

# Pre-Service Teachers' Educational Video Mediated Experience vis-a-vis Learning Engagement in the New Normal

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**Abstract.** Technology-mediated instruction using online instructional materials, particularly educational videos, reinforces teaching-learning. However, students' engagement becomes an issue in this learning environment. This paper ascertained the relationship between educational video utilization and learning engagement in technology-mediated learning. This study also investigated the perceived impacts of educational video utilization and the extent of respondents' learning engagement in technology-mediated learning. This study employed a quantitative non-experimental method through a descriptive correlational research method. The data were obtained from the survey questionnaire administered to 284 students in one University in Bicol Region, Philippines. It was analyzed and interpreted using different statistical treatments such as frequency count, percentage technique, weighted mean, PPMC, and t-test. Findings revealed that educational video utilization impacted the three aspects (cognitive, emotional, and behavioral) as perceived by the respondents. There was a large extent of learning engagement of the respondents in three areas: knowledge development, social interaction, and motivation. Furthermore, the result showed a significant correlation between the two variables; hence, it is recommended that language teachers utilize educational videos during the teaching-learning process to increase learning engagement in technology-mediated learning.

## 1 Introduction

Nowadays, the urge for an accelerated digital transformation of academic institutions has led to the employment of technology-mediated learning [1]. Technology-mediated learning resulted in using technology in students' learning processes in different disciplines, as it is the only avenue to teach, communicate, and collaborate [2]. It is one of the actions taken in response to the harmful effects of the COVID-19 pandemic on different aspects of society, such as dramatic loss of lives and economic and social disruption [3]. It also caused the world's greatest disruption in education systems, affecting roughly 1.6 billion students in

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more than 200 nations. More than 94 percent of the world's student population has been affected by school, institution, and other learning facility closures [4].

The rise of technology-mediated learning has been visible, and the utilization of online instructional materials has dominated. Additionally, educational videos have become a common online instructional material increasingly used in virtual education worldwide. Teachers predominantly use video in their lessons, with various aims, and the most common is to raise students' conceptual knowledge or interest [5]. Teachers and students benefit greatly from educational videos, which boost course performance and significantly affect student motivation, confidence, and attitudes. It also provides benefits for engagement in some specific aspects, such as broadening involvement, emotional engagement, and overall course engagement [6].

However, despite the numerous benefits of videos, some barriers to student engagement have been identified. Since instructors are unavailable to learn through videos, there is a greater need for self-discipline on the part of students. Also, self-regulation, a significant predictor of emotional, behavioral, and cognitive engagement, is difficult to monitor remotely. These are key challenges since the recent study of Giray (2022) revealed that many Filipino students are still struggling with learner control amidst a shift to online learning due to the pandemic [7]. Our previous study showed the learning and academic engagement of the students in technology-mediated learning became a challenge due to access and internet connectivity [5].

Furthermore, the transition to online instruction was more challenging for ESL students than for teachers [8]. Given the significance of English as a Second Language (ESL) programs in achieving proficiency in English as it is the language of commerce and law and the primary medium of instruction in education [9], the role of the teachers is to create and innovate ways for students during the teaching-learning process, such as using videos, podcasts, and other online resources.

Based on the given context, educational videos are integral to teaching-learning. However, issues are presented regarding the student's engagement in technology-mediated learning. Therefore, the researchers were determined to investigate further the perceived impact of educational video utilization covering the emotional, behavioral, and cognitive dimensions and the extent of respondents' learning engagement in knowledge development, social interaction, and motivation. Moreover, this paper ascertained if there is a significant relationship between the perceived impact of educational video utilization and the extent of respondents' learning engagement in technology-mediated learning.

## **2 Literature Review**

### **2.1 Educational Videos**

Multimedia learning tools have become critical parts of classrooms. They are common virtual tools that aid in understanding concepts. They may be films or clips to educate the audience on a topic or set of topics. These media are widely available and accessible on different platforms on the Internet [10].

