Cognitive Engagement As Mediator on Students' Internet Usage and Motivation to Achieve Academically in Cluster 6 Schools, Davao City

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Abstract. The current study evaluated whether cognitive engagement mediates the relationship between internet usage and students' academic motivation. In this study, the researcher selected the 215 junior high school students in cluster 6 public secondary schools in Davao City as the survey respondents. A stratified random sampling technique was utilized in the selection of the respondents. A non-experimental quantitative research design using a descriptive-correlational method was employed. The data collected were subjected to the following statistical tools: Mean, Pearson Moment Product Correlation, multiple linear regression analysis, and Structural equation model using mediation analysis. Findings revealed that students' internet usage, motivation to achieve academically, and cognitive engagement in cluster 6 public secondary schools in Davao City were described as extensive. Further, correlation analysis demonstrated that there is a significant relationship between students' internet usage, motivation to achieve academically, and cognitive engagement. Evidently, SEM using mediation analysis proved that cognitive engagement mediates the relationship between students' internet usage and motivation to achieve academically in cluster 6 public secondary schools in Davao City. In other words, cognitive engagement is a significant mediator in the relationship between students' internet usage and motivation to achieve academically. The study, therefore, was conducted to further utilize findings through publication in a reputable research journal.

KEY WORDS

1. Educational management   2. internet usage   3. cognitive engagement

1. Introduction

Engaged students do not just absorb content; they try to make meaning of what they are studying by putting in intellectual effort and working through challenging ideas. They care about the subject, feel motivated or excited to learn and take ownership of their own learning. Cognition involves the processes used to think, remember, solve problems, speak, imagine, and think. These pathways allow humans to gather facts, think about them, and combine the new information with what was previously learned in order to grow their knowledge base. In the Gobal context, the limited progress toward understanding the impact of motivation and productivity on achievement stems from two main research challenges. Springer (2012) argued that the imprecise nature of the internet activity in teaching-learning processes makes it difficult to describe why some teachers are good and what other teachers can do to improve.

Thus, the low level of students' internet productivity and teachers' use of teaching strategies may lead to an undesirable result in achievement and performance. Despite the interventions and research conducted on poor or fair academic performance among students, it remained a problem for educators worldwide (Ali, 2018). In developed countries, Bango and Mahesar (2018) reported that students who are not motivated to achieve academically continue to be very passive in class, especially in interactions, because it has been observed that most the secondary students' ages 16-18 years old are taking more time on the virtual world rather than studying their notes. Similarly, Sikhwari (2014) reports that students in higher education who possess poor proficiency in English language courses are less motivated and are seldom engaged in school activities. This is because students cannot cope with the complexity of the subjects when they enter the higher level. In the Philippines setting, Maranan (2017) reported that poor motivation resulted in very low National Achievement Test (NAT) and periodic assessments among students at the junior high school level. On the one hand, Baguia and Moneva (2018) defined internet usage as the means of communication, collaboration, managing, and organizing tasks with digital tools such as the internet, social media, and software to keep a task organized and efficient. This perspective suggests that Internet productivity could refer to the users' interaction with computer software, computer hardware, and other persons relating to Internet technology and activities involving Internet technology. Similarly, Fasae and Adegbilero-Iwari (2015) found that students in private universities who regularly access the internet facilities on their smartphones (such as e-mails, social media, and search engines) utilize it for educational and communication purposes. However, poor internet connectivity and the high cost of data subscription were identified as the significant challenges confronting the students.

On the other hand, Wang et al. (2016) defined cognitive engagement as the process of self-regulated learning, using deep learning strategies, and exerting the necessary cognitive strategies for the comprehension of complex ideas. Greene (2015) described cognitive engagement as the student's level of investment in learning which includes thoughtfulness, strategizing, and willingness to exert the necessary effort in the comprehension of complex ideas or mastery of difficult skills. Marpa (2016) cognitive engagement is associated with how much the student invests in his education and how much he motivates himself. This also includes the significance of academics to the student, as well as getting good grades and the ability to finish tasks while going beyond what is expected. Several studies pointed out that there exists a significant link among internet productivity and motivation to achieve academically of the students. For instance, the study of Godzicki et al. (2013) showed that internet usage and implementation is an effective means to engage students in relevant learning, in that the use of internet improves strategies for learning, thus, improving academic performance. On the other hand, Attard (2013) showed that students who are motivated academically are involved in the lesson in meaningful ways through participation in classroom activities, collaboration with teachers and students, and individual reflection about learning. Similarly, the study of Sivrikaya (2019) showed that there is a low positive and significant correlation between motivation to achieve academically and academic performance of the students. Particularly with respect to students, motivation for academic achievement is of great importance. Although the interplay of internet usage and motivation to achieve academically among students is investigated widely in general education, problems of poor motivations remain unanswered. Also, most of those studies were conducted in foreign setting, and examine only the direct influence among the variables.

