

Revalidation of the Developed Learning Material in Analytic Geometry and Trigonometry in IDEA Format

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ABSTRACT

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Elective mathematics has been an extra mathematics subject for pilot students of Eduardo Barretto Sr. National High School for quite some time now. Through this, many alumni testified how this helped them understand senior high school and college math. However, the teachers have also been struggling with the resources for specific areas of mathematics, such as Business Math, Statistics, Analytic Geometry, Trigonometry, and Calculus. When the pandemic hit the Philippines, contextualized learning material aligned with the Most Essential Learning Competencies (MELC)

helped elective mathematics teachers. The contextualized learning material was developed from April to August 2020 and was first validated in February 2021



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by the students who participated in the pilot testing. However, following the due process, it was suggested that I revalidate the IDEA-formatted Analytic Geometry and Trigonometry instructional material. It examines Eduardo Barretto Sr. National High School mathematics teachers and SDO Calamba City experts' evaluation of the content's topics, objectives, concepts, directions, and activities and the format's prints, illustrations, design, and layout. Participants' perceptions of learning material were assessed using a 4-point Likert Scale survey. Hence, descriptive quantitative design. Participants were surveyed using a 4-point Likert Scale to assess their learning content impression. The findings reveal that the participants found the format and content of the developed learning material to be very satisfactory. The indicators "localized" and "can be done independently" were viewed as Fair and Satisfactory, respectively. The learning material was enhanced by localizing the activities and giving directions that could facilitate self-learning.

INTRODUCTION

The impact of the disruption in education extends far beyond the realm of education itself and will continue to do so. The global closure of schools prompted the adoption of distance or remote learning as an alternative. However, online learning methods have shown positive outcomes and effectiveness due to their flexible features, including assessment and interaction. Despite this, many students still opt for modular distance learning due to limited resources and a lack of internet connectivity (Palanas et al., 2022).

As COVID-19 brought a drastic change in education, specifically in the Philippines, students, parents, and teachers were still coping with the current situation. Despite the challenges, each one has a significant role. It is still one of the responsibilities of teachers to use strategies that would benefit all without putting the quality at risk. Different distance learning modalities were given as options to move forward (UNESCO, 2021).

A learning delivery modality known as "distance learning" involves instruction between an instructor and geographically separated students. The most used distance learning modalities were printed modular distance learning and online distance learning. Printed modular distance learning entails tailored instruction that uses printed Self Learning Modules (SLMs) and other learning tools such as study guides, activity sheets, textbooks, and learner's materials. Even when students are geographically separated from one another during instruction, the teacher acts as a facilitator by using a variety of internet-accessible technology to encourage active involvement from the learners (DepEd Order No. 12, s. 2020).

Even before the pandemic, one of the challenges encountered by teachers in elective mathematics subjects is having a learning material that can serve as a primary resource. Senol and Cesur (2021) state that electives contribute to students' personal growth by nurturing their individual interests. Such courses provide invaluable knowledge across various areas and allow students to develop specialized knowledge and personal skills. Even without a specific practical objective, these electives can simply satisfy one's curiosity about a particular subject. Thus, the researchers took the opportunity to develop one aligned with MELC and adapted Pivot 4A QUBE'S IDEA in terms of format to attend to the learners' current needs. The learning material contains competencies, discussion, examples with explanations to guide the students independently, activities, and learning tasks.

According to Ranabahu and Tamala (2006), the philosophy of self-learning has developed since the 1970s and early 1980s. It has become one of the main features in education in the late 20th and early 21st centuries. Self-learning goes by many other labels, including self-directed learning and self-access learning. In the implementation of the K+12 Curriculum, teachers become facilitators of learning. Thus, the teachers plan, help, and guide to have a student-centered learning process.

Although the curriculum is material, students find it more engaging when it is contextualized. Teachers' job in curriculum development is to assist students in actively engaging with the material. Active learning creates an engaging learning environment, improving curriculum focus and retention. To teach the curriculum, teachers create lessons that incorporate exercises, case studies, simulations, and experiments. This interactive method integrates real-world experiences with the curriculum to fully engage pupils in learning. Teachers can express their creativity and personalize the learning environment in the classroom through the curriculum development process (Meier, 2018).

