EduLine: Journal of Education and Learning Innovation *ISSN: 2775-6173 (online)*
Vol. 3 No. 3 (2023)
https://doi.org/10.35877/454RI.eduline1988

Instructional Materials Motivation and Synchronous Classroom Learning in Relation to the Students' Academic Performance in Mathematics

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Abstract

Students' motivation and perception are important factors to consider in online learning. This study determined the students' level of motivation in instructional materials and perception in synchronous classroom learning at Misamis University for the academic year 2021-2022. The researchers used the descriptive-correlational research design. The respondents of the study were the 138 Junior High School students chosen through purposive sampling technique. The gathering of data was done by the use of the Instructional Materials Motivation Survey (IMMS) and Synchronous Classroom Learning Survey (SCLS) as instruments. Mean, Standard Deviation, Pearson r, and Stepwise Regression Analysis were the statistical tools employed in the data analysis. Results revealed that students' level of motivation in instructional materials used by teachers was high, and students' perception of synchronous classroom learning was good. This indicates that students who find the learning materials appealing are more likely to perform well in Mathematics. Teachers needed to be comfortable using technology to produce classes, interactive activities, assessments, projects, and other responsibilities to boost their creativity in creating instructional materials to increase students' satisfaction in the classroom. Future researchers should look into other factors contributing to students' academic performance in synchronous classroom learning.

Keywords: *Instructional materials; Synchronous classroom learning; academic performance in mathematics; students' perception; satisfaction*

1. Introduction

Students were having difficulties understanding mathematics. This is due to students' delayed understanding of the content and answering mathematical problems in comparison to other topics (Widyawati & Rahayu, 2018). Students' attentiveness during maths sessions could be more concentrated. When studying mathematics, they tend to talk about other matters more. They seldom participate actively in class. While studying math, the majority of them are passive. Even some students still need to complete the tasks assigned to them by their teachers since they are still struggling to understand the topic (Putra et al., 2020). Teachers need to use classroom media and learning approaches optimally when teaching mathematics (Widyawati & Rahayu, 2018). Teachers are less satisfied with their students' learning outcomes as a result of this situation (Putra et al., 2020).

Hence, motivation to study is a crucial aspect of education, especially in educational technology, where the instructor's physical presence is becoming increasingly absent (Hauze & Marshall, 2020). It is crucial that students are motivated to study due to the successful design of instructional materials and are optimistic about improving their attitude toward learning. Creating efficient multimedia-based instructions for a mobile-assisted tool raised learners' motivation and resulted in higher learning performance (Refat et al., 2020).

Recently, due to the rapid shift in the environment caused by the novel coronavirus, online learning has emerged as a viable alternative for the global education industry (Akuratiya & Meddage, 2020). The growth of Internet technology has altered how many types of classrooms may be constructed, including merging several physical classrooms, synchronous cyber classrooms, and asynchronous cyber classrooms (Yang et al., 2019). Virtual classrooms make use of computer-mediated technology to aid in the processes of learning, teaching, and communicating (Hussain Al-Qahtani, 2019).

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Students consider online learning beneficial (Shukri et al., 2020). They view online learning as successful as face-to-face learning, as fun, allowing them to study at their speed, having simple access to online content, and requiring active engagement (Akuratiya & Meddage, 2020). Significant improvements in students' attitudes toward math learning were seen, as were small improvements in math results in multiple-choice and math problems (Lemus, 2021). When developing online assignments for freshmen courses, extra consideration must be given to psychological (autonomy, usefulness, relevance), cognitive (information overload), social (relatedness, interaction), and environmental learning situations (an emergency, uncertainty, isolation) (Murod & Yuichi, 2021). Participation, collaboration, and active participation form a positive feedback loop that promotes each feature even in an online environment (Sugino, 2021).

The attitude of instructors and students toward innovations (technologies) is a critical factor in their ability to position themselves quickly and readily in e-learning. Using personal computers, networks, computer simulations, and portable devices (iPads, tablets, and mobile devices) has captured the interest of many students who benefit from them as an educational tool (Uzma et al., 2021). Online education programs attempt to address the increased retention rates frequently observed in online math education programs (Miller, 2019). It also can foster an environment of autonomy and deliver good learning experiences (Cho et al., 2021). For this reason, students agreed to incorporate online learning into their future courses, indicating that they had a good impression of online learning (Akuratiya & Message, 2020).