Thus, the current study will fill in the gap on conducting a study on the evaluating the mediating effect of cognitive engagement on internet usage and motivation to achieve academically in Philippine setting. The researcher made use of quantitative approach, specifically descriptive-correlational design. Hence, recognizing their innate learning dispositions and their motivation towards their studies will be a basis for the secondary school administrators to design and implement educational interventions with the goal of enhancing students' academic perfor-

mance and the quality of their learning experiences. Adding more, the results of the study may serve as available data for educational planners in making enhancement programs regarding those aspects of teaching strategies domains that may enhance student engagement in science class. In addition, for further dissemination of the findings of this study, there is a plan to publish the study in journals so that there is a greater number of teachers that could read the results of the study.

2. Methodology

This section contains the research design, research respondents, research instrument, data gathering procedure, and data analysis.

2.1. Research Design—The researcher employed quantitative non-experimental design utilizing correlational technique of research to gather data ideas, facts and information related to the study, the researcher. Quantitative research, as described by Bhandari (2020), is a research strategy that focuses on quantifying the collection and analysis of data. Accordingly, quantifying is formed from a deductive approach where emphasis is placed on the testing of theory, shaped by empiricist and positivist philosophies, while, non-experimental research is research that lacks the manipulation of an independent variable. Rather than manipulating an independent variable, researchers conducting non-experimental research simply measure variables as they naturally occur in real world. Meanwhile, descriptive-correlational research, according to Myers and Well (2013), examines how the independent variable influences the dependent variable and establishes cause-and-effect relationships between variables. In this study, the researcher was able to look into the relationship between two variables– internet usage and motivation to achieve academically of the students. In this connection, the study

focused on exploring which domains of internet usage significantly influence the motivation to achieve academically of the students. In this study, the use of descriptive-correlational was appropriate because the researcher only focused on the behavioral aspect of the respondents and the researcher was unable to perform an experiment in controlled set-up.

2.2. Research Respondents—The respondents of the study were the junior high school students in Cluster 6 Schools, Davao City. In this study, the 200 respondents were selected through a stratified random sampling technique. Stratified random sampling is a method of sampling that involves the division of a population into smaller sub-groups known as strata. According to Shi (2015), in stratified random sampling, or stratification, the strata are formed based on members' shared attributes or characteristics, such as income or educational attainment. Stratified random sampling is appropriate in this study because there is heterogeneity in a population that can be classified with ancillary information. In this study, certain inclusion criteria were implemented in determining the respondents of the study. The primary consider-

ation of this study is to select respondents who can provide information to achieve the purpose of this study. Hence, only those enrolled junior high school students in Cluster 6 Schools, Davao City, and those who voluntarily signed the ICF were given the survey questionnaires. Moreover, the study was delimited only to the nature of the problem based on the research questions and, thus, it did not consider the gender and socio-economic status of the students.

2.3. Research Instrument—The study employed the questionnaires adapted from different studies and were modified to fit the context of the respondents of this study. The instrument was divided into two parts. The first part of the instrument focused on the internet usage of students in far-flung areas. This questionnaire was adapted from the study of Baguia and Moneva (2018). Vocabulary learning strategy is indicated with internet usage data skills, internet data for academic purposes, method of information data search, and quality of learning through internet mobile data. In the manner of answering the questionnaire, the respondents made use of the 5-Likert scale. As a guide in determining the extent of internet usage, the researcher made use the range of means, descriptions and interpretations as presented below:

Range of Mean	Descriptive Level	Interpretation
4.20 - 5.00	Very Extensive	The internet usage is always observed.
3.40 - 4.19	Extensive	The internet usage is oftentimes observed.
2.60 - 3.39	Moderately Extensive	The internet usage is sometimes observed.
1.80 - 2.59	Less Extensive	The internet usage is seldom observed.
1.00 - 1.79	Not Extensive	The internet usage is never observed.

