



EDUCATIONAL MEDIA UTILIZATION OF TEACHERS AND LEARNING ENGAGEMENT OF STUDENTS IN EMPOWERMENT TECHNOLOGIES

¹Girly B. Barcelon, ²Anna Loretta C. Romulo

¹Student Researcher, ²Acting Dean, College of Computer Science

¹Department of Graduate Studies,

¹Naga College Foundation, Inc. Naga City, Philippines

Abstract : The study determined the influence of educational media utilization by teachers on the learning engagement of senior high school students in Empowerment Technologies at Anib National High School, Sipocot North District, Division of Camarines Sur during the SY 2023-2024 was determined using the descriptive-correlational method. There were 5 ICT teachers and 200 students as respondents in this study. Survey questionnaires were used for data gathering. The data obtained were statistically treated using weighted mean, Pearson Product-Moment Correlation of Coefficient and Coefficient Determination. The study revealed that the teachers were very high in educational media utilization, particularly in psychomotor, affective, and cognitive aspects. The students were high in learning engagement, particularly in knowledge development, social interaction, and motivation. The teachers have a high correlation with student's engagement. This means that there is an influence between educational media and learning engagement. Furthermore, students should demonstrate more enthusiasm and effort in the subject, and teachers should hone an ICT tool and devise an intervention that matches the students' level.

IndexTerms – Educational Media Utilization, Learning Engagement, Empowerment Technologies

I. INTRODUCTION

The technology in this contemporary society is being used more and more popularly, especially for the purpose of teaching and learning. Information and communications technologies (ICTs) are essentially contributing to the enhancement and effectiveness of the quality education provided, which has always been at the center of social change as it influences, directs, and naturally delivers knowledge. One of the global challenges in 21st century learning is the impact of media, and students must be information and media literate. Educational media are the teaching aids, which are very helpful in giving input and delivering lessons during class discussion. The millennials are engrossed in audio-visual forms of technology and are more dominated by smartphones, tablets, computers, and more. In terms of learning engagement, students today expect and indeed thrive when interacting with technology and eventually learn more. They are given more opportunities to interact, collaborate with peers, and engage in the learning process.

There is no question that students are more dependent on technology in today's society than ever before. Technology is everywhere, entwined in almost every aspect of life. Educational media influence learning engagement by fostering student knowledge development, social interaction, and motivation. Using educational media, the way of teaching is more effective and efficient than with the use of traditional resources. Educators are no longer limited to the textbooks that their institutions provide. They can find creative ways to teach the students in an engaging way by enhancing learning with the aid of educational media related to the lesson, like interactive games, video tutorials, audiovisual presentations, and other ICT interventions. By providing students with tools, platforms, or resources that are trending or familiar to them, they are more likely to be interested and motivated to learn.

In the Philippine setting, the implementation of education's educational goals in line with the educational media is to enhance the teaching and learning experience where students can learn about the trends in educational technology. The integration of media is not just limited to the application of ICT in the classroom but also within the curriculum. In DepEd Memorandum No.008, s. 2023, "Multiyear Guidelines on the Results-Based Performance Management System—Philippine Professional Standard for Teachers." It was in the RPMS Classroom Observation Tool (COT) under KRA 3, which is Curriculum Planning, that objective 9: Teachers must select, develop, organize, and use appropriate teaching and learning resources, including ICT, to address learning goals (PPST4.5.2). Also, the Department of Education formulated a policy on the integration of technologies in schools. DepEd Order No. 78 s. 2010 states that: the Department of Education is geared towards the transformation of education through DepEd Computerization Program (DCP) to improve the quality of education by providing public schools with appropriate technologies that meet the challenges of the 21st century".

Teachers need to create or develop a medium that can attract learners' attention, and considering their lives are surrounded by technology, they should develop a medium integrated with technology (Rabu & Thalib, as cited in Budasi et al., 2020). Media are very essential to good teaching, and to get the most from them, they must be selected properly and used effectively. Accordingly, the purpose of educational media is to facilitate communication as well as enhance learning. It can serve a variety of roles in the teaching process and has a great influence on learning engagement. The primary role is to help students learn and improve the teacher's teaching skills and abilities. One way of doing this is by providing an information-rich environment (Newby, as cited by Inyang 2022).