Effective implementation of a positive learning environment that delivers a successful academic experience relies heavily on the teacher's guidance and teaching methods (Kim et al., 2019). As a result, in order to employ interaction as a method for mediating and facilitating learning, instructors must exhibit specialized abilities. The online setting is very different from the face-to-face classroom, and teachers must learn new and extra skills to properly employ real-time engagement online (Moorhouse et al., 2021). They may also utilize a systematic approach to assist students in discovering concepts and lecture approaches to guide students who still need clarification about how to solve difficulties (Putra et al., 2020). Teachers were required to have three competencies – technology skills, online environment management competencies, and online teacher interactional competencies to provide more insights into the demands of instructors who are forced to teach synchronously online (Moorhouse et al., 2021).

2. Methodology

2.1. Research Design

This study employed quantitative research using a descriptive-correlational design. The research method was used to explain phenomena, attitudes, views, behaviors, and other identified factors by gathering numerical data and analyzing it statistically (Kapici & Akçay, 2016). The variables and the relationships that arise naturally between and among them are described in descriptive correlational design (Sousa et al., 2007). The descriptive-correlational design was appropriate for this study, which determined the students' academic performance at Misamis University.

2.2. Research Setting

The study was conducted at Misamis University, Ozamiz City. Misamis University is a privately owned, non-sectarian, non-profit educational institution founded by Dr. Hilarion Feliciano and Doña Maria Mercado Feliciano in 1929. It has 12 colleges offering 29 programs, including graduate programs, and has complete Basic Education programs. This study focused on the Junior High School Department at Misamis University. The Basic Education Junior High School Department is a four-story building. It has eight sections, with one section for grade seven, two for grade 8, two for grade nine, and three for grade 10. Misamis University uses an online learning modality with Microsoft Teams as the Learning Management System (LMS) to cater to the needs of the students in virtual learning. Microsoft Teams is a Microsoft-created private commercial. Microsoft 365 includes a communication platform where teachers and students conduct their classes asynchronously or synchronously.

2.3. Respondents of the Study

The respondents of the study were the 138 Junior High School students in Misamis University. They were chosen through a purposive sampling technique. Respondents were chosen using the following criteria: 1) students who are enrolled in the Junior High School Department at Misamis University for the academic year 2021-2022; 2) students who completed their requirements in the first quarter; and 3) students who will give their full consent to serve as

respondents of the study. Before the survey was conducted, the researcher ensured that all those criteria would be met.

2.4. Instruments

The study used the following instruments:

1) Instructional Materials Motivation Survey (IMMS) (Appendix A). This questionnaire was adapted from Huang and Hew (2016)**.** This questionnaire is a five-point Likert scale designed to determine students' level of motivation in instructional materials used by teachers in online learning. The instrument has 36 indicators with four constructs: attention, relevance, confidence, and satisfaction.

In determining the student's level of motivation in instructional materials used by teachers, the following scale was used:

Responses	Continuum	Interpretation
5- Always	4.20-5.0	Very High
4- Often	3.40-4.19	High
3- Sometimes	2.60-3.39	Moderately High
2-Rarely	1.80-2.59	Low
1-Never	1.0-1.79	Very Low

2) Synchronous Classroom Learning Survey (SCLS) (Appendix B). This instrument was adopted and modified by Shernan (2019). It is a 20-item questionnaire with four constructs which are students' attitudes toward the Sync classroom, students' perceptions of the impact of the Sync classroom on their learning, students' perceptions of their classroom interaction in the Sync classroom, and students' comparison between face-to-face classes and Synchronous classes. The scale of the survey responses ranged from Strongly Agree (5) to Strongly Disagree (1).