The second part of the instrument was about the motivation to achieve academically of the students. This questionnaire was adapted from the study of Waugh (2001) and indicated striving for excellence, desire to learn, and personal incentives. The modified questionnaire obtained a Cronbach alpha value of 0.978 interpreted as excellent. In the manner of answering the questionnaire, the respondents made use of the 5-Likert scale. As a guide in determining the extent of motivation to achieve academically, the researcher made use of the range of means, descriptions, and interpretations as presented below:

Range of Mean	Descriptive Level	Interpretation
4.20 - 5.00	Very Extensive	The motivation to achieve academically is always manifested.
3.40 – 4.19	Extensive	The motivation to achieve academically is oftentimes manifested.
2.60 – 3.39	Moderately Extensive	The motivation to achieve academically is sometimes manifested.
1.80 – 2.59	Less Extensive	The motivation to achieve academically is seldom manifested.
1.00 – 1.79	Not Extensive	The motivation to achieve academically is never manifested.

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The third part of the instrument was about the cognitive engagement of the students. This questionnaire was adapted from the study of Wang et al. (2016). The modified questionnaire obtained a Cronbach alpha value of 0.944 interpreted as excellent. In the manner of answering the questionnaire, the respondents made use of the 5-Likert scale. As a guide in determining the extent of cognitive engagement, the researcher made use of the range of means, descriptions, and interpretations as presented below:

Range of Mean	Descriptive Level	Interpretation
4.20 - 5.00	Very Extensive	The cognitive engagement is always evident.
3.40 – 4.19	Extensive	The cognitive engagement is oftentimes evident.
2.60 – 3.39	Moderately Extensive	The cognitive engagement is sometimes evident.
1.80 – 2.59	Less Extensive	The cognitive engagement is seldom evident.
1.00 – 1.79	Not Extensive	The cognitive engagement is never evident.

The questionnaire was pilot-tested in a nearby school and expected to obtain a Cronbach's alpha value greater than 0.700 to ensure that the questionnaires have a high level of internal consistency (Koonce Kelly, 2014). The scaling will be done by having one-half of the value of 5 as an average cut-off point or the fair level, with a uniform interval of 0.80. Before the administration of the instrument, it was subjected to validation by three experts and was revised according to their expert comments.

2.4. Data Gathering Procedure—Steps were undergone by the researcher in conducting the study after the validation of the research questionnaire. Permission to Conduct the Study. The researcher secured the permission to conduct the study. The researcher secured the endorsement from the Dean of the Graduate School in Rizal Memorial Colleges, Inc., Davao City. The endorsement letter from the Dean of the Graduate School in Rizal Memorial Colleges, Inc., Davao City was attached to the permission letters to be endorsed to the Schools Division Superintendent, and then to the school principals of the selected public secondary schools in Cluster 6 Schools, Davao City. Distribution and Retrieval of the Questionnaire. The researcher proceeded to distribute the research instrument to the respondents after the approval to conduct the study. Upon the distribution of the questionnaires, the benefits of the survey were briefly discussed and explained to the identified respondents of the study. For the administration of the questionnaire, the study was done in the fourth quarter of the school year 2022-2023. More so, the respondents of the study were given enough testing time for the questionnaires to be finished. After this, the data collected were subjected to quantitative analysis. Collation and Statistical Treatment of Data. After the questionnaire was retrieved, the scores of each respondent were tallied to organize the data per indicator. Then, each score was subjected to descriptive and inferential analysis using SPSS.

2.5. Data Analysis—The following were the statistical tools utilized by the researcher in processing the gathered data: Mean. This was useful in characterizing the internet usage and

motivation to achieve academically of the students. This was used to supply the answer for objectives 1 and 2. Pearson Product Moment Correlation. It was used in this study to asses the significant relationship between independent (internet usage), and dependent (motivation to achieve academically). It is a statistical measure of the strength of a linear relationship between paired data. In a sample, it is usually denoted by r. Structural Equation Modelling Through Mediating Analysis Using JASP. It was applied to evaluate the mediating effect of cognitive engagement on the internet usage and motivation to achieve academically of the students.