In an article DepEd CALABARZON launches on February 6, 2020, 'Pivot 4A QuBe' program, true to its mantra "Excellence is a culture and Quality is a commitment," the Department of Education Region IV-A CALABARZON has launched CALABARZON Pivot 4A QuBe, its flagship program in support to the Sulong EduKalidad program of the Department of Education. The program aims to improve the quality of Basic Education in Southern Tagalog. In line with this, developing learning material is one of the ways to adhere to its goals even in these trying times. The researchers hoped this would allow students to practice learning by doing and teachers to be facilitators even in Modular distance learning. PIVOT 4A QuBe IDEA was integrated better to facilitate students' understanding of Analytic Geometry and Trigonometry.

The researchers aimed to revalidate the developed learning material in Analytic Geometry and Trigonometry in IDEA Format to improve the learning process and provide a reliable reference for elective mathematics teachers and students at Eduardo Barretto Sr. National High School. Educators are strongly urged to examine the intricacies encompassing the design, development, and dissemination phases of instructional modules, ensuring their widespread approval and utmost satisfaction among students and steadfastly upholding the unwavering standards of content and aesthetics in the learning materials (Hamora et al., 2022).

OBJECTIVE OF THE STUDY

The study aimed to revalidate the developed contextualized learning material in Analytic Geometry and Trigonometry that the teachers and pilot students of Eduardo Barretto Sr. National High School can use. Specifically, it aimed to (1) determine the participant's evaluation of the content of the learning material in terms of topics, objectives, concepts, directions, and activities, (2) identify the participants' perception in the format of the learning material in terms of print, illustrations, and design and layout, and (3) improve the learning material based on the findings of the study.

FRAMEWORK

This study takes account of related reading materials from books, journals, magazines, and abstracts, which the proponent of the study deemed helpful in attaining an in-depth discussion of the research problem and development of the research framework. A framework designed to revalidate materials aims to provide a structured approach for evaluating and updating educational materials. This framework serves as a guideline or set of criteria to ensure that materials remain relevant, accurate, and effective over time. It typically involves a systematic review process that considers factors such as educational objectives, alignment with curricula or standards, accuracy of information, pedagogical soundness, and appropriateness for the target audience, inclusivity, and cultural relevance. The revalidation framework helps to maintain the quality and currency of educational materials, ensuring that they continue to meet the needs of learners and educators.