To determine students' perception of synchronous classroom learning, the following continuum was used:

Responses	Continuum	Interpretation
5- Strongly Agree	4.20-5.0	Very Good
4- Agree	3.40-4.19	Good
3- Neutral	2.60-3.39	Fair
2- Disagree	1.80-2.59	Poor
1-Strongly Disagree	1.0- 1.79	Very Poor

3) Students' Academic Performance in Mathematics. The researcher used documentary analysis using the first quarter grades of the students from their teachers. In determining the academic performance in Mathematics of the students, the following scale was used based on the DepEd grading system:

Rating	Interpretation
90-100	Outstanding (O)
85-89	Very Satisfactory (VS)
80-84	Satisfactory (S)
75-79	Fairly Satisfactory (FS)
74 and below	Did Not Meet Expectation (DME)

2.5. Data Collection

In gathering the data, the researcher asked permission from the College of Education at Misamis University to conduct the study. Moreover, after the approval, the researcher asked permission from the Office of the Principal of Basic Education. After the permits were obtained, the researchers prepared a consent letter for the respondents. The researchers explained the importance of the study to the respondents. The data gathering was conducted on the school premises only. The researchers conducted and administered the survey questionnaires among the study's respondents to ensure complete cooperation with them and easier access for data retrieval. The information obtained was totaled, evaluated, and interpreted.

2.6. Ethical Considerations

To uphold the ethical aspect of this study, the researcher gathered the voluntary participation of the respondents. According to Levine, "Privacy is the freedom an individual has to decide when, how much, and under what conditions private information will be shared with or withheld from others." The respondents were assured that they would not be subjected to harm in any way. Respect for the respondents' dignity was prioritized. The confidentiality agreement is observed to protect everyone's privacy, build trust and rapport with study participants, and maintain ethical practices and the credibility of the procedure for conducting research (Baez, 2002).

Furthermore, misrepresentation and exaggeration of the research's aims and objectives were avoided; all relationships, funding sources, and conflicts of interest were reported. Finally, any communication about the research was done with honesty and transparency, and any misleading information and misinterpretations of primary data findings were avoided. The researcher invited the respondents to sign the informed consent form to confirm their desire to participate, which Armiger defines as a person giving his consent consciously, willingly, intelligently, clearly, and manifestly. Evidence of validity and reliability are required to ensure a measuring instrument's integrity and quality (Kimberlin & Winterstein, 2008). Furthermore, the respondents can withdraw anytime if they find it necessary.

2.7. Data Analysis

The study used the following tools in analyzing the data gathered with the use of Minitab Software:

Mean and standard deviation. These were used in determining the students' level of motivation in instructional materials in mathematics used by teachers, student's perception of synchronous classroom learning, and their academic performance in Mathematics.

Pearson r Product Moment Correlation Coefficient. This was used in exploring the significant relationship between the students' level of motivation in instructional materials in mathematics used by teachers, student's perception of synchronous classroom learning, and their academic performance in Mathematics.

Stepwise Regression Analysis. It was utilized to identify the predictors in the independent variables of the student's academic performance in Mathematics.

3. Results and Discussion

3.1. Student's Level of Motivation in Instructional Materials

Data in Table 1 revealed that, in general, the students' level of motivation in instructional materials was high (M = 3.89; SD = 0.77). They were highly motivated in the instructional materials used by teachers in all areas, as evident in students' highest rating on relevance (M = 4.00; SD = 0.71) and even in lowest rating on confidence (M = 3.67; SD = 0.82). Two areas, satisfaction (M = 3.96; SD = 0.79) and attention (M = 3.92; SD = 0.76) received the first two highest ratings. However, the students rated the confidence factor (M = 3.67; SD = 0.82) lowest.

This means that students were highly motivated with the instructional materials used by teachers in learning Mathematics. They easily relate to the contents of the given materials. It can also be noted that students highly enjoyed completing the subject. They frequently pay attention to the appearance of the materials. Also, students easily understood the subject and were confident to pass.

The findings of the study supported the high level of students' motivation in instructional materials, which brings learning to life by encouraging students to learn. The use of instructional resources in the classroom can improve learning outcomes by assisting the instructor in explaining new ideas more effectively, resulting in increased student mastery of the subjects being taught. They are, however, not ends in themselves but rather means to a goal (Kadzera, 2018). However, Murphy et al. (2020) contradicted the findings of this study that it is more likely that students were dissatisfied with the learning process, making mathematics classes an unpleasant stimulant for them. The discomfort might have been caused by students' low tolerance for ambiguity when studying mathematics, since they may prefer teacher-directed monologic approaches.

