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STUDENTS' ATTITUDES TOWARDS MATHEMATICS SUBJECT IN ADOPTION OF MODULAR LEARNING

JASPER O. LABENDIA^{1*}, EMILIE S. ESTELLOSO²

¹Student Researcher, College of Education, Arts and Sciences Department, University of Southern Mindanao-Kidapawan City Campus

²Thesis Adviser, College of Education, Arts and Sciences Department, University of Southern Mindanao-Kidapawan City Campus

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*Corresponding author: JASPER O. LABENDIA

Student Researcher, College of Education, Arts and Sciences Department, University of Southern Mindanao-Kidapawan City Campus

Abstract

This study was conducted to find out the students' attitudes towards mathematics subjects in adoption of modular learning. The respondents were the students under the College of Education, Arts, and Sciences (CEAS), and College of Technology (CoT) in Second Semester S.Y. 2020-2021. The study was descriptive-correlation research method. The questionnaire used were a self-made survey questionnaire which has four categories of attitudes namely cognition, affect, behavioral intention, and evaluation. The data were gathered through online and analyzed with inferential statistics. Based on the findings, the student's attitude was interpreted as moderately negative/positive attitude towards mathematics subject in adoption of modular learning. It also revealed that there are significant differences on the cognition and affect attitudes between male and female, and students from CEAS and CoT. Thus, null hypothesis was accepted at 0.05 level of significance. However, in terms of behavioral intention, evaluation and overall attitudes revealed that there are no significant differences which null hypothesis were accepted.

Keywords: Student's Attitude, Modular Learning, Mathematics subjects

1. Introduction

In real life, mathematics has been involved wherever we go, whatever we do, whenever we begin. In education, mathematics is one of the important ingredients which equip students in mathematical skills. Through this, students can manipulate things without any difficulties.

Learners experience hardships in learning mathematics since they have to comprehend the theories and memorizing the formula (Yushua, 2006). Recent studies of Mazana, Montero & Casmir (2019) discovered that students' attitudes towards mathematics subject initially reveals positive attitudes, but their attitude becomes less positive as the students proceed to higher levels of education. However, students now are facing the challenges of combining learning mathematics in adapting modular method as to balance their various learning styles. According to Bickerstaff, Fay & Trimble (2016) a modularized curriculum is intended to give students enhanced opportunities for mastery in which this engages learners into guided and independent learning activities at their own pace and time. In this case, students-built challenges more than before and to perform self-responsibility but students are not commonly used to it. In many of the traditional approach, students gain knowledge from the instructor-led method that includes queries and conversation, social interaction, and the ability to learn from others (Wan Ahmad, Shafie & Janier, 2008).

For these justifications, the researcher wanted to determine the student's attitude towards mathematics subjects using modular learning approach.

Objectives of the Study

This study was generally determined the Students' Attitude towards Mathematics subject in adoption of modular learning. Specifically, this aimed to:

1. Determine the sex and college profile of the students;
2. Determine the male and female attitudes towards mathematics subject in adoption of modular learning;
3. Determine the students' attitude of College of Education, Arts, and Sciences (CEAS) and College of Technology (CoT) towards mathematics subject in adoption of modular learning;
4. Find out the significant difference on the cognition attitude between male and female towards mathematics subject in adoption of modular learning;
5. Find out the significant difference on the affect attitude between male and female towards mathematics subject in adoption of modular learning;
6. Find out the significant difference on the behavioural intention attitude between male and female towards mathematics subject in adoption of modular learning;
7. Find out the significant difference on the evaluation attitude between male and female towards mathematics subject in adoption of modular learning;
8. Find out the significant difference on the cognition attitude between CEAS and CoT students towards mathematics subject in adoption of modular learning;
9. Find out the significant difference on the affect attitude between CEAS and CoT students towards mathematics subject in adoption of modular learning;
10. Find out the significant difference on the behavioural intention attitude between CEAS and CoT students

towards mathematics subject in adoption of modular learning;

11. Find out the significant difference on the evaluation attitude between CEAS and CoT students towards mathematics subject in adoption of modular learning;
12. Find out the significant difference on the overall attitude between male and female students towards mathematics subject in adoption of modular learning;
13. Find out the significant difference on the overall attitude between CEAS and CoT students towards mathematics subject in adoption of modular learning.

Hypotheses of the Study

Ho1: There is no significant difference on the cognition attitude between male and female towards mathematics subject in adoption of modular learning.

Ho2: There is no significant difference on the affect attitude between male and female towards mathematics subject in adoption of modular learning.

Ho3: There is no significant difference on the behavioral intentions attitudes between male and female towards mathematics subject in adoption of modular learning.