Educational media are the channels of communication that carry messages with an instructional purpose, and they also give proper guidance to solve teaching problems and one way to improve the level of learning engagement. Students will motivationally and behaviorally engage in an effective learning process, which has important implications for their achievement. Through the aid of educational media utilization on the learning engagement of students, Anib National High School is now offering teaching and new learning strategies that fit to the diverse learners, cater to different learning styles, like audiovisual learners, and also address the needs of 21st century learners. With the support of appropriate technologies, students can enhance their learning and be equipped with information, media, and technology skills, as well as good communication skills.

Student engagement addresses some problems regarding low achievement, low motivation, and high dropout rates. The student is a high achiever or a low achiever; teaching and learning through the use of technology takes low- and high-level students to heights unknown. ICT competencies have been integrated into the curriculum because technology is beneficial; it improves engagement and knowledge retention in students, and it also provides different opportunities to make it a more meaningful and productive learning experience. The education system is rapidly improving, and many kinds of technologies have been used to empower learning. After this series of continuous improvements, other research has only focused on learning achievement, particularly in both literacy and numeracy. Learning engagement is a very important factor in the teaching-learning process. Students invest an effort to be more engaged and enjoy the learning experience once technology is utilized. These conditions motivated the researcher to improve the teaching and learning experience so that it corresponds to the learning level of students. The influence of educational media that employ interactive PowerPoint games and technogame books as intervention tools will facilitate effective learning.

III. RESULTS AND DISCUSSION

The study utilized the descriptive-correlational method. There were 5 ICT teachers and 200 students at Anib National High School as respondents in this study during 1st semester of school year 2023-2024. Survey questionnaires were used for data gathering. The data obtained were statistically treated using weighted mean, Pearson Product-Moment Correlation of Coefficient and Coefficient Determination.

3.1 Population and Sample

The study participants were all ICT teachers and senior high school students from Anib National High School in Sipocot North District 1, Division of Camarines Sur, for the school year 2023-2024. The entire population consisted of five (5) ICT teachers and two hundred (200) senior high school students in grades 11 and 12. The distribution was determined using total enumeration.

3.2 Data and Sources of Data

A survey questionnaire was used as research instrument that consist of a set of questions designed to collect information from a respondent. It contributed to a better understanding on the influence of educational media utilization of teachers on student engagement in empowerment technologies. The instrument was validated and reliable by a field specialist, and a dry run test was conducted on a grade 10 class; these students were not the study's actual respondents.

The student perception survey questionnaire assessed learning engagement in using educational media. It was divided into questions on educational media utilization of teachers and the other about student engagement, with 60 items over all, to which teachers and students were asked to respond for 30 minutes. The first part was categorized into the three dimensions of educational media utilization by teachers such as cognitive, affective, and psychomotor aspects. Each category consists of 10 question items, for a total of 30. Meanwhile, the second part was also categorized into the three dimensions about the learning engagement of students such as knowledge development, social interaction, and motivation, and consists of 30 items. The result of the survey was determined through the Likert scale at five levels: very high (5), high (4), moderately high (3), low (2), and very low (1).

3.3 Theoretical framework

The study aimed to determine the influence of education media utilization on the learning engagement of students in empowerment technologies. This study is anchored on the following theories: Multimedia learning, Engagement theory of learning, and TPACK Model. The three theories, namely Multimedia learning, Engagement theory of learning, and the TPACK Model show that to achieve meaningful learning through the use educational media, the teacher must be aware of the learning styles of his students. These theories were useful in determining the influence of educational media utilization on improving the learning engagement of students in daily classroom instruction. Also, Multimedia learning best explains that students can get deeper learning from words and pictures compared with the picture alone, in the engagement theory of learning students connect with learning activities through interaction with others and through meaningful tasks, and in the TPACK model they need to be exposed to other forms of technology or multimedia in order to grasp the ideas presented by the teacher.