Student motivation is a strong driving force for the students to be positively engaged in class discussion. For students to be highly engaged in class discussions, teachers need to consider the instructional materials they use to sustain students' attention and engagement in the discussion. It must capture and hold the student's attention by stimulating

curiosity and varying the presentation style. Therefore, teachers need to employ instructional strategies to motivate students and assist them in concentrating their attention, organizing information for understanding and memorizing, and monitoring and assessing learning.

Table 1. Students' Level of Motivation in Instructional Materials (n = 138)

Constructs	Mean	SD	Remarks
Attention	3.92	0.76	High
Relevance	4.00	0.71	High
Confidence	3.67	0.82	High
Satisfaction	3.96	0.79	High
Overall Motivation	3.89	0.77	High

Note: Motivation Scale 4.20-5.0 (Very High); 3.40-4.19 (High); 2.60-3.39 (Moderately High); 1.80-2.59 (Low); 1.0-1.79 (Very Low)

3.2. Students' Perception in Synchronous Classroom Learning

Data in Table 2 revealed that, in general, the students' perception of synchronous classroom learning was good (M =3.58; SD = 0.89). Only the area on students' comparison between face-to-face and synchronous classes received a fair rating (M = 3.23; SD = 1.05). The last three areas, students' attitudes toward the sync classroom (M = 3.78; SD = 0.85), the impact of the synchronous classroom on students' learning (M = 3.76; SD = 0.75), and the students' perceptions of interaction (M = 3.53; SD = 0.92) received a good rating from the students.

This means that students enjoyed and felt comfortable in the synchronous classroom structure. In terms of the impact of the synchronous classroom on students' learning, the synchronous classroom improved their learning. Also, the synchronous classroom structure increased their interaction with their professor and classmates in and outside class. However, students spent less time studying in the synchronous classroom than the face-to-face.

Students were extremely comfortable with online learning since it allowed them to be innovative by utilizing computer technology (Bali & Liu, 2018). Students had excellent digital abilities to successfully accomplish academic work and learning activities (Kim et al., 2019). Synchronous online learning's key advantages include real-time interpersonal interactions, the use of natural language, and quick feedback (Blau et al., 2017). These characteristics help reduce the gap between online and face-to-face learning and create a sense of customization (Hrastinski, 2010). Students value the learning experience, good outcomes, and the performance they receive when taught in a synchronous online setting (Ogbonna et al., 2019). Furthermore, synchronous learning improves learners' commitment and task motivation (Hrastinski, 2008).

For the students to have a very good perception of synchronous classroom learning, teachers should create an environment where students feel safe and comfortable when learning. It is important that the online classroom allows them to access the teaching and learning materials anytime and anywhere in order to improve their knowledge and skills. When it comes to student engagement, it is critical that each of them be able to speak and interact with the instructor and classmates in and out of class and feel comfortable chatting with others. Teachers need to promote active engagement in online class discussions, offer opportunities for writing assignments, and provide frequent constructive feedback. This shared responsibility encourages students to stay engaged and connected to the subject matter, their classmates, and themselves as learners.

Table 2. Students' Perception in Synchronous Classroom Learning (n = 138)

Constructs	Mean	SD	Remarks
Students Attitudes toward the Sync Classroom	3.78	0.85	Good
Impact of the Sync Classroom on Students' Learning	3.76	0.75	Good
Students' Perceptions of Interaction	3.53	0.92	Good
Students' Comparison between face-to-face and Sync Classes	3.23	1.05	Fair
Overall Perception	3.58	0.89	Good

Note: Perception Scale 4.20-5.0 (Very Good); 3.40-4.19 (Good); 2.60-3.39 (Fair); 1.80-2.59 (Poor); 1.0-1.79 (Very Poor)

3.3. Students' Academic Performance in Mathematics

The student's academic performance (Table 3) was generally very satisfactory (M = 85. 45). Written and performance tasks were used to assess students' academic performance in mathematics. Written tasks such as quizzes, assignments, and reflections were equivalent to 50% of the grade. Performance tasks are comparable to a percentage, which includes attendance and classroom participation. The findings indicate that the students perform very satisfactorily in their online learning.