Ho4: There is no significant difference on the evaluation attitude between male and female towards mathematics subject in adoption of modular learning.

Ho5: There is no significant difference on the cognition attitude between CEAS and CoT students towards mathematics subject in adoption of modular learning.

Ho6: There is no significant difference on the affect attitude between CEAS and CoT students towards mathematics subject in adoption of modular learning.

Ho7: There is no significant difference on the behavioral intentions attitudes between CEAS and CoT students towards mathematics subject in adoption of modular learning.

Ho8: There is no significant difference on the evaluation attitude between CEAS and CoT students towards mathematics subject in adoption of modular learning.

Ho9: There is no significant difference between male and female overall attitudes towards mathematics subject in adoption of modular learning.

Ho10: There is no significant difference between CEAS and CoT students overall attitudes towards mathematics subject in adoption of modular learning.

2. Methodology

Research Design

The researcher was employed descriptive-correlational research method to determine the students' attitude towards mathematics subject in adoption of modular learning and to find out its significant difference. Descriptive research method describes a population, situation or phenomenon that is being studied and correlational research method measures two variables, understand and assess the statistical relationship between them with no influence from any extraneous variable (Sousa, Driessnack, and Mendes, 2007).

Respondents of the Study

The respondents of this study were the students under the College of Education, Arts, and Sciences (CEAS), and College of Technology (CoT) of Second Semester S.Y. 2020-2021. There had been sixty-four (64) respondents. Each college would have thirty-two representatives which be composed of sixteen (16) males and sixteen (16) females. The respondents were the students that had undergone Mathematics in the Modern World (GE4) using modular learning approach. The researcher employed random sampling procedure.

Research Instruments

The researcher used a self-made survey questionnaire that had been validated by three (3) academic experts. The questionnaire had a mean score of 4.73, which implies that this is a very highly valid and recommended. This questionnaire contains four (4) components namely cognition, affect, behavioral intention, and evaluation. It utilized a Likert Scale which measures student's attitude, opinions, or perceptions. The scale assumes that the strength/intensity of an attitude is linear. It has a five (5)-point agreement scale used to measure respondent's agreement with various statements.

Statistical Tools

The data was analyzed, tabulated and interpreted using frequency distribution, percentage count and weighted to determine the students' attitudes towards mathematics subject in adoption of modular learning. To test the hypothesis, an independent sample t-test was utilized.

3. Results and Discussion

Sex and Profile of students

Table 1 show the sex and college profile of students. Out of the 94 respondents gave a usable data, 64 respondents had been selected to use their data, 32 or 50% of them were coming from College of Technology (CoT) and 32 or 50% of the respondents were from College of Education, Arts and Sciences (CEAS). In terms of sex, in CoT there were 16 or 50% of the male and female respondents. Likewise, the CEAS had also 16 or 50% male and female respondents.

Table 1. The Sex and College Profile of students.

	Male		Female		Total
	F	%	f	%	
CEAS	16	50	16	50	32
CoT	16	50	16	50	32
				Total respondents	64

Male and Female Attitudes towards Mathematics Subject in Adoption of Modular Learning

Table 2.1 shows the male attitudes towards mathematics subject in adoption of modular learning. The data revealed that Cognition got the weighted mean of 2.68 or Slightly Not True which students are slightly conformed to the feelings/emotions as describes. It reflects Low Negative Attitudes. Moreover, the other categories of attitude such as Affect, Behavioral Intention, and Evaluation which the statements were rated as Moderately True with the weighted mean of 2.99, 3.18, and 3.25 respectively. The students are averagely conformed to the feelings/emotions as describes. Thus, they project Moderately Negative/Positive Attitude. Further, the total mean of the Male attitudes towards the mathematics subject in adoption of modular learning got 3.02 or interpreted as Moderately Negative/Positive Attitude.

The results supported by Aksan (2021) that the used of modular distance method faces little difficulty. Lana, et. al. (2014) in their study said that male students choose to study independently compared the female students. Moreover, "doing mathematics" is a successful way of comprehending why mathematics is primarily male-dominated task according to Mendick (2015). Sahni (2012) said that boys have a stronger grasp of concepts and facts. On the other hand, Cabrera (2020) pointed out that 21st Century Skills like flexibility, initiative, productivity and social skills is also developed along with the outcomes of the curriculum. Furthermore, in mathematics, modular distance learning technique has a beneficial influence on students (Aksan, 2021).