These reasons and the improvements in digital technology and modern internet connections have aided in making videos a standard component of most learning environments. In fact, videos are used in classrooms more than ever. It was found that 70% of educators use videos in their classes many times each week [11]. There is also a growing strategic teaching approach in modern classrooms called video-assisted learning (VAL) [12]. It pertains to strategically using audio-visual aids, such as videos, to help students acquire knowledge, competence, and skills. It is also defined as a strategic teaching approach to

improve students' comprehension, cognitive ability, and socio-emotional skills [13]. Other than that, the emergence of the pandemic made educational videos more crucial in the instructional process. The situation forced educators to integrate video lessons into blended learning. They are now utilized in synchronous and asynchronous sessions to teach students [14].

Educational videos have numerous benefits in the teaching-learning process, especially for students. They are known for providing the audience with a rich sensory experience. As a result, learning becomes a more engaging experience for students [15]. Particularly, concise, conversational, and interactive videos are remarkably effective in facilitating learning [16]. They also improve cognitive and affective learning outcomes, increase knowledge retention, stimulate understanding and aptitude, accommodate different learning styles, and foster creative and critical thinking skills [17].

Moreover, educational videos also increase students' interest, given their proficiency with technology and appetite for online video consumption. It was supported by research that approximately 83% of individuals would rather watch videos than read instructive or informational content [18]. Further, it was revealed that students enjoy classes more when videos and other media are displayed, especially in real-time [19]. Similarly, the results obtained from the recent survey revealed that 82% of the teachers polled thought that using videos in teaching boosts students' achievement [20].

Animated teaching videos improve students' learning experiences by increasing interest and engagement, improving students' self-assessed understanding of the materials by simplifying technical concepts and providing visual aids, enabling flexible and self-paced learning, and providing a refreshing change from traditional teaching [21]. Videos supported the students' understanding of the concepts applied in the sessions. They also stated that students liked the ICT-favored multimedia classroom where videos could be shown for teaching and learning [22].

Other than that, the use of educational videos also benefits educators. They make the delivery of instruction easier and more time-efficient [23]. Technology and videos also allow educators to experiment with digital tools. Consequently, according to a comparable study, teachers' desire to develop their skills and create informative videos appears to be growing [24]. It was also suggested to use storytelling techniques, engaging voiceover, practical examples, good visuals, particularity in repeating information, adding humor, and asking questions and comments for feedback [25].

Furthermore, it was recommended that making educational videos more valuable to students through animated videos, whiteboard videos, live videos, videos mixing voice and pictures, and Khan Academy-style videos be considered while developing videos because these sorts of videos were the most popular and short videos should be prepared because long movies might generate boredom and distraction [26]. Videos are also recommended to be compatible with mobile, laptops, and other up-to-date devices. This compilation of published literature and conducted studies aided in grasping the concept of educational videos. It provided an overview of how educational videos were used and their implications. Other than that, it presented the facets of the topic that had already been studied.

## **2.2 Learning Engagement**

The learning process outcomes are greatly influenced by how active a learner is in its duration. This activeness, also called learning engagement, can aid in achieving targeted course outcomes as it promotes meaningful learning experiences and higher-level critical thinking [27]. Learning engagement is defined as the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their education. Engaged

learners take responsibility for their decisions, use feedback, evaluate personal conduct, and analyze appropriate responses to engage with learning opportunities and act autonomously for improvement [28].

There are three dimensions of learning engagement. These are cognitive engagement—which draws on the idea of investment and willingness to exert the effort necessary to comprehend complex ideas and master difficult skills; behavioral engagement—which draws on the idea of participation; and emotional engagement—which encompasses positive and negative reactions to teachers, classmates, academics, and school and is presumed to create ties to an institution and influence willingness to do the work [29].

The type of emotion experienced by learners is important in successful learning [30]. Autonomous motivation generates better learning than controlled motivation, whereby feelings of pride and guilt drive the desire to meet internalized social expectations. It was supported by [31], who suggested that emotionally stimulating events are remembered more clearly, accurately, and for longer periods than emotionally neutral events. The evidence highlights that engaging students on an emotional level will likely lead to better memory recall in the long run. Furthermore, the learners' motivation and engagement were intertwined as they associated with the learners' positive academic behaviors, which are salient in achieving academic success [32].

Behavioral engagement displayed behaviors associated with a student's effort toward learning and the learning process for a single activity or their overall learning experience [33]. Academic achievement and school retention positively correlate with behavioral engagement [34]. Behavioral, emotional, and cognitive are the three dimensions of engagement. However, the simplest term to define is behavioral engagement because the simplest indicators of behavioral engagement are attention, raising hands, finishing tasks, turning on cameras, and unmuting microphones.