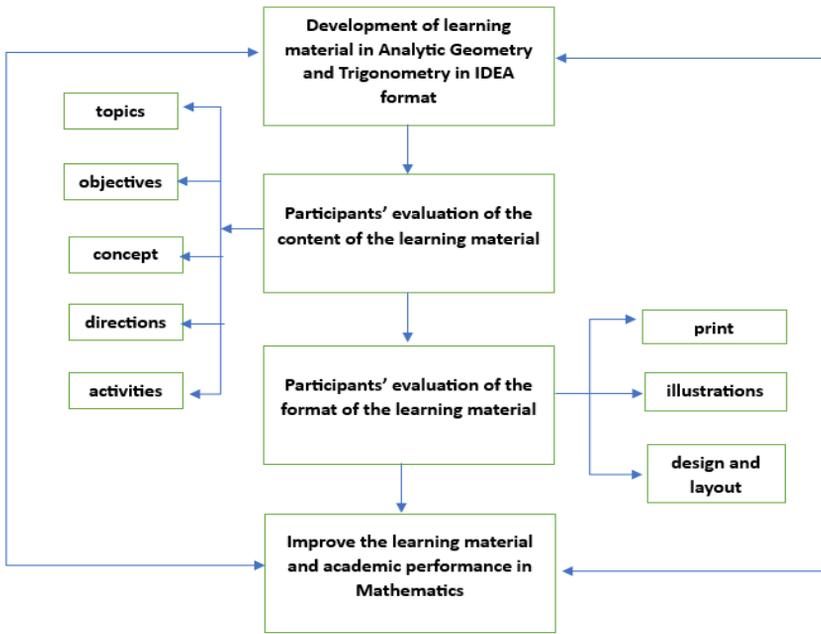


Figure 1. The Framework of the Revalidation of Learning Materials

METHODOLOGY

Research Design

This study used a descriptive quantitative research design. Quantitative research is collecting and analyzing numerical data to describe, explain, predict, or control phenomena of interest (Gay et al., 2012). Descriptive research is called survey research, which collects numerical data to answer questions about the correct status of the subject of the study (Septiani, 2018). This research involves collecting data to test hypotheses or to answer questions about people's opinions about some topic or issue (Gay et al., 2012). Also, Creswell (2012) describes survey research designs as procedures in quantitative research in which investigators administer a survey to a sample or to the entire population to describe the attitudes, opinions, behaviors, or characteristics of the population. From these statements, descriptive quantitative research is considered since this study aimed to seek the participants' evaluation of the content and format of the

developed learning material using a 4-point Likert Scale questionnaire adapted from Evaluation Rating Sheets for Locally Developed Learning Resources, DepEd- Nueva Ecija (DM NO. 167, S. 2021). The contextualized learning material in Analytic Geometry and Trigonometry anchored on PIVOT 4A QUBE's IDEA was revalidated by the mathematics teachers of Eduardo Barretto Sr. National High School and the experts from SDO Calamba City.

Research Site

The research was conducted at Eduardo Barretto Sr. National High School (EBSNHS) located at 143 Jalandoni St. Pansol, Calamba City. EBSNHS provides elective mathematics courses for pilot students in order to equip them with the necessary skills for senior high school mathematics. The school's curriculum is expected to align with the learning materials' objectives, thereby ensuring the content's relevance to the intended recipients' educational requirements. True to its mantra "Sa Galing at Talino, Pandayan ang Barretto," elective mathematics, including topics in Business Math for Grade 7, Statistics for Grade 8, Analytic Geometry and Trigonometry for Grade 9, and Calculus for Grade 10, has also helped the students in both national and international competitions.

Participants

13 mathematics teachers of Eduardo Barretto Sr. National High School and three experts- head teacher, master teacher, and education program supervisor in mathematics from the Schools Division of Calamba City were the participants of this study. Purposive sampling was employed as sampling technique since the development of the contextualized material focuses on mathematical concepts of analytic geometry and trigonometry. The participants were qualified to evaluate based on their knowledge and expertise of the subject matter experiences in teaching and encountering them. According to Acharya et al. (2013), convenience/purposive sampling is where the sample is chosen based on the convenience of the investigator, and often, the respondents are selected because they are at the right place at the right time. It is a form of non-probability sampling in which decisions concerning the individuals to be included in the sample are taken by the researcher based upon a variety of criteria, which may include specialist knowledge of the research issue or capacity and willingness to participate in the research (Rai & Thapa, 2015). Eduardo Barretto Sr. National High School has been the research site for this study, and its teachers serve as participants as this school offers elective subjects to pilot students from grades seven through ten, where Analytic Geometry and Trigonometry are specifically introduced in grade nine.

Instrumentation

The researchers used a survey questionnaire with a 4-point Likert Scale to determine the participants' evaluation of the developed learning material in Analytic Geometry and Trigonometry in IDEA Format. The first part of the questionnaire seeks to evaluate the content of the learning material in terms of topics, objectives, concepts, directions, and activities. The second part seeks to evaluate the format of the learning material in terms of print, illustrations, design, and layout.

The notion of Likert scaling is a widely employed psychometric approach in survey research, wherein respondents are presented with questionnaires containing guide questions that need them to respond to scales. The scale in question is extensively employed across several disciplines, particularly emphasizing its application in social science research, such as education and psychology (Pimentel, 2019).