Mayer's cognitive theory of multimedia learning is based on three principles, first is the information processing system has two channels for individual processing of visual/pictorial information. Secondly, each channel has limited processing capacity, and thirdly, active learning requires coordination of the cognitive processes. Words usually take the form of some kind of explanatory text either narrated or written, and pictures can be either dynamic or static. Human being or students can get the deeper learning from words and pictures compared with pictures alone. Mayer devotes four chapters in the handbook to what he considers

to be fundamental theories or models. The four-component instruction design model consists of four interrelated components that must be included for complex learning to successfully occur (van Merriënboer & Kester, 2014). The first component emphasizes that learning tasks must be meaningful and real life. The second component argues that supportive information must be provided to form a bridge between what the learner knows and what needs to be learned. The third component enables learners to perform the required procedures. The fourth component is a part-task practice that enables learners to automate the required routine skills. This theory supports the idea that the engagement and learning can be attained through the multimedia, a combination of text, graphics and audio-visual presentation. This theory tells us that words and pictures or combination of both could be meaningful and helpful to them. Applying it in the classroom when utilizing educational media technology like PowerPoint presentation, audio and video lessons improve the level of learning engagement. To sum up the multimedia learning theory suggests a way to help the students learn more effectively as they more engaged in processing information. It will also create more enjoyable in the learning activities as they find the instructional materials motivating and engaging.

Greg Kearsley & Ben Shneiderman, as cited by Tomovic (2021) theory of engagement derived from experiences teaching with technology will serve as the theoretical framework for the research. Engagement theory holds that students connect with learning activities through interaction with others and through meaningful activity tasks. Researchers have applied engagement theory to learning educational media utilization can increase learning engagement and also can enhance collaborative learning opportunities which can facilitate creative, meaningful and authentic learning in a way that can more engaging than the traditional classrooms. Engagement theory supports the current study because it discusses how the student gets interested, motivated, and engaged in learning.

TPACK's theoretical framework, which was developed by Mishra & Koehler, as cited by Setiawan, H., & Phillipson, S. (2020) stands for technological pedagogical content knowledge. It is a teaching and learning model that allows teachers to combine technological skill, pedagogic skill, and content skill. It is a way of describing how technology pedagogy and the content fit together to enable powerful learning. Teachers should have good TPACK to effectively integrate technology into their teaching. Teachers must understand how technology, pedagogy, and content knowledge interact with one another to produce a learning experience that is meaningful for students in specific situations. Mishra and Koehler explains that effective teaching needs complex understanding that is connected in three main sources of knowledge: technology, pedagogy, and content, and how those three sources can be implemented according to their context. The studies of Winanto & Relmasira, (2015) by implementing TPACK in classroom teachers are expected to create a joyful and effective learning for students and the goal of learning is achieved. The goal of TPACK in the current study is to provide educators with a framework that is useful for understanding technology's role in the educational process. The model is of great relevance to the current study because it can serve as guide in ICT integration into teaching. It can improve the use of educational media in the teaching-learning process. Through this model, teachers during classes may be guided to determine on how technology pedagogy and the content fit together to execute the lesson effectively and efficiently. Also, they'll be able to eliminate or prevent any barrier that may hinder the transfer of learning during actual lessons because they are well-guided.

IV. RESULTS AND DISCUSSION

4.1 Results of Descriptive Statistics of Study Variables

Fig 4.1: Level of educational media utilization of the teachers

Aspect	AWM	Interpretation	Rank
Affective	4.90	VH	1
Psychomotor	4.86	VH	2
Cognitive	4.76	VH	3
Total Average Weighted Mean	4.84	VH	

Legend:

<i>Range</i>	<i>Interpretation</i>
4.21-5.00	Very High (VH)
3.41-4.20	High (H)
2.61-3.40	Moderately High (MH)
1.81-2.60	Low (L)
1.00-1.80	Very Low (VL)

In summation, the overall weighted mean of educational media utilization of the teachers along cognitive, affective, and psychomotor aspects were presented in Figure 1. It can be seen that the affective level had the highest rating with an overall weighted mean of 4.90 followed by psychomotor with 4.86 WM, and the rated lowest aspect was cognitive with WM of 4.76.

The level of educational media utilization of the teachers was presented in Figure 1. Data showed that the level of media utilization along affective, psychomotor, and cognitive was very high as described by their weighted means of 4.90, 4.86, and 4.76 respectively. Generally, along the three parameters, their level of media utilization was very high as described by their AWM of 4.84. Teachers utilizing educational media in class improves teacher performance, gives more control and flexibility in teaching and participating actively and positively in the classroom is manifested when technology is being utilized.

