other projects and subject requirements.
4. Use other technological applications to improve and support an alternative way to make the learning process more effective and meaningful and technology also improve student engagement.

LIMITATION AND STUDY FORWARD

This study aimed to determine the perceived effects of instructional technology on students' variables related to motivation and engagement in classroom-based learning among first-year to fourth-year students of the College of Teacher Education Social Studies majors.

REFERENCES

- Bolkan, J. (2012, September 13). Report: Schools not Meeting Students' Technology Needs. *The Journal*.
- Baker, W. M., Lusk, E. J., & Neuhauser, K. L. (2012). On the Use of Cell Phones and other Electronic Devices in the classroom: Evidence from a Survey of Faculty and students. *Journal of Education for Business*, 87, 275-289. doi:10.1080/08832323.2011.622814
- Egbert, J. (2009). *Supporting Learning with Technology: Essentials of Classroom practice*. Upper Saddle River, NJ: Prentice Hall.
- Futurelab. (2009). *Using Digital Technologies to Promote Inclusive Practices in education*.
- Grismore, B. A. (2012). *Mini Technology Manual for Schools: An Introduction to Instructional Technology integration*. ERIC database. (ED533378)
- Godzicki, L., Godzicki, N., Krofel, M., & Michaels, R. (2013). *Increasing Motivation and Engagement in Elementary and Middle School Students through Technology-supported Learning Environments (Master's research project, Saint Xavier University)*. ERIC database. (ED541343)
- Gray, L., Thomas, N., and Lewis, L. (2010). *Teachers' Use of Instructional Technology in U.S. public schools: 2009 (NCES Publication No. 2010-040)*.
- Goodin, L. M. (2012). *Incorporating Instructional Technology into the Instruction of Social Studies (Master's research project, Saint Xavier University)*. ERIC database. (ED531350)
- Gensburg, R., & Herman, B. (2009). *An Analysis of the*

- Theory of Constructivism as it Relates to Pre-service and In-service Teachers and Technology.
- Ghavifekr, S. & Rosdy, W.A.W (2015). Teaching and Learning with Instructional technology: Effectiveness of ICT Integration in Schools. *International Journal of Research in Education and Science (IJRES)*, 1(2), 175-191.
- Housand, B. C., & Housand, A. M. (2012). The Role of Technology in Gifted Students' Motivation. *Psychology in the Schools*, 49, 706-715. doi:10.1002/pits.21629
- Kubota, K. (2016). Promoting ICT Education in Developing Countries: Case Study in the Philippines
- Liquigan, M.L. B., (2022, In-Service Teachers' Extent Of Exposure And Level Of Skills On The Use Of Technology: An Exploratory Study. Retrieved from <http://journalppw.com>. *Journal of Positive School Psychology*, 2022, Vol. 6, No. 3, 3253-3263.
- Liquigan, M.L. B., (2022, Probing The Level Of Knowledge Of In-Service Teachers On Technology Integration In Teaching, *International Journal of Early Childhood Special Education*) 2022, Vol. 14 Issue 3, p4252-4261. 10p.) Retrieved from <https://web.p.ebscohost.com/>
- Website:
- <http://thejournal.com>
- http://www.creativetallis.com/uploads/2/2/8/7/2287089/digital_inclusion3.pdf
- <https://nces.ed.gov/pubs2010/2010040.pdf>
- <https://sites.google.com/a/boisestate.edu/edtechtheories/an-analysis-of-the-theory-of-constructivism-as-it-relates-to-pre-service-and-in-service-teachers-and-technology-1>
- <https://www.researchgate.net/publication/228655099>