Table 2.1. Male Attitudes towards Mathematics Subject in Adoption of Modular Learning

Student's Attitude	\bar{x}	Verbal Description	Interpretation
Cognition	2.68	Slightly Not True	Low Negative attitude
Affect	2.99	Moderately True	Moderately Negative/Positive attitude
Behavioral Intentions	3.18	Moderately True	Moderately Negative/Positive attitude
Evaluation	3.25	Moderately True	Moderately Negative/Positive attitude
Total Mean	3.02	Moderately True	Moderately Negative/Positive attitude

Legend:

Range	Rating	Verbal Description	Interpretation
4.51–5.00	5	Very True	Highly Positive Attitude
3.61–4.50	4	Mostly True	Positive Attitude
2.71–3.60	3	Moderately True	Moderately Negative/Positive Attitude
1.81–2.70	2	Slightly Not True	Low Negative Attitude
1.00–1.80	1	Not True	Highly Low Negative Attitude

Table 2.2 shows the female attitudes towards mathematics subject in adoption of modular learning. The result revealed that Cognition aspect got 2.40 and describes as Slightly Not True in which students slightly conformed to the feelings/emotions defines. It reflects Low Negative

Attitudes. However, Affect, Behavioral Intention and Evaluation aspects got the weighed mean of 3.39, 2.95 and 3.39 respectively which students averagely conformed to the feelings/emotions describes. Thus, it reflects Moderately Negative/Positive Attitudes. Likewise, the female attitudes towards mathematics subject in adoption of modular learning got total mean of 3.00 and interpreted as Moderately Negative/Positive Attitudes as well.

Dangle & Sumaoang (2020) stated that one of the most significant issues encountered in the implementation of modular distance learning is the large amount of tasks and exercises in each module and sufficient time to answer all the exercises in the modules with in a scheduled given. According to Langat (2015) students generally have a positive attitude towards mathematics if they show that they like, enjoy and anticipate mathematics lessons, and they do not despise the subject as is commonly assumed, but rather have positive views toward it. As cited by Unwalla (2020) females have been shown to be more self-disciplined, finish things on time, and to be more focused than males. Thus, females have superior study habits than males. Although, many students struggling to cope up in their lessons using modular learning but Underhill (1988) indicated that intrinsic students are motivating themselves because of the understanding they create itself.

Table 2.2. Female Attitudes towards Mathematics Subject in Adoption of Modular Learning

Student's Attitude	\bar{x}	Verbal Description	Interpretation
Cognition	2.40	Slightly Not True	Low Negative attitude
Affect	3.39	Moderately True	Moderately Negative/Positive attitude
Behavioral Intentions	2.95	Moderately True	Moderately Negative/Positive attitude
Evaluation	3.24	Moderately True	Moderately Negative/Positive attitude
Total Mean	3.00	Moderately True	Moderately Negative/Positive attitude

Legend:

Range	Rating	Verbal Description	Interpretation
4.51–5.00	5	Very True	Highly Positive Attitude
3.61–4.50	4	Mostly True	Positive Attitude
2.71– 3.60	3	Moderately True	Moderately Negative/Positive Attitude
1.81–2.70	2	Slightly Not True	Low Negative Attitude
1.00– 1.80	1	Not True	Highly Low Negative Attitude

Students' Attitudes of College of Education, Arts and Sciences and College of Technology towards Mathematics Subject in Adoption of Modular Learning

Table 3.1 shows the students' attitudes of College of Education, Arts, and Sciences (CEAS) towards mathematics subject in adoption of modular learning. The data revealed that Cognition aspects of the students were reflects Low Negative Attitude with the weighted mean of 2.41. The students are slightly conformed to the feelings/emotions describe. However, the students have Moderately Negative/Positive Attitudes on the aspects of Affective, Behavioral Intention and Evaluation with the weighted mean of 3.37, 3.12, and 3.01 respectively. The students marked the statements with Moderately True which they averagely conformed to the feelings/emotions describes. Further, the result shows that the total mean is 2.98 and interpreted as Moderately Negative/Positive Attitude.

According to Sahni (2012) Science students also do better in terms to reading a wide range of books and taking notes. On their own, they are significantly better at completing a work. Arts students should be taught how to increase their concentration. They must demonstrate how to study a wide range of subjects in order to acquire different levels of cognition and create objectives for accomplishing certain academic assignments. Langat (2015) said that attitude towards mathematics are influenced by judgments and perception about mathematics, learning capabilities, mathematical competency, and recent performance and placements in mathematics in school.

Having a positive attitude about mathematics entails appreciating studying with it and believing in one's own capacity to do so (Robson, 1996). Apparently, modular learning at this case will literally expose to a new set of facts (West, 2017). However, students can choose in what order they wish to study the material (Fenwick, 2014).

Table 3.1. Students Attitudes of College of Education, Arts and Sciences (CEAS) towards Mathematics Subject in Adoption of Modular Learning.

