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The Implementation of the Mathematics Curriculum in Basic and Secondary Education in Timor-Leste: Examining Its Developments and Challenges

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Abstract
This article aims to identify and describe the developments and challenges encountered by mathematics teachers during the implementation of the Basic and Secondary Education Curriculum in Timor-Leste. The methodology adopted in this study follows a quantitative approach guided by a descriptive-interpretive paradigm. Data were collected through a closed-ended questionnaire, and the participants consisted of mathematics teachers who were still actively fulfilling their roles as learning facilitators in the 2024 academic year. The study involved 30 teachers in total, with 15 teachers each selected from the municipalities of Baucau and Bobonaro. Quantitative analysis was conducted to identify developments and obstacles related to the implementation of the mathematics curriculum at the basic and secondary levels in Timor-Leste. According to the results, in terms of planning, the teachers acknowledged that the mathematics curriculum serves as one of the fundamental elements guiding their classroom work. Regarding teaching practices, they viewed the curriculum as a document that organizes learning experiences in the classroom. In terms of learning assessment, teachers argued that the curriculum and assessment are complementary tools designed to ensure the quality of education. Furthermore, the results also revealed several obstacles faced by teachers, such as the lack of technological resources—including calculators, computers, and internet access—to support the effective implementation of the mathematics curriculum in basic and secondary schools in Timor-Leste.
Keywords: *Implementation; Curriculum; Mathematics Teachers*

INTRODUCTION

Education is a fundamental right of every individual and plays a vital role in human development through teaching and learning processes aimed at cultivating and enhancing young people's intellectual capacity (Swargiary, 2024). It represents a unique learning process linked to school, family, and social formation, and it can occur both formally and informally in the transmission of scientific and technological knowledge about the world in general and particularly within Timorese society (Soares Pinto, 2018).

School education, which takes place within formal educational institutions, is considered in Timor-Leste as one of the most important and essential factors contributing to social development while improving individuals' skills and competencies (Burns, 2017). Moreover, it plays a significant role in shaping knowledge, values, and behaviors (Song et al., 2022). Through formal education, individuals establish relationships and understand the organizational structure of the society in which they live.

Within this educational process, one of the most crucial components is the curriculum, as it forms the foundation of pedagogical practice (Flores, 2016). The curriculum defines the content to be addressed in classrooms, the activities to be carried out, and the competencies to be developed, with the overarching goal of fostering students' holistic formation (He & Liu, 2024). It serves as a reference framework for managing and organizing school knowledge by

outlining the subjects to be studied, the manner in which they will be taught, and the methodologies and learning strategies adopted by schools. Furthermore, the curriculum is a normative document that specifies the learning objectives and skills to be developed by students while also guiding teachers' work to fulfill these objectives(Bahadir & Tuncer, 2020).

This perspective is reinforced by Cunha (2022), who states that "the curriculum is a key reference for teachers, particularly in developing countries, where the curriculum is reflected in teacher guides and textbooks, often the only available and utilized resources" (p. 135). Likewise, Lopes (2021) argues that "the curriculum is a control project encompassing learning experiences implemented by educational institutions, which must be understood by students" (p. 26). Additionally, the Ministry of Education of Timor-Leste (2011, p. 14) highlights that "the school curriculum is defined in terms of the learning outcomes to be achieved. The subjects that make up a curriculum are integrated according to the relevance of the learning they provide to students." (Mohr & Welker, 2017).

Based on these ideas, it can be concluded that the curriculum is an integral part of a school's political-pedagogical project, serving as a normative document that contains all planned activities throughout the academic year (Uljens & Rajakaltio, 2017). It is shared with the entire school community and helps organize pedagogical projects in alignment with educational guidelines, ensuring the standardization of knowledge acquisition (Tan et al., 2021). This process aims to promote humanization, citizenship, and the right to equitable and quality education (Firmansyah et al., 2024).

Furthermore, mathematics is part of the national curriculum for both basic and secondary education in Timor-Leste, with significant presence across all educational levels (Ogden, 2017). It should be understood in accordance with the values and principles. The development of the mathematics curriculum should be viewed as a collaborative contribution—alongside other subjects—to the promotion of the general competencies of basic and secondary education (Potari et al., 2019).

The main objectives of the mathematics curriculum at these levels are to provide students with exposure to fundamental mathematical ideas and methods, enabling them to appreciate their value and nature and to develop their capacity and confidence in using mathematics to analyze and solve problems and to reason logically (Seah, 2019). Considering these perspectives, the author is particularly interested in conducting an in-depth analysis of the issue, focusing on the developments and challenges experienced by teachers during their teaching practices (Zhukova, 2018).

In Timor-Leste, the education system continues to face several challenges related to quality, one of which concerns teachers' instructional practices (Lucas et al., 2015). Teachers' knowledge is essential, as they must master the content, they teach to ensure students fully understand the material. At the same time, teachers must be able to select appropriate teaching resources in accordance with curriculum guidelines (Osuji & Anne, 2023). These various dimensions of teacher knowledge are fundamental for students to achieve the desired learning outcomes (Hill & Chin, 2018).