Research Ethics Protocol

The researchers requested permission from the school's division superintendent and the school head of E. Barretto Sr. National High School relative to the conduct of the study. Upon approval of the request, participants were given a consent form indicating they voluntarily participated in the study. The information gathered was treated with the utmost confidentiality and used only for this study.

Data Gathering

The researchers sent a letter of approval to the school head of Eduardo Barretto Sr. National High School and Schools Division Superintendent to conduct the study. The development of the conceptualized material happened during the pandemic by the grade nine mathematics teachers and head teacher, where they followed the IDEA format in support to the implementation of PIVOT 4A Learning Continuity Plan (LCP) of Region IV-A CALABARZON. IDEA refers to the four teaching-learning phases: introduction, development, engagement, and assessment. Competencies and an introductory activity are included in the introduction; discussion and examples with explanations to help students independently are included in the development; activities to put what they have learned from the second phase into practice are included in the engagement; and learning tasks to enhance understanding are included in the assessment. The content in terms of topics, objectives, concepts, directions, and activities and the format in terms of prints, illustrations, and design and layout

were evaluated thoroughly by the mathematics teachers, head teacher, master teacher, and education program supervisor in mathematics. Distribution and retrieval of the data and questionnaire needed for this study were given enough time to complete. The study’s goals and the questionnaire’s substance were communicated in detail by the researchers, who made every effort to do so. All information was then collected, analyzed, and interpreted. A certification was given afterward.

Statistical Analysis

The mean and the 4-point Likert Scale were applied to assess the participants’ evaluation of the content and format of the developed learning material in Analytic Geometry and Trigonometry in IDEA Format. The result was interpreted as follows:

	Scale	Interpretation
4	3.50 – 4.00	Very Satisfactory (VS)
3	2.50 – 3.49	Satisfactory (S)
2	1.50 – 2.49	Fair (F)
1	1.00 – 1.49	Poor (P)

RESULTS AND DISCUSSION

The results and an analysis of the approach are presented in this section. It describes the outcomes of the data gathering and analysis and presents findings related to the research questions.

Table 1
Participants’ Evaluation of the Content of the Learning Material in Terms of Topics

	Indicators	Mean	Interpretation
1.	Sequenced according to Curriculum Guide.	3.67	VS
2.	Logically presented.	3.83	VS
3.	Addresses the learners’ needs.	3.67	VS
	Composite	3.72	VS

Legend: 3.50 - 4.00 Very Satisfactory (VS) 2.50 - 3.49 Satisfactory (S) 1.50 - 2.49 Fair (F) 1.00 - 1.49 Poor (P)

According to Suparman (2014), learning materials are components closely related to each subject's content and must be relevant to the learning objectives, student characteristics, and learning strategies. Table 1 shows how the participants rated the topics of the learning material. The whole composite mean, 3.72, was assessed verbally as Very Satisfactory. The indicator with the highest mean, "logically presented," was 3.83. The mean of other indices was 3.67. Verbally, every indicator was assessed as Very Satisfactory. This implies that the mathematics teachers of Eduardo Barretto Sr. National High School and the experts from SDO Calamba City thought that the topics from the learning material were presented logically and in line with the curriculum guide, which also addressed the needs of the learners.

Table 2

Participants' Evaluation of the Content of the Learning Material in Terms of Objectives

Indicators	Mean	Interpretation
1. Relevant to the topics in Analytic Geometry and Trigonometry.	4.00	VS
2. Specific and clearly stated.	3.75	VS
3. Measurable.	3.75	VS
4. Attainable.	3.75	VS
5. Result-oriented.	3.75	VS
6. Time-bound.	3.73	VS
7. MELC-based.	3.83	VS
Composite	3.79	VS

Legend: 3.50 - 4.00 Very Satisfactory (VS) 2.50 - 3.49 Satisfactory (S) 1.50 - 2.49 Fair (F) 1.00 - 1.49 Poor (P)