This signifies that students perform well in Mathematics. Teachers must make an effort to utilize educational tactics that can stimulate students' attention. They can also boost student involvement by using a variety of instructional tactics. As a result, teachers should employ the learner-centered learning strategy. Efforts to improve student involvement must be treated seriously.

Furthermore, students must develop their problem-solving abilities. Problem-solving is tough for students. Thus, teachers must focus on teaching concepts in order to convey the application more easily.

It is vital to increase intrinsic motivation and students' perceptions of their own task-solving abilities by creating engaging educational environments. Students who are more driven and have a more positive approach will attempt harder and accomplish greater performance in Mathematics (Glavas & Stascik, 2017). In this sense, teachers play a key role in promoting the students' interest in learning and achieving academic goals (Oriol-Granado et al., 2017). For this reason, it is necessary to analyze the emotional and motivational processes inherent to the students toward math classes as well as the influence on learning strategies and academic achievement (Saiz & Fernández, 2012).

For students to achieve outstanding grades, they need to be more active, attentive, and engaged in class discussion. They should also meet the assignments' deadline, participate in every activity, and study lessons in Mathematics. In addition, teachers should emphasize the mastery of the concepts taught, show substantial examples for the students to understand and emulate, and show comprehension of the problems on the part of the students. Teachers should have the information, abilities, and resources to offer students the finest learning experiences imaginable. As a result, every student will be able to improve their learning and themselves.

Table 3. Students' Academic Performance in Mathematics (n = 138)

Students' Academic Performance in Mathematics	Frequency	Percent
Outstanding (O)	42	30.43
Very Satisfactory (VS)	33	23.91
Satisfactory (S)	27	19.57
Fairly Satisfactory (FS)	25	18.12
Did Not Meet Expectation (DME)	11	7.97
Overall Performance	85. 45	Very Satisfactory

Note: Performance Scale: 90-100 (Outstanding); 85-89 (Very Satisfactory); 80-84(Satisfactory); 75-79 (Fairly Satisfactory); 74 and below (Did not Meet Expectation)

3.4. Relationship Between the Students' Level of Motivation in Instructional Materials and Students' Academic Performance in Mathematics

Pearson Product Moment Correlation Coefficient was used to determine the significant relationship between the student's level of motivation in instructional materials and students' academic performance in Mathematics (Table 4). Data revealed that all four constructs in students' motivation in instructional materials were found to be highly related to student's academic performance in Mathematics, namely: attention ($r=0.28$; $p=0.001$), relevance ($r=0.26$; $p=0.002$), confidence ($r=0.22$; $p=0.009$); and satisfaction ($r=0.33$; $p=0.000$).

This means that areas in instructional materials related to students' motivation, such as attention, relevance, confidence, and satisfaction, correlate with students' academic performance in Mathematics. This indicates that students who find the learning materials appealing are more likely to perform well in Mathematics. Furthermore, students who found the content of learning resources such as books and modules relevant to their interests performed higher in Mathematics. Similarly, students who found the instructional materials easier to grasp and those who were entertained by the subject performed higher in Mathematics.

Instructional materials used in studies increased attention and positively affected motivation (Dinçer & Doğanay, 2017). Getting students' attention at first sight and maintaining their attention was required to maintain motivation (Li & Keller, 2018). Students' satisfaction may be described as a short-term attitude arising from an appraisal of the educational experience, services, and facilities provided to students (Weerasinghe & Fernando, 2017)—Confidence results from fear of failing and a desire to succeed. Students must believe in their ability to succeed. However, no data that would allow a remark on the influence of confidence were found in the analyzed research. For example, while Hu, Shewokis, Ting, and Fung (2016) claimed that online materials were inefficient at instilling confidence because they lacked face-to-face human connection, their study did not provide any evidence to support this claim.