In the school context, teachers' activities require a set of professional competencies to ensure effective performance. According to Ponte (1999), teachers' professional knowledge can be divided into four main domains: (1) content knowledge, (2) curriculum knowledge, (3) knowledge of students and their learning, and (4) knowledge of institutional processes (p. 3).

Following Ponte's perspective, it can be inferred that the understanding of basic and secondary school teachers in Timor-Leste regarding the curriculum is essential for facilitating professional practices, particularly in mathematics teaching. Therefore, this study aims to identify the developments and challenges faced by teachers during the implementation of the basic and secondary education curriculum in Timor-Leste.

Based on this problem, the research seeks to answer the following questions: a) What knowledge do mathematics teachers in basic and secondary education have regarding learning planning? b) What knowledge do these teachers have concerning the implementation of learning activities? c) What knowledge do these teachers possess about learning assessment?

This study, which focuses on teachers' instructional practices—particularly their knowledge of the mathematics curriculum—holds significant implications for teaching and learning in mathematics. Specifically: a) The school curriculum serves as the pathway that students must follow throughout their educational journey, as it organizes the content they will learn during their studies within an educational institution. b) Since curriculum implementation is part of the educational identity, it must respect the social, cultural, and contextual differences within which the institution operates. c) The challenges in curriculum implementation encompass the actions, behaviors, attitudes, and values that are implicitly learned through the content. d) The development and challenges of the curriculum are interconnected with all aspects of classroom activities, fostering convergence among subjects and guiding how instructional content should be articulated.

RESEARCH METHOD

In Timor-Leste, this study conducted an in-depth analysis of the progress and challenges encountered during curriculum implementation. The main purpose was to determine whether the curriculum needed reform or remained effective as a guiding document for teaching and learning processes in schools.

Accordingly, the study explored the experiences of mathematics teachers in Timor-Leste regarding the implementation of the basic and secondary education mathematics curriculum, focusing on its developments and obstacles. A qualitative and quantitative research design was adopted, employing an interpretive approach and involving a limited group of basic and secondary school teachers in Timor-Leste. For practical reasons, thirty mathematics teachers from different schools and educational levels in two municipalities were selected; they taught during the 2024 academic year, as shown in Table 1.s

Table 1 – Study Participant

Municipalities	Number of Teachers		Total
	Basic Education	Secondary Education	
Baucau	7 teachers	8 teachers	15 teachers
Maliana	7 teachers	8 teachers	15 teachers
Total	**14 teachers**	**16 teachers**	**30 teachers**

A questionnaire served as the primary data collection method and was administered during the 2024 academic year to mathematics teachers from basic and secondary education in two municipalities of Timor-Leste—namely Baucau and Maliana—who participated in the study.

The questionnaire consisted of two parts:

1. The first part collected respondents' personal and professional information.
2. The second part presented four alternative responses using a Likert-type scale: a) CI – Completely Implemented; b) MPI – Mostly Implemented; c) PPI – Partially Implemented; d) NI – Not Implemented.

Participants answered the questionnaire based on their teaching experiences, particularly concerning the implementation of the mathematics curriculum in basic and secondary education in Timor-Leste. The questionnaire was presented exclusively in Portuguese and distributed to 30 teachers.

The collected responses were classified, tabulated, and grouped according to categories established in the questionnaire. Responses were coded using numerical values from 1 to 4, in ascending order from "Not Implemented" to "Completely Implemented." Frequency, mean, and standard deviation were then calculated using Microsoft Excel (Version 2021).

RESULTS AND DISCUSSION

Teachers' Personal and Professional Data

The personal and professional data of the thirty teachers included in this study, who work in primary and secondary schools in the two municipalities in Timor-Leste, are compiled from the following variables: age, gender, academic qualifications, length of service until December 31, 2024, and the grade levels they teach.

Regarding age, the teachers involved in the study ranged from 27 to 59 years old, with an average age of 44. Thus, it can be seen that the primary and secondary teachers who teach mathematics in the municipalities of Baucau and Maliana, Timor-Leste, are relatively young, as shown in Figure 2.

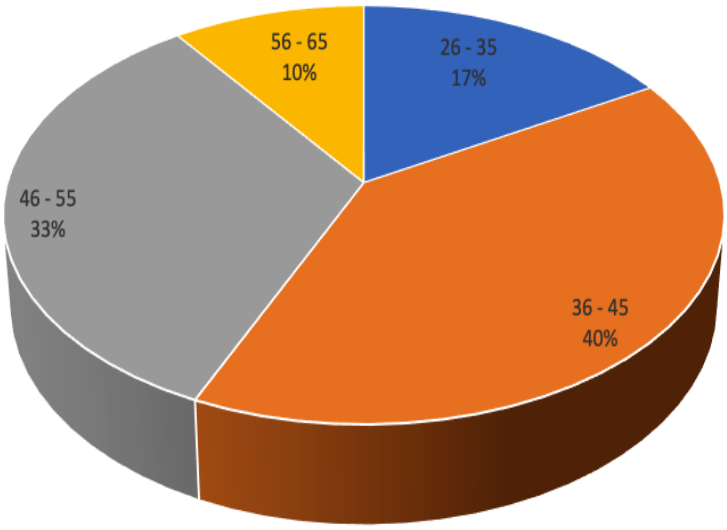

Figure 1: Percentages of teachers according to age
Source: Investigation results (2024)