A self-learning module is a short unit of instruction dealing with a single conceptual unit of subject matter with a self-contained and independent unit of instruction with a primary focus on a few well-defined objectives (Padmapriya, 2015). The result of Table 2 supported this through the participants' evaluation of the content of the learning material in terms of objectives. The whole composite mean, 3.79, was assessed verbally as Very Satisfactory. The indicator "relevant to the topics in Analytic Geometry and Trigonometry" has the highest mean of 4.00. In contrast, the indicator "time-bound" has the lowest mean of 3.73, both verbally translated as Very Satisfactory. Modules are learning materials arranged

systematically according to a particular curriculum, packed in the smallest learning unit, enabling students to study independently within a certain time (Purwanto et al. 2007). It suggests that the objectives were seen as a very important and key feature to consider in the created learning material by the participants.

Table 3
Participants' Evaluation of the Content of the Learning Material in Terms of Concept

Indicators	Mean	Interpretation
1. The material provides a background of concepts and information about the topic.	3.75	VS
2. The material contains correct information about the topic.	3.83	VS
3. The content is appropriate for the student's stage of development.	3.83	VS
4. The material provides for developing higher cognitive skills such as critical thinking, creativity, learning by doing, inquiry, problem-solving, etc.	3.92	VS
5. The material is free of ideological, cultural, religious, racial, and gender biases and prejudices.	3.58	VS
6. The material arouses the interest of the target reader.	3.75	VS
7. There is logical and smooth flow of ideas.	3.75	VS
Composite	3.77	VS

Legend: 3.50 - 4.00 Very Satisfactory (VS) 2.50 - 3.49 Satisfactory (S) 1.50 - 2.49 Fair (F) 1.00 - 1.49 Poor (P)

The participants' evaluation of the learning material's content in terms of concept is shown in Table 3. Verbally, the 3.77 overall composite mean was rated as Very Satisfactory. The indicator "the material provides for the development of higher cognitive skills such as critical thinking, creativity, learning by doing, inquiry, problem-solving, etc." has the highest mean of 3.92. In contrast, the indicator "the material is free of ideological, cultural, religious, racial, and gender biases and prejudices" has the lowest mean of 3.58, both verbally translated as Very Satisfactory. It can be concluded that learning analytic geometry and trigonometry requires a very satisfactory level of conceptual understanding.

Table 4
Participants' Evaluation of the Content of the Learning Material in Terms of Directions

Indicators	Mean	Interpretation
1. Simple and clear.	3.75	VS
2. Properly sequenced.	3.92	VS
3. Can be done independently.	3.33	S
4. Guide the students accordingly.	3.75	VS
Composite	3.69	VS

Legend: 3.50 - 4.00 Very Satisfactory (VS) 2.50 - 3.49 Satisfactory (S) 1.50 - 2.49 Fair (F) 1.00 - 1.49 Poor (P)

According to Mulyasa (2006), a module is an independent educational package consisting of several learning encounters that are methodically planned and created to support students in meeting learning objectives. It is a learning procedure about a specific discussion unit organized in a methodical, practical, and focused manner to be utilized by pupils. However, Prastowo (2019) claimed that the book intended for students to understand the module can study independently without a teacher's assistance or with it. Table 4 shows the participants' evaluation of the content of the learning material in terms of directions. The whole composite mean, 3.69, was assessed verbally as Very Satisfactory. The indicator "properly sequenced" has the highest mean of 3.92, which is verbally translated as Very Satisfactory. In contrast, the indicator "can be done independently" has the lowest mean of 3.33, verbally translated as satisfactory. It implies that the directions are crucial to learning analytical geometry and trigonometry in the created learning material.