Significant educational outcomes, such as academic success and satisfaction, are linked with learner engagement. Behavioral, emotional, and cognitive engagements are positively correlated to the student's academic performance [35]. Moreover, a study at the University of Mindanao suggested that student engagement positively influences course satisfaction [36]. A study conducted in selected universities in Manila, Philippines, also highlighted how social engagement in school positively affects students' life satisfaction [37].

Teachers may also utilize varied instructional strategies appropriate to the subject matter and the background knowledge of the students and may introduce more autonomy-supportive learning environments as an alternative to improve their instructional practices and students' engagement [38]. In addition, for students to maximize their academic involvement, there should be a significant collaboration between the instructor, the school, and the parents.

Students' academic engagement is intertwined with their learning success, mainly because students with a high level of emotional, behavioral, and cognitive engagement typically put more effort into learning the resources and materials [39]. This collated data provided an overview of learning engagement. The findings and conclusions were stated to guide the definition of learning engagement in the study. They also served as part of the guiding framework of the present study.

## **3 Methodology**

### **3.1 Research Design**

This study used quantitative non-experimental methods through a descriptive correlational method of research. The descriptive method was employed to determine the perceived impact of educational video utilization on respondents regarding cognitive, behavioral, and

emotional aspects and the extent of respondents' learning engagement in knowledge development, social interaction, and motivation. The correlation method was utilized to determine the significant relationship between the perceived impact of educational video utilization and the extent of respondents' learning engagement in technology-mediated learning.

### **3.2 Research Locale and Respondents**

This study was conducted in one state university in Bicol Region. The researchers purposely chose this school to determine the relationship between the perceived impact of educational video utilization and the extent of respondents' engagement in technology-mediated learning because the university adopted the digital way of disseminating knowledge to students. The university made a virtual learning portal (VLP) that serves as the university's learning method. Consequently, they require their teaching personnel to utilize online instructional materials like educational videos to deliver their lessons. The university adopts flexible learning methods and limited face-to-face classes for all programs. The students from the College of Education from 1<sup>st</sup> year to 4<sup>th</sup> year were the respondents of this study. The total population is 974, and Yamane's Formula was utilized to determine the sample size using a 5% margin of error, composed of 284 students. The distribution of respondents was selected through a random sampling technique utilizing a lottery method. The Bachelor of Secondary Education comprised 201 respondents from the 1st and 4th year of each specialization: BSEd English (50), BSEd Science (64), BSEd Math (47), and BSEd Filipino (40). The Bachelor of Elementary Education comprised 42 respondents, and the Bachelor of Technology and Livelihood Education comprised 41 respondents.

### **3.3 Research Instruments**

The student perception survey questionnaire assessed respondents' engagement using educational videos in technology-mediated learning. It was divided into Part I, *Perceived Impact of Educational Video Utilization on the Learning Engagement of ESL Students*, and Part II, *Extent of Learning Engagement of ESL Students*. It comprised 60 items, to which respondents were asked to respond for 30 minutes. The first part is categorized into the three dimensions of student engagement: cognitive, behavioral, and emotional. It determined the perceived impact of educational video utilization on the learning engagement of respondents in terms of the aforementioned dimensions. Each category consists of 10 question items, for a total of 30. The results were determined through the Likert scale in five levels: (5) strongly agree, (4) agree, (3) neutral, (2) disagree, and (1) strongly disagree.

Meanwhile, survey questions about the extent of respondents' learning engagement comprised 30 items divided into different aspects such as knowledge development, social interaction, and motivation. The results of the survey were ascertained through the Likert scale in five levels: (5) to a very large extent, (4) to a large extent, (3) to a moderate extent, (2) to a small extent, and (1) to a very small extent. The survey questionnaire crafted by the researchers and the modified standardized questionnaire were used to ascertain the perceived impact of educational video utilization in terms of cognitive, behavioral, and emotional aspects and the extent of respondents' learning engagement regarding knowledge development, social interaction, and motivation. It was validated by three (3) language professors and one (1) statistician/mathematics teacher to ensure its accuracy and reliability.