Student's Attitude	\bar{x}	Verbal Description	Interpretation
Cognition	2.41	Slightly Not True	Low Negative attitude
Affect	3.37	Moderately True	Moderately Negative/Positive attitude
Behavioral Intentions	3.01	Moderately True	Moderately Negative/Positive attitude
Evaluation	3.11	Moderately True	Moderately Negative/Positive attitude
Total Mean	2.98	Moderately True	Moderately Negative/Positive attitude

Legend:

Range	Rating	Verbal Description	Interpretation
4.51–5.00	5	Very True	Highly Positive Attitude
3.61–4.50	4	Mostly True	Positive Attitude
2.71–3.60	3	Moderately True	Moderately Negative/Positive Attitude
1.81–2.70	2	Slightly Not True	Low Negative Attitude
1.00–1.80	1	Not True	Highly Low Negative Attitude

Table 3.2 shows the students' attitudes of College of Technology (CoT) towards mathematics subject in adoption of modular learning. The data revealed that the Cognition Aspect got the weighted mean of 2.66 or Slightly Not True. The students slightly conformed to the feelings/emotions describes which shows Low Negative Attitudes. Moreover, the other category of attitudes such as Affect, Behavioral Intention and Evaluation got Moderately Negative/Positive attitude of students with the weighted mean of 3.00, 3.12, and 3.39 respectively. The students averagely conformed to the feelings/emotions described. Further, the total mean of students' attitudes of College of Technology (CoT) towards mathematics subject in adoption of modular learning was 3.04 and reflects Moderately Negative/Positive Attitudes.

Students' attitude towards mathematics influences their significant function in learning mathematics according to Robson (1996). Langat (2015) added that attitude towards mathematics are influenced by judgments and perception about mathematics, learning capabilities, mathematical competency, and recent performance and placements in mathematics in school.

Inkson and Smith (2001) identified that there are several 'risk factors' that should be considered when determining if a student may require additional support if studying under Self-paced Learning settings. When students experience modular learning a challenge, they enhancing their performance in independent learning because they are motivated and directly engaged in the different task presented in the module (Valencia, 2020).

Table 3.2. Students Attitudes of College of Technology (CoT) towards Mathematics Subject in Adoption of Modular Learning.

Student's Attitude	\bar{x}	Verbal Description	Interpretation
Cognition	2.66	Slightly Not True	Low Negative attitude
Affect	3.00	Moderately True	Moderately Negative/Positive attitude
Behavioral Intentions	3.12	Moderately True	Moderately Negative/Positive attitude
Evaluation	3.39	Moderately True	Moderately Negative/Positive attitude
Total Mean	3.04	Moderately True	Moderately Negative/Positive attitude

Legend:

Range	Rating	Verbal Description	Interpretation
4.51–5.00	5	Very True	Highly Positive Attitude
3.61– 4.50	4	Mostly True	Positive Attitude
2.71–3.60	3	Moderately True	Moderately Negative/Positive Attitude
1.81–2.70	2	Slightly Not True	Low Negative Attitude
1.00–1.80	1	Not True	Highly Low Negative Attitude

Test of Difference on the Male and Female Students' Attitude towards Mathematics Subject in Adoption of Modular Learning

Table 4.1 shows the test of difference on the male and female students' attitude towards mathematics subject in adoption of modular learning. The data revealed that Cognition and Affect got t value and p value of 3.38 and 0.03, -4.83 and 0.00 which the null hypothesis was rejected. However, the other categories of attitude like Behavioral Intention, and Evaluation got the t value and p value of 1.42 and 0.23, -0.22 and 0.84. The result indicates that there is no significant difference between the male and female attitudes, which the null hypothesis was accepted.

Moreover, the overall t value and p value of all categories obtained 0.13 and 0.90 which the null hypothesis was accepted.

The result implies that in the Cognition (student's belief, theories, expectancies and perceptions) and Affect category (student's feeling such as fear, liking or anger) differ the attitudes of male and female. However, behavioral intention (student's goal, aspiration and expected responses) and evaluation (attribution of the degree of goodness or badness) were more or less similar to both male and female attitudes.

According to Ghasemi and Burley (2019) said that modular learning has a beneficial impact on math students and practically there has been no gender difference in mathematics involvement. Further, Voinea and Purcaru (2015) said that individualized learning plans in a constructivist approach, using self-directed learning plans helps students overcome particular learning challenges. Students can choose what they prefer in learning methods which they find most convenient, work at their own pace.