Table 5
Participants' Evaluation of the Content of the Learning Material in Terms of Activities

Indicators	Mean	Interpretation
1. Relevant to the objectives.	4.00	VS
2. Appropriate to the learners' abilities.	3.75	VS
3. Engaging and self-motivating to the learner.	3.75	VS

4.	Adequate to learners' language knowledge and skills.	3.67	VS
5.	Sufficient to determine the mastery level of learners.	3.53	VS
6.	Enhances learners' comprehension and reading skills	3.75	VS
7.	Localized.	2.00	F
8.	Activities seek to relate new concepts from previous learning.	3.83	VS
Composite		3.54	VS

Legend: 3.50 - 4.00 Very Satisfactory (VS) 2.50 - 3.49 Satisfactory (S) 1.50 - 2.49 Fair (F) 1.00 - 1.49 Poor (P)

Table 5 shows how the participants rated the activities in the learning material. The whole composite mean, 3.54, was assessed verbally as Very Satisfactory. The indicator with the highest mean, “relevant to the objectives,” was 4.00, verbally translated as Very Satisfactory. Mendiknas (2006) stated that the objectives of mathematics subjects are to understand the concepts of mathematics, to explain the interconnectedness of concepts, and to apply the concept or algorithms flexibly, accurately, efficiently, and appropriately in problem-solving and problem solving including the ability to understand problems, design mathematical models, complete the model and interpret the solutions obtained. Students must apply what they already understand to solve problems; in the process, they often discover new ideas about mathematics. The indicator with the lowest mean, “localized,” was 2.00, verbally translated as Fair. This implies that activities are vital in the developed material as the localization of these should improve under Implementing Rules and Regulations of Republic Act No. 10533; the K to 12 Curriculum should be contextualized and flexible enough to enable and allow schools to localize, indigenize, and enhance the same based on their respective educational and social contexts (DepEd Order No. 43, s. 2013).

Table 6

Participants' Evaluation of the Format of the Learning Material in Terms of Prints

Indicators	Mean	Interpretation
1. The size of the letters is appropriate to the intended user.	3.67	VS
2. Spaces between letters and words facilitate reading.	3.67	VS
3. The font is easy to read.	3.67	VS
4. Printing is good quality (i.e., no broken letters, even density, correct alignment, properly placed screen registration).	3.58	VS
Composite	3.65	VS

Legend: 3.50 - 4.00 Very Satisfactory (VS) 2.50 - 3.49 Satisfactory (S) 1.50 - 2.49 Fair (F) 1.00 - 1.49 Poor (P)

Table 6 shows the participants' evaluation of the format of the learning material in terms of prints. The whole composite mean, 3.65, was assessed verbally as Very Satisfactory. The indicator "printing is of good quality" has the lowest mean of 3.58, verbally translated as Very Satisfactory. The mean of other indices was 3.67, also verbally translated as Very Satisfactory. As Kitchel (2011) suggested, choosing an appropriate font is the first step, and the focus should be on a clean, clear font with adequate spacing between letters. The result suggests that the prints of the learning materials are appropriate, legible, and situated correctly.

Table 7

Participants' Evaluation of the Format of the Learning Material in Terms of Illustrations

Indicators	Mean	Interpretation
1. Simple and can be easily recognized.	3.92	VS
2. Clarify and supplement the text.	3.75	VS
3. Properly labeled or captioned (if applicable).	3.83	VS
4. Realistic/appropriate colors.	3.83	VS
5. Attractive and appealing.	3.58	VS

6. Culturally relevant.	3.64	VS
Composite	3.76	VS

Legend: 3.50 - 4.00 Very Satisfactory (VS) 2.50 - 3.49 Satisfactory (S) 1.50 - 2.49 Fair (F) 1.00 - 1.49 Poor (P)

Substantial white space around text and graphics makes printed materials easier to read (Saunders & Wong, 2020). This is visible in the evaluation of the learning material’s format in terms of the participants’ illustrations, as shown in Table 7. Verbally, the 3.76 overall composite mean was rated as Very Satisfactory. The indicator “simple and can be easily recognized” has the highest mean of 3.92, while the indicator “attractive and appealing” has the lowest mean of 3.58, both verbally translated as Very Satisfactory. The learning material’s visuals must be excellent because they could influence how well the learners comprehend the topics, examples, and concepts.