### 3.4 Data Analysis

The data were analyzed and interpreted using Frequency Count, Percentage Technique, Mean Used, PPMC, and T-test. These statistical treatments were utilized to explain the distribution of respondents and the relationship between the variables. The frequency Count and Percentage Technique was used to identify the distribution of respondents, the number of occurrences in the researchers' survey questionnaire, and its percentage. Weighted Mean and Ranking were used to measure and interpret the data gathered. It was also used to determine the perceived impact of educational video utilization on respondents regarding cognitive, behavioral, and emotional aspects and the extent of their engagement in knowledge development, social interaction, and motivation in technology-mediated learning. The Pearson Product-Moment Correlation (PPMC) was used to determine the extent of the relationship between the perceived impact of educational video utilization and the extent of respondents' learning engagement in technology-mediated learning. A T-test was used to determine if the null hypothesis was rejected or accepted.

## 4 Results and Discussion

This section covers the result of interpreted data from the 284 respondents from the College of Education. The gathered data is analyzed and interpreted using the Weighted Mean and Ranking Technique. Presented in Table 1 is the summary of the perceived impact of educational video utilization on respondents based on the result of the survey test conducted.

**Table 1.** Perceived Impact of Educational Video Utilization on Respondents

	<b>Weighted Mean (WM)</b>	<b>Rank</b>	<b>Interpretation</b>
Cognitive Engagement	4.48	1	Strongly Agree
Behavioral Engagement	4.28	2	Strongly Agree
Emotional Engagement	4.20	3	Strongly Agree
Average	4.32	---	Strongly Agree

The data disclosed that cognitive engagement has (WM: 4.48-strongly agree), behavioral engagement has (WM: 4.28-strongly agree), and emotional engagement has (WM: 4.20-strongly agree). These data obtained an average weighted mean of 4.32, described as strongly agree. As gleaned in the table, based on the respondents' perception, educational video utilization had identified impacts among the three aspects: cognitive, behavioral, and emotional.

The data implied that educational video utilization aids the students in comprehending the lessons and learning new concepts, fuels the imaginations and interests of the students, considers watching educational videos as an intellectually and emotionally stimulating activity, and brings satisfaction to the learning process.

Findings revealed that the educational videos helped the students comprehend the lessons thoroughly, discover things about the subjects, and help in their learning process. Moreover, it facilitates reflection, analysis, and critical thinking, increases the student's productivity, and even ignites their eagerness to study more. It was supported by the study of Ocampo (2018), which stated that videos supported students' understanding of the concepts used in the sessions. Also, integrating educational videos in lessons facilitates the learning process. It is supported by a current study that concise, conversational, and interactive videos are

remarkably effective in facilitating learning [23]. Furthermore, it showed that educational video utilization fosters reflection, analysis, and critical thinking.

Parallel to the above finding, educational videos help increase social interaction, have unlimited accessibility, provide a learning environment, pause and rewind, and allow a reasonable training period [40]. It enables self-paced learning and helps the students to access the lessons conveniently. Also, it allows students to simplify technical concepts, provides visual aids, enables flexible and self-paced learning, and provides a refreshing change from traditional teaching. As to the perceived impact of educational video utilization on respondents in terms of emotional engagement, the data revealed that it aids the students to look after creativity, fuels their imaginations, contributes ideas to the lessons, is intellectually stimulating for learning, and considers watching educational videos as an emotionally stimulating activity that helps the students remember the information more clearly and accurately.

Meanwhile, Table 2 presents the result of the summary of the extent of respondents' learning engagement based on the result of the survey test conducted.

**Table 2.** Extent of Learning Engagement of ESL Students

	<b>Weighted Mean (WM)</b>	<b>Rank</b>	<b>Interpretation</b>
Knowledge Development	4.08	1	Large Extent
Social Interaction	4.02	3	Large Extent
Motivation	4.04	2	Large Extent
Average	4.05	---	Large Extent

The data disclosed that knowledge development had (WM: 4.08-large extent), social interaction (WM: 4.02-large extent), and motivation (WM: 4.04-large extent). These data obtained an average weighted mean of 4.05, which was interpreted as a large extent. As gleaned from the table, the extent of learning engagement among three areas, namely, knowledge development, social interaction, and motivation, was described as large. Hence, it implied that the respondents use sophisticated learning strategies in planning, monitoring, evaluating, and accomplishing their school tasks and activities. They are engaged in attending their class willingly, actively participate in class discussions, and aid their colleagues in explaining course materials. They even exert efforts in performing their responsibilities, particularly in group work.