Table 4.1 Test of Difference on the Male and Female Students' Attitude towards Mathematics Subject in Adoption of Modular Learning

Students' Profile	t-test	p-value	Decision	Interpretation
Cognition	3.38	0.03	Reject Ho	Significant
Affect	-4.83	0.00	Reject Ho	Significant
Behavioral Intentions	1.42	0.23	Accept Ho	Not significant
Evaluation	-0.22	0.84	Accept Ho	Not significant
Overall	0.13	0.90	Accept Ho	Not significant

Test of Difference on the CEAS and CoT Students' Attitude towards Mathematics Subject in Adoption of Modular Learning

Table 4.2 shows the test of difference on the CEAS and CoT students' attitude towards mathematics subject in adoption of modular learning. The data revealed that Cognition and Affect got t value and p value of -2.60 and 0.05, 5.42 and 0.01 which means that there is significant difference between the students in the College of Education, Arts, and Sciences (CEAS) and College of Technology (CoT) and null hypothesis was rejected.

However, the Behavioral Intention, and Evaluation got the t value and p value of -2.09 and 0.10, -2.29 and 0.08 which the null hypothesis was accepted indicating that there is no significant difference. Further, the Overall t value and p value obtained -0.49 and 0.65 which indicate that the null hypothesis was accepted. It implies that the attitudes towards mathematics subject in adoption of modular learning of both colleges were similar to each other.

In the study of Tahar, Ismail, Zamani and Adnan (2010) mentioned that students taking variety of programs demonstrated that their self-concept has an impact on their attitudes towards mathematics. According to Cabrera (2020) that modular cooperative learning approach in teaching has made significant improvement in the learners' achievement and showed positive effect on the formation of positive attitude towards mathematics.

Table 4.2 Test of Difference on the CEAS and CoT Students' Attitude towards Mathematics Subject in Adoption of Modular Learning

Students' Profile	t-test	p-value	Decision	Interpretation
Cognition	-2.60	0.05	Reject Ho	Significant
Affect	5.42	0.01	Reject Ho	Significant
Behavioral Intentions	-2.09	0.10	Accept Ho	Not significant
Evaluation	-2.29	0.08	Accept Ho	Not significant
Overall	-0,49	0.65	Accept Ho	Not significant

4. Results and Discussion

Summary

This research study was done with the general objectives to determine the sex and college profile of the students, the male and female attitudes towards mathematics subject in adoption of modular learning, and the students' attitude of College of Education, Arts, and Sciences (CEAS) and College of Technology (CoT) towards mathematics subject in adoption of modular learning. It also aimed to determine its significant difference. This study was conducted at University of Southern Mindanao Kidapawan City Campus particularly at College of Education, Arts, and Sciences (CEAS) and College of Technology (CoT) with the sixty-four (64) respondents. The Self-made Survey Questionnaire was utilized to gather the data.

The results of the study revealed that the male and female attitudes towards mathematics subject in adoption of modular learning got Moderately Negative/Positive attitude. And for the colleges, the CEAS and CoT students' attitudes obtained Moderately Negative/Positive Attitude as well. Thus, the test of difference reveals that there is a significant difference in Cognition and Affect category, on the other hand, the Behavioral Intention and Evaluation in male and female attitudes were not differ from each other. In the students from CEAS and CoT the test difference also reveals that there is a significant difference in Cognition and Affect category, likewise, the Behavioral Intention and Evaluation had similar attitudes toward mathematics subject in adoption of modular learning. Thus, the null hypothesis was accepted at 0.05 level of significance.

Conclusion

The study concludes that there are no significant differences on the behavioural intention, evaluation and overall attitudes between male and female, and students from CEAS and CoT towards the adoption of modular learning in mathematics subject. However, on the cognition and affect attitudes shows differences which the null hypotheses are rejected at 0.05 level significance. The student's feeling such as fear, liking or anger, belief, theories, expectancies and perceptions shows different views among the students.

Recommendation

Based on the results of the study, the researcher recommends that;

1. Students should provide a high value in adopting modular learning especially in studying mathematics, whereas this is now the new normal in learning,
2. Teacher should create healthy environment to prevent fears and develop positive outlook in adopting modular learning;
3. Teacher should apply more motivational teaching strategies in order to enhance the interest and desire of the students to adopt modular learning even the difficult courses;
4. The administration may support the professional development of their faculty in terms of new normal approach in teaching strategies.
5. Parents should encourage their children and support them to the new normal set up;
6. Future researcher to conduct the same study to widen the scope of the study by getting respondents from the multiple schools.

5. Appendix

Survey Questionnaire

I. Student's Attitudes towards Adoption of Modular Learning

Direction: Answer the following questions honestly. Please put a check (/) that most closely corresponds to how each statement best describes your feelings. Please answer every item. All data collected will remain confidential and will be used only for this research.