3. Results and Discussion

This chapter presents the results generated from the data gathered. It is sequenced based on the objectives of the study, as presented in the first chapter. Thus, it presents the extent of internet usage, motivation to achieve academically, and cognitive engagement of students; the significant relationship among these variables; and the mediating effect of cognitive engagement on the relationship between internet usage and students' motivation to achieve academically.

Summary of Students' Internet Usage Lastly, Table 1 shows the summary of the extent of students' internet usage. The overall mean of the students' internet usage is 3.44 described as extensive and interpreted as students' internet usage is oftentimes observed. The table further indicated that students' internet usage in terms of method of information data search acquired the highest mean score of 3.50, described as extensive and interpreted as oftentimes observed, while students' internet usage in terms of usage of internet data for academic purposes got the lowest mean score of 3.35 described as moderately extensive and interpreted as sometimes observed. The result implies that the extent and manner in which students engage with the internet for various purposes, including academic research, communication, information retrieval, collaboration, and entertainment is oftentimes observed among students. This supports Fasae and Adegbilero-Iwari's (2015) findings that students can benefit from a wealth of information available online, enabling educators to design learning activities that involve research projects, online databases, and diverse learning materials. The use of the internet to gather information, conduct research, and access educational resources. Adding more, the result of the current study agrees with the idea of Roblyer and Doering (2013) that internet-savvy students can benefit from a blended learning approach, where online resources complement face-to-face instruction, providing flexibility and personalized learning experiences. Engaging with online learning platforms, courses, and resources to supplement traditional classroom instruction.

Summary of Students' Motivation to Achieve Academically

Lastly, Table 2 shows that the student's motivation to achieve academically reflects an overall mean of 3.43, described as extensive and interpreted as oftentimes manifested by junior high school students in Cluster 6 secondary public schools in Davao City. Adding more, results on the table show that students' motivation to achieve academically in terms of personal incentives acquired the highest mean score of 3.45, described as extensive and interpreted as oftentimes manifested, interpreted as domain oftentimes manifested by the respondents. Meanwhile, students' motivation to achieve academically in terms of desire to learn acquired the low-

Table 1. Summary of Students' Internet Usage

Indicators	Mean	Descriptive Equivalent
Internet Usage Data Skills	3.41	Extensive
Usage of Internet Data for Academic Purposes	3.35	Moderately Extensive
Method of Information Data Search	3.50	Extensive
Quality of Learning Through Internet Mobile Data	3.49	Extensive
Overall Mean	3.44	Extensive

est mean score of 3.37 described as moderately extensive and interpreted as domain oftentimes manifested.

Table 2. Summary of Students' Motivation to Achieve Academically

Indicators	Mean	Descriptive Equivalent
Striving for Excellence	3.41	Extensive
Desire to Learn	3.37	Moderately Extensive
Personal Incentives	3.45	Extensive
Overall	3.41	Extensive

The result suggests that the internal drive and desire that students have to succeed in their academic endeavors is oftentimes observed among the respondents. This finding is similar to Sandoval-Pineda's (2018) assertion that high levels of academic motivation often involve a genuine interest in learning. This intrinsic interest can result in a deeper understanding of concepts and a lifelong love of learning. A natural curiosity and interest in the subject matter itself rather than external rewards. More so, the result supports Mbatha's (2015) idea that motivated students set specific, measurable goals and work towards achieving them. High levels of motivation contribute to a sense of accomplishment and a positive mindset.

Students' Cognitive Engagement

Table 3 shows the extent of students'

engagement in Cluster 6 Public Secondary Schools in Davao City, reflecting an overall mean of 3.69, described as extensive and interpreted as oftentimes evident. The mean ratings of the items range from 3.45 to 4.02. The item, Going through the work for class and make sure that it's right reflects a mean rating of 3.45 described as extensive, interpreted as item is oftentimes evident. Meanwhile, the item Studying everything in my lessons, even the hardest part shows a mean rating of 4.02, described as extensive and interpreted as item on this domain is oftentimes evident. The result suggests that the process of self-regulated learning, using deep learning strategies, and exerting the necessary cognitive strategies for the comprehension of complex ideas is oftentimes evident.