These findings parallel the study of Fletcher (2016), who postulated that engaged learners take responsibility for their decisions, use feedback, evaluate personal conduct, and analyze appropriate responses to engage with learning opportunities and act autonomously for improvement [41]. The data revealed that the respondents enjoy learning new things in class, behave accordingly, and listen attentively when other students and teachers are talking in class sessions. These data were supported by the study of Torto (2020), who stated that motivation was associated with emotional engagement that encompasses positive and negative reactions to teachers, classmates, academics, and school and is presumed to create ties to an institution and influence willingness to do work [29]. In addition, the results of this study implied that the respondents exemplified positive behaviors in class as they listened carefully when their classmates and teachers were talking in class. It was apparent in Martin et al.'s (2017) findings that learners' motivation and engagement were intertwined as they associated with the learners' positive academic behaviors, which are salient in achieving academic success [42].

Table 3 presents the relationship of the perceived impact of educational videos in terms of cognitive aspect among the three variables of learning engagement: knowledge development, social interaction, and motivation.

**Table 3.** Relationship between Cognitive Aspect and Learning Engagement

Source Of Relationships	r-value (r)	Interpretation	TestValue (TV)	Critical Value (CV)	Decision	Interpretation
Cognitive and Knowledge Development	0.43	<i>Moderately Positive Correlation</i>	8.11	±1.975	Reject H <sub>0</sub>	Significant
Cognitive and Social Interaction	0.39	<i>Moderately Positive Correlation</i>	7.16	±1.975	Reject H <sub>0</sub>	Significant
Cognitive and Motivation	0.38	<i>Moderately Positive Correlation</i>	6.89	±1.975	Reject H <sub>0</sub>	Significant

Findings revealed that the cognitive aspect is significantly correlated among the three variables of learning engagement (1. knowledge development,  $r=0.43$ ;  $TV=8.11 > CT=1.975$ , 2. Social Interaction,  $r=0.39$ ;  $TV=7.16 > CV=1.975$ , 3. Motivation,

$r=0.38$ ;  $TV=6.89 > CV=1.75$ ) at a 5% level of significance which resulted in the rejection of the null hypothesis. Moreover, there was a moderately positive correlation in the cognitive aspect among the three variables of respondents' learning engagement: knowledge development, social interaction, and motivation.

Based on the results, it can be inferred that there is a significant relationship between the perceived impact of educational video utilization in terms of cognitive aspect and the extent of respondents' learning engagement in technology-mediated learning. The data implied that educational video utilization impacted students' cognitive aspect, which aids in fostering learning engagement during the teaching and learning process. The educational video leads to a high student engagement rate since the cognitive process is a prerequisite for comprehending the complex information presented. The findings were parallel with the study of Priyakanth et al. (2021), who stated that making interactive videos assures learners' acquisition and advancement of new skills [43]. These interactions assist the students in driving deeper engagement and changing how they think and process the information they have learned.

Presented in Table 4 is the relationship of the perceived impact of educational videos in terms of behavioral aspects among the three variables of learning engagement: knowledge development, social interaction, and motivation.



**Table 4.** Relationship between Behavioral Aspect and Learning Engagement

Source of Relationships	r-value (r)	Interpretation	TestValue (TV)	Critical Value (CV)	Decision	Interpretation
Behavioral and Knowledge Development	0.58	<i>High Positive Correlation</i>	11.92	±1.975	Reject H <sub>0</sub>	Significant
Behavioral and Social Interaction	0.51	<i>High Positive Correlation</i>	9.84	±1.975	Reject H <sub>0</sub>	Significant
Behavioral and Motivation	0.43	<i>Moderately Positive Correlation</i>	8.06	±1.975	Reject H <sub>0</sub>	Significant

The findings revealed that the behavioral aspect is significantly correlated among the three variables of learning engagement (1. knowledge development,  $r=0.58$ ;  $TV=11.92 > CV=1.975$ , 2. Social Interaction,  $r=0.51$ ;  $TV=9.84 > CV=1.975$ , 3. Motivation,  $r=0.43$ ;  $TV=8.06 > CV=1.975$ ) at a 5% level of significance which resulted in the rejection of the null hypothesis.