Verbal Description	Interpretation
1 = Not True	The students is not conformed to the feelings/emotions as described in the statement. (Highly Low Negative Attitude)
2 = Slightly True	The student is slightly conformed to the feelings/emotions as described in the statement. (Low Negative Attitude)
3 = Moderately True	The student is averagely conformed to the feelings/emotions as described in the statement. (Moderately Negative/Positive Attitude)
4 = Mostly True	The student is highly conformed to the feelings/emotions as described in the statement. (Positive Attitude)
5 = Very True	The student is highly conformed to the feelings/emotions as described in the statement. (Positive Attitude)

	1	2	3	4	5
Cognition					
When taking up modular learning...					
1. I am able to think clearly when working with mathematical problems.					
2. I am confident to answer the activities without the guidance of the teacher.					
3. I could understand well the lessons even if the teacher is not around.					
4. My curiosity fades away because there are supplementary lessons and activities inside the module.					
5. I am motivated to perform the task/activities given in the module.					
Affect					
When taking up modular learning...					
1. I feel quite unease with my answers because there is no interaction with my subject teacher.					
2. I am bothered with my grades/score since I'm working the activities with my own pace.					
3. I'm not satisfied with my understanding/comprehension towards the lesson.					
4. I feel distressed because I could not meet the expectations of my subject teacher.					
5. I am insecure upon knowing that my classmates perform better than me.					
Behavioral Intentions					
Modular learning...					
1. Gives me a chance to show my capability in answering the activities.					
2. Helps improve my skill in comprehension.					
3. Tends me to feel comfortable in doing activities at my own paced.					
4. Motivates me to solve mathematical problems independently without difficulty.					

5. Lessen probable mistakes because I have enough time to perform the task/activities.					
Evaluation					
When taking up modular learning...					
1. I am able to enhance my interest in acquiring new lessons.					
2. It improves my experiences as I face the new-life situations.					
3. I become responsible with my duties as students.					
4. I am able to accept different learning methodologies.					
5. I do not feel pressure in learning the lesson as it is self-paced in nature.					

6. Authors' Biography

Mr. Jasper O. Labendia is Bachelor of Secondary Education major in Mathematics. He is an active member of the Mathematics Enthusias Society (MES) of University of Southern Mindanao- Kidapawan City Campus.

Dr. Emilie S. Estelloso, Associate Professor III is a faculty researcher of University of Southern Mindanao- Kidapawan City Campus. She is a graduate of Doctor of Philosophy in Education. Dr. Estelloso is the Department Head of Vocational and Technical Education in College of Education, Arts, and Sciences.

References

- Ahmad, W. F., Shafie, A., & Janier, J. (2008). Students' Perception towards Blended Learning in Teaching and Learning Mathematics: Application of Integration Learning application of integration using courseware. Retrieved April 15, 2021 from atcm.mathandtech.org, 2007
- Almalki, A. M. (2015). The Impact Of Teaching Method On Performance In Teaching Mathematics At Tertiary Level. *International Education & Research Journal*. 1, 43-44.
- Aksan, J. A. (2021). Effect of Distance Modular Learning Approach to Academic Performance in Mathematics of Students in Mindanao State university – Sulu Semior High School Amidst Covid – 19 Pandemic. Retrieved September 13, 2021 from <https://www.journalsocialsciences.com/index.php/aoijss/article/view/64>
- Ajzen, I. (2001). Nature and Operation of Attitudes. 52:27–58. doi:10.1146/annurev.psych.52.1.27
- Bajwa, et. al. (nd). A Comparative Study of the Study Habits of the Students from Formal and Non-formal Systems of Education in Pakistan. *International Journal of Business and Social Science*. 2, 175-186.
- Bickerstaff, S., Fay, M. P., & Trimble, M. J. (2016). Modularization in Developmental Mathematics in Two States: Implementation and Early Outcomes. Retrieved April 12, 2021 from <https://ccrc.tc.columbia.edu/publications/modularization-developmental-mathematics-two-states.html>
- Bohner, G. & Dickel, N. (2010). Attitudes and Attitude Change. 62:391–417. doi:10.1146/annurev.psych.121208.131609
- Cabrera, F. R. (2020). Modular Cooperative Learning: A New Approach In Teaching Mathematics. Retrieved April 12, 2021 from <http://sersc.org/journals/index.php/IJAST/article/view/23429>
- Chen, J., Zelem, N., Prieur, J., & Kilannowski, L. (nd). Importance of Students' Attitude Towards Mathematics in Learning and How Game-Based Learning Can Promote Positive Attitude. Retrieved March 27, 2021 from <https://prodigy-legacy-images.s3.us-east-2.amazonaws.com>
- Cherry, K. (2021). Attitudes and Behavior in Psychology. Retrieved March 17, 2021 from <https://www.verywellmind.com/attitudes-how-they-form-change-shape-behavior-2795897>
- Dangle, Y. R. P., & Sumaoang, J. D. (2020). The Implementation of Modular Distance Learning in the Philippine Secondary Public Schools. Retrieved April 12, 2021 from <https://www.dpublication.com/abstract-of-3rd-icate/27-427/>
- Dascalu, M. (2014). Individual Learning. Springer Link. 534, 225. doi: 10.1007/978-3-319-03419-5_2.
- Elci, A. N. (2017). Students' Attitudes towards Mathematics and the Impacts of Mathematics Teachers' Approaches on It. 10, 99-108. doi: 10. 99-108. 10.24193/adn.10.2.8.
- Farooq, M., & Shah, S. (2008). Students' Attitude Towards Mathematics. *Pakistan Economic and Social Review*, 46(1), 75-83. Retrieved April 14, 2021, from <http://www.jstor.org/stable/25825325>
- Fenwick, J.E. (2014). Individualized Learning. Retrieved May 5, 2021 from <https://www.learntechlib.org/p/136568/>
- Fleck, C. (2015). Attitude: History of Concept. *International Encyclopedia of the Social & Behavioral Sciences*, 2, 175–177. doi: 10.1016/B978-0-08-097086-8.03146-9
- Ghasemi, H. & Burley, H. (2019). Gender, affect, and math: a cross-national meta-analysis of Trends in International Mathematics and Science Study 2015 outcomes. Retrieved September 14, 2021 from <https://largescaleassessmentineducation.springopen.com/article/10.1186/s40536-019-0078-1>
- Gokhale, V. & Nanda, N. (2019). The Importance of Having the Right Attitude in Life. Retrieved March 27, 2021 from