Table 8
Participants’ Evaluation of the Format of the Learning Material in Terms of Design and Layout

Indicators	Mean	Interpretation
1. Attractive and pleasing to look at.	3.82	VS
2. Simple (i.e., does not distract the attention of the reader).	3.91	VS
3. Adequate illustration in relation to text.	3.73	VS
4. Harmonious blending of elements (e.g., illustrations and text).	3.82	VS
Composite	3.82	VS

Legend: 3.50 - 4.00 Very Satisfactory (VS) 2.50 - 3.49 Satisfactory (S) 1.50 - 2.49 Fair (F) 1.00 - 1.49 Poor (P)

Table 8 shows the participants’ evaluation of the format of the learning material in terms of design and layout. The whole composite mean, 3.82, was assessed verbally as Very Satisfactory. The indicator “simple” has the highest mean of 3.91, while “attractive and appealing” has the lowest mean of 3.58. Both are verbally translated as Very Satisfactory. It can be concluded that the design and layout of the learning material in Analytic Geometry and Trigonometry meet the

expectations of the mathematics teachers of Eduardo Barretto Sr. National High School and the experts from SDO Calamba City.

Based on the evaluation of the developed learning material, enhancement in terms of localized activities and giving directions that facilitate the students to learn independently should be provided. The indicators “can be done independently” in Table 4 and “localized” in Table 5 have a mean of 3.3 (Satisfactory) and 2.0 (Fair), respectively. According to Mehisto (2012), quality learning materials do more than communicate information. They encourage dialogue, critical and creative thinking, and learner autonomy. High-quality educational resources also assist pupils in realizing the limitations of their existing knowledge and ways of thinking. They assist pupils in realizing when they require more information or assistance. In social contexts, they also foster understanding between people, which facilitates cooperative problem-solving.

The content of the developed learning material in terms of topics (3.72), objectives (3.79), concepts (3.77), directions (3.69), and activities (3.54) were all “Very Satisfactory”; thus, it can be used by teachers and learners as a primary resource in teaching and learning elective mathematics specifically Analytic Geometry and Trigonometry. Enhancements should be made depending on the needs of the learners and the curriculum. Localization of the activities should be considered based on the 2.00 mean, which was verbally translated as Fair. The evaluation of the format of the developed learning material in terms of prints (3.65), illustrations (3.76), and design and layout (3.82) were all “Very Satisfactory.”

As Telaumbanua and Surya (2017) concluded in their study, students can use the mathematics module as self-study material in mathematics instruction that is methodically planned according to a specific curriculum, condensed, and particularly in the shape of the tiniest instructional unit and is created with an engaging that includes several arranged exercises that are well-related to the subject matter, and assessment to increase students’ attentiveness, methodical and simple to learn in order to meet the learning objectives’ expectations for competencies. Furthermore, this study developed and validated one.

CONCLUSIONS

Quality education goes beyond what happens inside the classroom. A teacher’s preparation through lesson plans, instructional materials, and learning materials is essential in teaching-learning. The validated contextualized material in Analytic Geometry and Trigonometry is beneficial to (1) teachers in having a primary resource in teaching the subject and (2) to students in understanding

the subject independently as the learning material provides for the development of higher cognitive skills such as critical thinking, creativity, learning by doing, inquiry, problem-solving, etc.; and (3) for future researchers in finding its effectiveness.

TRANSLATIONAL RESEARCH

The contextualized learning material in analytical geometry and trigonometry that was revalidated in this study can be translated into a primary resource or reference that can be used by mathematics teachers and by EBSNHS students in elective subjects. This resource can serve as a comprehensive guide, providing step-by-step explanations, examples, and practice problems that align with the curriculum. Furthermore, it can incorporate real-life applications and practical scenarios, helping students grasp the relevance and importance of these mathematical concepts in various fields such as engineering, architecture, and physics. By utilizing this resource, teachers and students can enhance their understanding and proficiency in Analytic Geometry and Trigonometry, resulting in a more engaging and effective learning experience.

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