Moreover, there was a high positive correlation in the behavioral aspect among the two variables of learning engagement, knowledge development, and social interaction. In contrast, there was a moderately positive correlation in motivation. Based on the results, it can be inferred that there is a significant relationship between the perceived impact of educational video utilization in terms of behavioral aspects and the extent of respondents' learning engagement in technology-mediated learning. The data implied that educational video utilization impacted the students' behavioral aspect, which contributed to an increase in their positive academic behaviors and the feelings they invested during the teaching and learning process.

Educational videos increased student engagement, as shown by lower dropout rates, more regular school attendance, improved performance at national assessments, and increased motivation [44]. Furthermore, the findings coalesced with another report that not only were the educational videos effective in helping students, but they also evoked their engagement as they found these teacher-made videos enjoyable [45].

Presented in Table 5 is the relationship of the perceived impact of educational videos in terms of emotional aspects among the three variables of learning engagement: knowledge development, social interaction, and motivation. Findings revealed that the emotional aspect is significantly correlated among the three variables of learning engagement (1. knowledge development,  $r=0.52$ ;  $TV=10.20 > CT=1.975$ , 2. Social Interaction,  $r=0.47$ ;  $TV=9.06 > 1.975$ , 3. Motivation,  $r=0.44$ ;  $TV=8.15 > CT=1.975$ ) at a 5% level of significance which resulted in the rejection of the null hypothesis.

**Table 5.** Relationship Between Emotional Aspect and the Three Variables of Learning Engagement

Source of Relationships	r-value (r)	Interpretation	TestValue (TV)	Critical Value (CV)	Decision	Interpretation
Emotional and Knowledge Development	0.52	<i>High Positive Correlation</i>	10.20	±1.975	Reject H <sub>0</sub>	Significant
Emotional and Social Interaction	0.47	<i>Moderately Positive Correlation</i>	9.06	±1.975	Reject H <sub>0</sub>	Significant
Emotional and Motivation	0.44	<i>Moderately Positive Correlation</i>	8.15	±1.975	Reject H <sub>0</sub>	Significant

It can be inferred that there was a highly positive correlation between the emotional aspect and knowledge development. In contrast, there was a moderately positive correlation between the two variables of learning engagement: social interaction and motivation. Based on the results, there is a relationship between the perceived impact of educational video utilization in terms of emotional aspect and the extent of respondents' learning engagement in technology-mediated learning.

The data implied that educational video utilization impacted the students' emotional aspect, which fuels their drive to engage in the teaching and learning process positively. The findings were in parallel with the study of Cole et al. (2021), which revealed that the students' motivations to interact with the course information can be influenced by including video in the course design to increase learning and learning engagement [46]. Moreover, the educational videos were found to positively impact students' cognitive load, satisfaction, and academic achievement.

## 5 Conclusion

It can be concluded that educational video utilization impacts the cognitive, behavioral, and emotional aspects. The respondents indicated that educational videos aid them in comprehending the lesson, increase their engagement in classroom settings and building off others' ideas, fuel their imagination, and contribute ideas to the lessons. Furthermore, respondents were pleased with their ability to learn new things in class and demonstrated this by paying close attention when other students and teachers spoke in class. It should be noted that they believe learning is boring to some extent. It was also discovered that there is a significant relationship between the cognitive, behavioral, and emotional aspects of educational video use and learning engagement in technology-mediated learning. With these findings, it is suggested that teachers use educational videos in the teaching-learning process more frequently. In doing so, it may respond to the needs of every student as it may feed the curiosity and imagination of the students, and it is ideal for creating intellectual and emotionally stimulating activities. They may employ educational videos in the discussion and create activities that captivate and ignite the students' interest and willingness to participate actively during the teaching-learning process. The schools may maintain and improve the pedagogy in teaching by sending the teaching personnel to seminars and

workshops that disseminate information about the effective utilization of educational videos in the teaching-learning process.

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