<https://www.google.com/amp/s/www.marineinsight.com/life-at-sea/the-importance-of-having-the-right-attitude-in-life/>

19. Haddock, G., & Maio, G. (2004). Contemporary Perspectives On The Psychology Of Attitudes. 1, 488. Doi:10.4324/9780203645031
20. Haladyna, T., Shaughnessy, J. & Shaughnessy, M. (1983). A Causal Analysis of Attitude Toward Mathematics. *Journal for Research in Mathematics Education*, 14, 19-29.
21. Inkson, D. & Smith, E. (2001). Self Paced Learning: A Student Perspective. 28, 124. doi: 10.1007/BF03219746
22. Jazim, Anwar, R. B., & Rahmawati, D. (2017). The Use of Mathematical Module Based on Constructivism Approach as Media to Implant the Concept of Algebra Operation. *International Electronic Journal of Mathematics Education*. 12, 579-583.
23. Kennedy, L. (2019). How Attitudes Towards Math Impacts Students Achievements. Retrieved April 14, 2021 from <https://www.prodigygame.com/main-en/blog/attitude-towards-math/>
24. Lana, A., et. al. (2014). Differences In Studying Habits Between Male And Female Medical Student Of King Abdulaziz University. Retrieved May 6, 2021 from <https://www.researchgate.net/publication/264895128>
25. Langat, A. (2015). Students' Attitudes And Their Effects on Learning And Achievement In Mathematics: A Case Study Of Public Secondary Schools In Kiambu Country, Kenya. Master's Degree Thesis. Kiambu, Kenya.
26. Martinez, P. H., & Pampaka, M. (2017). "I did use to like maths...": Emotional Changes Toward Mathematics During Secondary School Education. 7, 187-220. doi: 10.1016/B978-0-12-802218-4.00007-8
27. Mazana, M. Y., Montero, C. S., & Casmir, R. O. (2019). Investigating Students' Attitude towards Learning Mathematics, 14, 1-25. doi: 10.29333/iejme/3997
28. Mendick, H. (2015). Mathematics Stories: Why do more boys than girls choose to study mathematics at AS-level in England?. Retrieved September 13, 2021 from https://www.researchgate.net/publication/44188385_Mathematics_stories_Why_do_more_boys_than_girls_choose_to_study_mathematics_at_AS-level_in_England
29. Mendezabal, M. J. N. (2013). Study Habits and Attitudes: The Road to Academic Success. *Open Science Repository Education*, doi:10.7392/Education.70081928
30. Mensah, J., Okyere & Kuranchie (2019). Students Attitude towards Mathematics and Performance: Does the teacher attitude matter?. 4. 132-139
31. McLeod, S. A. (2018). Attitude and Behaviour. *Simply Psychology*. Retrieved March 17, 2021 from <https://www.simplypsychology.org/attitude.html>
32. McLeod, S. A. (2019). Attitude Measurement. *Simply Psychology*. Retrieved March 17, 2021 from <https://www.simplypsychology.org/attitude-measurement.html>
33. McLeod, S. A. (2020). The Behaviorist Approach. *Simply Psychology*. Retrieved May 5, 2021 from <https://www.simplypsychology.org/behaviorism.html>
34. McIntic, M. (2021). How attitudes are formed and predict our behavior. Retrieved May 5, 2021 from <https://www.firebrand.marketing/2016/08/how-attitudes-are-formed.>
35. Neelam, et. al. (2015). Study Habits of Undergraduates Students at CAFF in Fiji National University. *International Journal of Agricultural*. 5, 159-166.
36. Ndlovu, V. (2017). Grade 10 – 12 Learners' attitude towards mathematics and how the attitudes affect performance. Master's Degree Thesis. Johannesburg