The finding is in consonance with the view of Greene (2015) that cognitive engagement is the student's level of investment in learning, which includes thoughtfulness, strategizing, and willingness to exert the necessary effort in comprehending complex ideas or mastery of diffi-

Table 3. Students' Cognitive Engagement (Mediator)

Statement	Mean	Descriptive Rating
Going through the work for class and make sure that it's right.	3.45	Extensive
Trying to connect what I am learning to things I have learned before.	3.66	Extensive
Trying to understand my mistakes	3.78	Extensive
Studying everything in my lessons, even the hardest part.	4.02	Extensive
Doing more than required in my class.	3.55	Extensive
Overall Mean	3.69	Extensive

cult skills. Also, the result agrees with Hlalele's (2018) view that cognitive engagement is crucial in the classroom because students who are engaged are more likely to learn, find the experience rewarding, and continue with higher education.

Relationship among Students' Internet Usage, Motivation to Achieve Academically, and Cognitive Engagement

The results of the analysis of the relationship among students' internet usage, motivation to achieve academically, and cognitive engagement in Cluster 6 Public Secondary Schools in Davao City are presented. Bivariate correlation analysis using Pearson product-moment correlation was utilized to determine the relationship among the variables mentioned. Table 4 shows that internet usage has a significant positive relationship with the student's motivation to achieve academically with a p-value of .000, which is less than the .05 level of significance (two-tailed) (r = .251, p < 0.05). It means that as the extent of internet usage, students' motivation to achieve academically also significantly changes. This leads to the rejection of the null hypothesis of no significant relationship between internet usage and students' motivation to achieve academically. The findings are in consonance with the study of Yesilyurt et al. (2014) pointed out that internet connection contributes to students' academic performance as well as self-learning skills. Students see the internet as a source of general knowledge, and it really helps them improve their reading habits, leading to an improvement in their academic performance.

On the one hand, the result shows that the relationship between internet usage and the cognitive engagement of students has a significant positive relationship with a p-value of .00, which is less than the alpha set at .05 (r = 0.489 p < 0.05). This means that if the extent of internet usage changes, the extent of cognitive engagement of the students also significantly changes. This leads to the rejection of the null hypothesis of no significant relationship between internet usage and the cognitive engagement of the students. The findings are in consonance with the study of Ayub et al. (2014) that there is a significant low correlation between the amount of time spent on the Internet and academic achievement among students in institutions of higher education. The authors pointed out that the Internet is widely used by students to seek relevant information and materials to complete their assignments or projects. On the other hand, the result shows that the relationship between cognitive engagement has

Table 4. Relationship among Students' Internet Usage, Motivation to Achieve Academically, and Cognitive Engagement

Variables	Motivation to Achieve Academically	Cognitive Engagement
Internet Usage	0.251**	0.489**
	0.000	0.000
	Reject H01	Reject H01
Motivation to Achieve Academically	1	0.727**
		0.000
		Reject H01

**Significant @p<0.05

a significant positive relationship with the student's motivation to achieve academically with a p-value of .000 which is less than the alpha set at .05 (r = 0.727 p<.05). This means that if the extent of cognitive engagement changes, students' motivation to achieve academically also significantly changes. This leads to the rejection of the null hypothesis of no significant relationship between cognitive engagement having a significant positive relationship with the student's motivation to achieve academically. This finding is parallel to the findings of a study conducted by Naimnule and Corebima (2018), which found that debugging strategies are essential for successful learning because they enable individuals to direct their own cognitive skills toward a higher level.