It is not expected that the instructional materials should take the place of the teacher in the classroom; rather, they should be suitable resources that, when effectively used, enhance students' learning. These materials might meet a specific need, such as aligning with the student's motives or values or connecting to familiar experiences. Moreover, teachers have to create instructional materials that are easier to understand. Good content organization helped students be confident in learning the subject. These materials will help the teacher in teaching to promote good teaching and learning. Such materials provide opportunities for the teacher and learners to enjoy meaningful and interesting classrooms.

Table 4. Relationship Between the Students' Level of Motivation in Instructional Materials and Students' Academic Performance in Mathematics

Variables	*r* value	Relationship Strength	*p*-value	Remarks
Attention and Performance	0.28	Weak	0.001	Highly Significant
Relevance and Performance	0.26	Weak	0.002	Highly Significant
Confidence and Performance	0.22	Weak	0.009	Highly Significant
Satisfaction and Performance	0.33	Weak	0.000	Highly Significant

Note: Relationship Strength Scale: 1.00 (Perfect); 0.80-0.99 (Very Strong); 0.60-0.79 (Strong); 0.40-0.59 (Average); 0.20-0.39 (Weak); 0.01-0.19 (Very Weak); 0.00 (No Relationship)
Probability Scale: $p < 0.01$ (Highly Significant); $p < 0.05$ (Significant); $p > 0.05$ (Not Significant).

3.5. Relationship Between the Students' Perception in Synchronous Classroom Learning and Students' Academic Performance in Mathematics

Data revealed that two of the areas in students' perception of synchronous classroom learning were found to be related to students' academic performance in Mathematics, namely, students' attitudes toward the synced classroom ($r= 0.22$; $p= 0.009$) and the impact of the synchronous classroom on students' learning ($r=0.22$; $p=0.11$). However, the other two areas were not related to academic performance in Mathematics, namely, students' comparison between face-to-face and synchronous classes ($r= 0.05$; $p= 0.571$) and the students' perceptions of interaction ($r= 0.12$; $p= 0.149$).

This means that students' attitudes toward synchronous classrooms and the impact of synchronous classroom learning on students' learning are the areas that influence students' academic performance in Mathematics. This suggests that students who enjoyed and felt comfortable with the synchronous classroom arrangement were more likely to achieve well in Mathematics. Furthermore, students who found that the synchronous classrooms boosted their learning in class performed better in Mathematics. However, students' perceptions of interaction and comparisons between face-to-face and synchronous classrooms are unrelated to academic achievement, implying that they do not correlate with students' academic performance in Mathematics.

Synchronous classrooms are one of the main components of synchronous settings that share similarities with real classrooms (Cakiroglu, 2014). Students found the Synchronous classroom adaptable and user-friendly (Shernan, 2020). A characteristic of the synchronous approach was that such interactions were carried out flexibly and did not have to be at the same time by maximizing discussion forums or independent learning (UI, 2020). The students also need habits of persistence, curiosity, and self-confidence when they have online classes. The students could develop

the habits through learning to solve problems (Mairing, 2018). Students could also improve learning outcomes and higher-order thinking skills through learning (Apriliana et al.).

Teachers have to prepare with skills and expertise in leveraging technologies to create online activities. Most significantly, they must comprehend the nature of the learners, including their learning style and multiple intelligences, to develop activities and techniques that meet the demands of the learners. To obtain students' satisfaction, teachers need to spend more time and effort providing instructional materials and activities. They need to integrate them with student confidence elements since they can aid in improving learning performance.

Table 5. Relationship Between the Students' Perception in Synchronous Classroom Learning and Students' Academic Performance in Mathematics

Variables	*r* value	Relationship Strength	*p*-value	Remarks
Students Attitudes toward the Synchronous Classroom and Performance	0.22	Weak	0.009	Highly Significant
Impact of the Synchronous Classroom on Students' Learning and Performance	0.22	Weak	0.011	Highly Significant
Students' Perceptions of Interaction and Performance	0.12	Very Weak	0.149	Not Significant
Students' Comparison between face-to-face and Synchronous Classes and Performance	0.05	Very Weak	0.571	Not Significant