Fig. 2. Level of learning engagement of the students

Aspect	AWM	Interpretation	Rank
Motivation	3.95	H	1
Social Interaction	3.93	H	2
Knowledge Development	3.86	H	3
Total Average Weighted Mean	3.92	H	

In summation, the overall weighted mean of learning engagement of the students along knowledge development, social interaction, and motivation were presented in Figure 2. It can be seen that motivation had the highest rating, with an overall weighted mean of 3.95. followed by social interaction with 3.93 WM, and the rated lowest aspect was knowledge development with WM of 3.86. Generally, along the three parameters their level of learning engagement is high as described by their AWM of 3.92. Students attend lessons willingly and strive to do their best, particularly in collaborative tasks or group activities. Furthermore, students enjoyed learning new things in class because they are interested in courses/subjects. Students are inspired, motivated, and eager to learn once teacher use various technologies in teaching and learning process.

Fig. 3. Test on Significant Relationship Between the Level of Educational Media Utilization and the Learning Engagement of Students in Empowerment Technologies

Educational Media Utilization	Learning Engagement	r-value	p-value	Interpretation
Cognitive	Knowledge Development	0.785	0.007	Significant
	Social Interaction	0.841	0.002	Significant
	Motivation	0.85	0.002	Significant
Affective	Knowledge Development	0.829	0.003	Significant
	Social Interaction	0.791	0.006	Significant
	Motivation	0.828	0.003	Significant
Psychomotor	Knowledge Development	0.862	0.001	Significant
	Social Interaction	0.815	0.004	Significant
	Motivation	0.876	0.001	Significant

Legend:

<i>r-value</i>	<i>Interpretation</i>
$\pm 0.90 - \pm 1.00$	<i>Very High (Perfect) Correlation</i>
$\pm 0.70 - \pm 0.89$	<i>High Correlation</i>
$\pm 0.40 - \pm 0.69$	<i>Moderate Correlation</i>
$\pm 0.20 - \pm 0.39$	<i>Low Correlation</i>
<i>Less than ± 0.20</i>	<i>Negligible Correlation</i>

Legend:

$p > 0.05$	Not Significant (NS)
$p < 0.05$	Significant (S)

In Figure 3, This study was fastened on the premise that there is a significant relationship between the level of educational media and learning engagement of students. The alternative hypothesis has been proven correct based on Pearson's Correlation in Figure 3. The Pearson Product Moment Correlation was used to determine its level of correlation and significance.

Based from the figure, the highest computed r- value is 0.876 and the lowest computed r- value is 0.785 which indicates a high correlation between the dependent and independent variables.

Further, a significant relationship was noted based on the p-value of 0.007-0.001 which is less than the 0.05 level of significance. Thus, there is evidence to accept the alternative hypothesis that there is a significant relationship between the level of educational media and the learning engagement of students. This implied that the level of educational media influences the learning engagement of students.

Fig 4. Influence of Level of Educational Media Utilization and Level of Learning Engagement of Students.

Educational Media Utilization	Learning Engagement	r-value	r ² value	Int.
Cognitive	Knowledge Development	0.785	0.62	Moderate
	Social Interaction	0.841	0.71	Strong
Affective	Motivation	0.85	0.72	Strong
	Knowledge Development	0.829	0.69	Moderate
	Social Interaction	0.791	0.63	Moderate
Psychomotor	Motivation	0.828	0.69	Moderate
	Knowledge Development	0.862	0.74	Strong
	Social Interaction	0.815	0.66	Moderate
	Motivation	0.876	0.77	Strong

Legend:

<i>r²-value</i>	<i>Interpretation</i>
0.91-1.00	Very Strong
0.71-0.90	Strong
0.51-0.70	Moderate
0.31-0.50	Weak
0.01-0.30	Very Weak

Figure 4 presented the extent of influence of the level of educational media utilization and the level of learning engagement of students. Data showed that the highest computed r^2 – value is 0.876 with a verbal interpretation of strong correlation in motivation under psychomotor aspect and the lowest computed r^2 – value is 0.085 with a verbal interpretation of moderate correlation in knowledge development under cognitive. This implied that the level of educational media strongly influences in psychomotor but moderately influences cognitive and affective factors in the level of learning engagement of students.

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