Mediating Effect of Cognitive Engagement on the Internet Usage and Students' Motivation to Achieve Academically

Results in Table 5 show the mediating effect of cognitive engagement on the relationship between internet usage and students' motivation to achieve academically in Cluster 6 Public Secondary Schools in Davao City. As shown in the table, the total effect of internet usage as the independent variable on the student's motivation to achieve academically in Cluster 6 Public Secondary Schools in Davao City, which is this study's dependent variable, is significant, as evident in the estimated value of 0.751 and p<0.05. On the one hand, it can be seen in the table that the direct effect of internet usage on students' motivation to achieve academically in Cluster 6 Public Secondary Schools in Davao City is significant, as indicated by an estimated value of 0.393, p<0.05. Lastly, internet usage on the student's motivation to achieve academically with cognitive engagement as a mediator is significant, as indicated by the estimated value of

0.358 and p<0.05. Therefore, it could be said that partial mediation took place. Hence, the null hypothesis of cognitive engagement does not mediate the relationship between internet usage and students' motivation to achieve

Adding, the table indicates the results of the computation of the effect size in the mediation test conducted between the three variables.

The effect size measures how much of the effect of internet usage on students' motivation to achieve academically can be attributed to the

Table 5. Mediating Effect of Cognitive Engagement on Internet Usage and Students' Motivation to Achieve Academically

Effect Type p-value	Path	Estimate	Std. Error	z-value
Indirect Effect Components 0.000	IU → CE → MTA	0.358	0.044	8.096
Direct Effect 0.000	IU → MTA	0.393	0.049	7.997
Total Effect 0.000	IU → MTA	0.751	0.050	14.967

Ratio Index = 0.4767

Legend: IU– Internet Usage; CE – Cognitive Engagement; MTA – Motivation to Achieve Academically

indirect path. As shown in the figure, the ratio index obtains a value of 0.4767 indicating that about 47.67 percent of the total effect of the independent variable on the dependent variable goes through the mediator variable, and about 52.33 percent of the total effect is either direct or mediated by other variables not included in the model. Through mediation analysis, the mediation model shown in Figure 2 was generated. The significant role of cognitive engagement as a mediator in the relationship between internet usage and students' motivation to achieve academically is contributed by the fact that there exists a relationship among these variables. It is emphasized in this study that cognitive engagement is an undeniable factor that has a positive relationship between internet usage and students' motivation to achieve academically. This finding is in agreement with Godzicki's et al. (2013) postulate that cognitive engagement acts as a mediator in the relationship between internet usage and students' motivation to achieve academically. As students actively navigate online resources, interact with various learning modalities, and engage in problem-solving and critical thinking, their cognitive processes contribute to a positive learning experience that, in turn, influences their motivation to succeed academically. Finally, the results of the study support the theory anchored in this study, which is the Information Processing Theory by Johnson (2006), which explains the process of cognitive development via the internet through mental processes such as attention, perception, comprehension, memory, and problem-solving. Metacognitive processes such as planning, searching strategies, and evaluation of information are exercised when using the Internet in congruence with the nature of the Internet as a multimodel interactive tool for both input and output. Internet use has been described in regard to its benefits, including enhancing the visual processing of information and increasing language and literacy skills.