Note: Relationship Strength Scale: 1.00 (Perfect); 0.80-0.99 (Very Strong); 0.60-0.79 (Strong); 0.40-0.59 (Average); 0.20-0.39 (Weak); 0.01-0.19 (Very Weak); 0.00 (No Relationship)
Probability Scale: $p < 0.01$ (Highly Significant); $p < 0.05$ (Significant); $p > 0.05$ (Not Significant

3.6. Predictors of Student's Academic Performance

Regression analysis was used to explore the predictor of students' academic performance in Mathematics, which resulted in p-values lesser than 0.01 alpha level. Data revealed that among the four factors in the students' level of motivation in instructional materials used by teachers, only one factor- satisfaction (β= 3.187, t= 4.02, p= 0.00) affects students' academic performance in Mathematics. Other factors like attention, relevance, and confidence do not affect the student's academic performance in Mathematics. These factors are not predictors of students' academic achievement in Mathematics.

Table 6. Predictors of Student's Academic Performance

Predictors	Coef	SE Coef	T-Value	P-Value
Constant	72.23	3.19	22.62	0.0000
Satisfaction	3.182	0.792	4.02	0.0000
Adjusted r^2	9.96%			
F-value	16.16			
P-value	0.0000			
Dependent Variable: Satisfaction				
Academic Performance = 72.23 + 3.182 Satisfaction				

The regression equation (Academic Performance=72.23 + 3.182 Satisfaction) indicates that for every unit increase in students' satisfaction with instructional materials used by teachers, the student's academic performance also increased by 3.182. The data with $(r^2 = 9.96\%)$ shows that only 9.96 percent of students' academic performance in Mathematics is attributed to students' level of motivation in instructional materials used by teachers in the area of satisfaction. The remaining 90.04 percent is due to other factors not included in the research. As a result, future researchers must investigate the characteristics that may predict students' academic progress in Mathematics.

Student satisfaction is one quality measure in higher education, providing access to funds and impacting student performance (Rossini et al., 2021). Although there is agreement that student satisfaction with their academic studies is

an important aspect of academic achievement, little is known about the factors influencing this important outcome variable (Wach et al., 2016).

Teachers need to improve their creativity in making instructional materials. They must be familiar with using technology to create classes, interactive activities, tests, projects, and other duties. Teachers have to fulfill students' satisfaction through their instructional materials. However, they must also consider other factors, such as attention, relevance, and confidence, that will make the students participate in class.

4. Conclusions and Recommendations

Students have a high level of motivation in instructional materials used by teachers that they find the given materials highly appealing, they easily relate to the contents of the given materials, enjoy completing the subject, easily understand the subject, and are confident to pass. Additionally, students' perception of synchronous classroom learning is good, indicating they are comfortable and enjoy it. Students perform satisfactorily in Mathematics. Students' attention, relevance, confidence, and satisfaction with teachers' instructional materials help them perform better in mathematics. Moreover, students' good perception of synchronous classroom learning enables them to perform higher in Mathematics. The student's academic performance in Mathematics is equated with their satisfaction with the instructional materials used by the teacher.

Based on the findings and conclusion of the study, the following are the recommendations: Teachers need to think about the instructional materials they will employ to keep students' attention and interest in the class discussion. They need to ensure that it will capture the student's interest and keep it by generating curiosity and altering the presenting manner. Teachers can establish a learning environment in which students feel secure and comfortable. It is necessary that online learning provides them with the ability to access teaching and learning resources at any time and from any location in order to develop their knowledge and abilities. Teachers must have the expertise, techniques, and skills to provide students with the optimum learning experiences. In this way, all students can boost their knowledge and personalities to perform best in Mathematics. Teachers utilize suitable learning tools that, when used properly, improve students' learning. They need to design instructional materials that are easier to understand since they will aid the teacher in promoting successful teaching and learning. Such instructional materials allow teachers and students meaningful and engaging classroom experiences. Teachers understand the nature of their students, including their learning styles and multiple intelligences, to design activities and strategies that match their needs. Teachers ensure that their teaching resources satisfy students. They must be comfortable using technology to produce classes, interactive activities, assessments, projects, and other responsibilities to boost their creativity in creating instructional materials.

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