37. Nouhi, E. M., et. al. (2009). Study habits and skills, and academic achievement of students in Kerman University of medical sciences. Retrieved May 6, 2021 from <https://www.researchgate.net/publication/277731987>
38. Oyedeji, Samson. (2017). The Effects of Students' Motivational Factors on their Attitudes toward Mathematics, 6, 277. doi: 10.11591/ijere.v6i4.10770.
39. Ruffell, M. Mason, J. & Allen, B. (1998). Studying Attitude to Mathematics, *Educational Studies in Mathematics*, 35, 1-18. doi: 10.1023/A:1003019020131
40. Robson, J. (1996). Some Outcomes Of Learning Through Teleconferencing. *Journal Of Instructional Sciences And Technology*, 1(3), Retrieved March 26, 2021 from <https://www.usq.edu.au/electpub/ejist/docs/old/vol1no3/article.htm>
41. Sahni, M. (2012). Study Habits of College Students: Differences with Respect to Gender and Academic Stream. Retrieved May 6, 2021 from http://www.educationindiajournal.org/home_art_avi.php?path=&id=386
42. Siva, V. (2020). 8 Factors That Affect Students' Motivation In Education. Retrieved May 5, 2021 from <https://www.builtbyme.com/students-motivation-in-education/>
43. Simonson, M. (1996). Instructional Technology and Attitude Change. *Handbook of Research on IEducational Communications and Technology* (Chapter 34, pp.985-1106). Nova Southeastern University
44. Slavik, P. M. (2015). Students' Attitudes Toward Mathematics in a Spreadsheet-Based Learning Environment. Doctoral Degree Thesis. Northeast Ohio.
45. Sousa, S. D., Driessnack, M., Mendes, I. (2007). An overview of research designs relevant to nursing: Part 1: Quantitative research designs. Retrieved May 12, 2021 from http://www.scielo.br/scielo.php?script=sci_arttext&pid=SO104-11692007000300022
46. Tahar, N. F., Ismail, Z., N. D., Zamani & Adnan, N. (2010). Students' Attitudes Towards Mathematics: The Use of Factor Analysis in Determining the Criteria. Retrieved September 14, 2021 from <https://cyberleninka.org/article/n/1035058>
47. Unwalla, N. (2020). Comparative Analysis of Study Habits Between Males and Females. *International Journal of Innovative Science and Research Technology* 5, 182-187. doi:10.38124
48. Underhill, R. (1988). Mathematics learners' beliefs: A review. *Focus on Learning Problems in Mathematics*, 10, 55-69.
49. Valencia, M. R. (2020). Modular Approach in Teaching Science 10. Retrieved September 13, 2021 from <https://www.ijtsrd.com/other-scientific-research-area/other/30318/modular-approach-in-teaching-science-10/marsha-r-valencia>

50. Voinea, M. & Purcaru, M. (2015). Individual Learning Plan in Teaching Mathematics for Children with SEN – a Constructivist Approach. 187, 190–195. doi: 10.1016/j.sbspro.2015.03.036
51. West, B. (2017). The Importance of Attitude: How Changing Your Attitude Will Change Your Life. Retrieved April 17, 2021 from <https://bewhitespace.com/blog/2017/03/the-importance-o-attitudes-ho-changing-your-attitude-will-change-your-life/>
52. Yasar, M. (2016). High School Students' Attitudes towards Mathematics. *Eurasia Journal of Mathematics, Science & Technology Education*, 12, 931-945.
53. Yushua, B. (2006). The Effects of Blended E-Learning on Mathematics and Computer Attitudes in PreCalculus Algebra. *King Fahd University of Petroleum and Minerals*, 3, 176.