4. Conclusions and Recommendations

This part of the paper presents the researcher's conclusion and recommendation. The discussion is supported by the literature presented in the first chapters, and the conclusion was in accordance
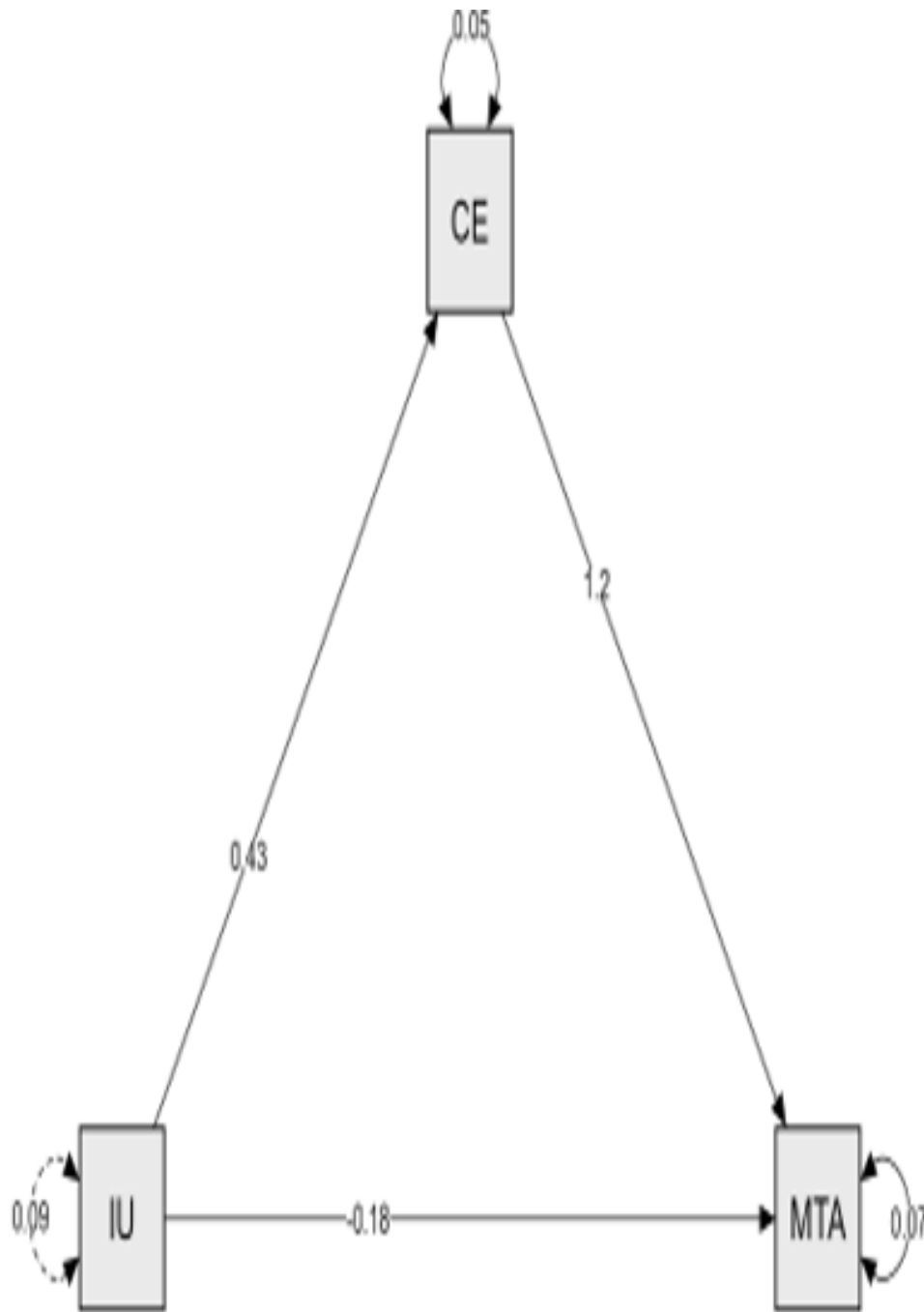
Figure 2. Mediation Model

with statements of the problem presented in this study.

4.1. Findings—The study primarily aimed to determine the role of cognitive engagement as a mediator on internet usage and students' motivation to achieve academically utilizing non-experimental quantitative design using structural equation modeling through mediation analysis. The researcher selected the 215 junior high school students in Cluster 6 Public Secondary Schools in Davao City Division as the respondents through a stratified random sampling method. The researcher made use of modified and enhanced adapted survey questionnaires, which were pilot-tested in a nearby school to ensure high reliability and internal consistency of the items in the instrument. Based on the results the summary of the findings was the following: The extent of students' internet usage has an overall mean of 3.44 with a descriptive rating of extensive. Also, students' internet usage in terms of internet usage data skills, usage of internet data for academic purposes, method of information data search, and quality of learning through internet mobile data obtained mean scores of 3.41, 3.35, 3.50, and 3.49, respectively. The extent of students' motivation to achieve academically in Cluster 6 Public Secondary Schools in Davao City has an overall mean of 3.43 with a descriptive rating of extensive. Students' motivation to achieve academically in terms of striving for excellence, desire to learn, and personal incentives obtained mean scores of 3.41, 3.37, and 3.45, respectively. More so, the extent of students' cognitive engagement in Cluster 6 Public Secondary Schools in Davao City has an overall mean of 3.69 with a descriptive rating of extensive. The result showed that internet usage has a significant positive relationship with the student's motivation to achieve academically in Cluster 6 Public Secondary Schools in Davao City with a p-value of .000 that is less than .05 level of significance (two-tailed) (r = .523, p<0.05). On

the one hand, internet usage has a significant positive relationship with cognitive engagement with a p-value of .000, which was less than the .05 level of significance (two-tailed) (r = .749, p<0.05). On the other hand, cognitive engagement has a significant positive relationship with the student's motivation to achieve academically in Cluster 6 Public Secondary Schools in Davao City with a p-value of .000 that was less than .05 level of significance (two-tailed) (r = .842, p<0.05). Cognitive engagement mediates the relationship between internet usage and students' motivation to achieve academically in Cluster 6 Public Secondary Schools in Davao City. The analysis obtained the estimates value of 0.358 with p<0.05, 0.393 with p<0.05, and 0.751 with p<0.05 for indirect, direct, and total effects, respectively. Moreover, the ratio index obtains a value of 0.4767, indicating that about 47.67 percent of the total effect of the independent variable on the dependent variable goes through the mediator variable, and about 52.33 percent of the total effect was either direct or mediated by other variables not included in the model.

4.2. Conclusions—Based on the findings of this study several conclusions were generated: Students' internet usage in Cluster 6 Public Secondary Schools in Davao City was extensive. Students' internet usage in terms of internet usage data skills, method of information data search, and quality of learning through internet mobile data were rated as extensive and interpreted was oftentimes observed, while, students' internet usage in terms of usage of internet data for academic purposes was rated as moderately extensive and interpreted as sometimes observed. This means of communication, collaboration, managing and organizing tasks with digital tools such as the internet, social media, and software to keep a task organized and efficient was oftentimes observed. Students' motivation to achieve academically in Cluster

6 Public Secondary Schools in Davao City was extensive. Students' motivation to achieve academically in terms of striving for excellence, desire to learn, and personal incentives were described as extensive and interpreted as oftentimes manifested, while students' motivation to achieve academically in terms of striving for excellence, desire to learn, and personal incentives described as extensive and interpreted as oftentimes manifested. This shows that the set of methods worried with a force that energizes behaviour and directs it at attaining some academic goals was oftentimes manifested among the students. Students' cognitive engagement in Cluster 6 Public Secondary Schools in Davao City is extensive. This denotes that the process of self-regulated learning, using deep learning strategies, and exerting the necessary cognitive strategies for the comprehension of complex ideas was oftentimes evident among students. Meanwhile, internet usage has a positive significant relationship with students' motivation to achieve academically in Cluster 6 Public Secondary Schools in Davao City. Also, internet usage has a positive significant relationship with students' cognitive engagement in Cluster 6 Public Secondary Schools in Davao City. Lastly, cognitive engagement has a positive significant relationship with students' motivation to achieve academically in Cluster 6 Public Secondary Schools in Davao City. Moreover, cognitive engagement mediates the relationship between internet usage and students' motivation to achieve academically in Cluster 6 Public Secondary Schools in Davao City. Cognitive engagement is an undeniable factor that has a positive relationship between internet usage and students' motivation to achieve academically.

4.3. Recommendations—Based on the conclusion generated in this study, the researcher recommends the following: It was highly recommended that the policymakers and the Department of Education that each aspect of online teaching, from curriculum, theory, and practice to administration and technology, be formulated in a way that promotes productivity and the effectiveness of online learning. It was necessary to have a qualified teacher to create the course schedules and curriculum according to the student's requirements. A flexible lesson plan could give students the comfort of studying at their own pace. This may allow them to individually focus on challenging topics rather than struggle with a single concept for hours. In addition, teachers may prepare a well-structured classroom environment to enhance students' motivation to achieve academically. Part of boosting the effectiveness of internet usage inside the classroom is to have a plan. Instructions, lesson plans, and assignments need to be planned carefully to help create a flow during the lecture. It was advised to have all the necessary files, documents, and presentations organized so that time and effort were not wasted during the class to locate or open them. A comprehensive learning management system could assist teachers in content management, creating agendas, monitoring student progress, and upgrading the courses to fit the highest education standards. Lastly, researchers may conduct further analysis on the factors that may contribute to the relationship between internet usage and motivation to achieve academically among students since only 47.67 percent of the total effect of the independent variable on the dependent variable goes through the mediator variable.

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