Based on the graph presented in Figure 02, the majority of teachers fall within the 36–45 age group (40%). The second largest group consists of teachers aged 46–55 years (33%), followed by those aged 26–35 years (17%), while teachers aged 56–65 years represent the smallest group, accounting for 10% of the total. Regarding the gender distribution among

Mathematics teachers, the data reveal an imbalance. Out of the 30 teachers who participated in the study, 77% are male, whereas 23% are female. As for the academic qualifications of the teachers involved in the study, 80% hold a Bachelor's degree (Licenciatura), while the remaining 20% possess a Diploma (Bacharelato) level qualification. Concerning the length of service of Mathematics teachers in basic and secondary education in the municipalities of Baucau and Maliana, up to December 31, 2024, the distribution is presented in the following figure.

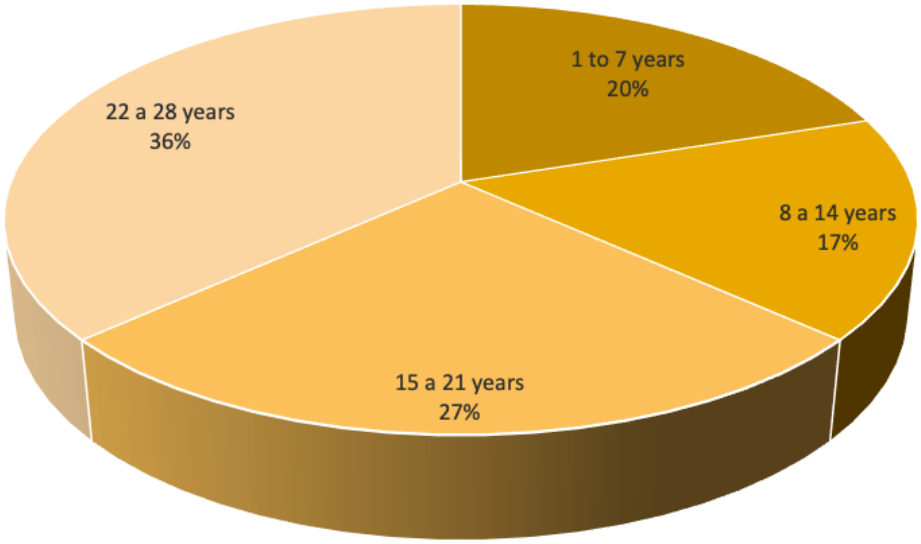

Figure 2. Percentage of Teachers by Years of Service
Source: Investigation results (2024)

According to the data presented in Figure 3, mentioned above, it can be seen that as of December 31, 2024, the majority of teachers had up to 28 years of teaching service (36%). In this case, we can explain that teachers working in the field of Mathematics, from the Indonesian occupation to the present day, are the most effective. Finally, the number of teachers is presented by the level of education they teach, as shown in Figure 3.

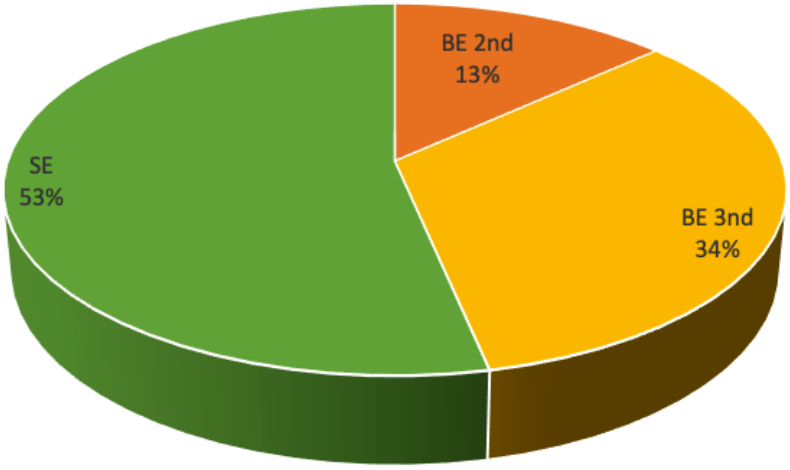

Figure 3. Percentages of teachers according to the level of education they teach
Source: Investigation results (2024)

Implementation of the Mathematics Curriculum in Basic and Secondary Education

The research findings on the implementation of the Mathematics curriculum in Basic and Secondary Education—examined through its developments and challenges—are presented across three essential components, as follows:

1. Learning Planning Activities

The results of the analysis regarding the opinions of Mathematics teachers from basic and secondary schools in the municipalities of Baucau and Maliana on the implementation of the Mathematics curriculum—specifically in relation to learning planning activities—are presented in Table 2.

In this section, a Likert-type scale was used, consisting of four levels of implementation: a) Completely Implemented (CI). b) Mostly Implemented (MPI). c) Partially Implemented (PPI). d) Not Implemented (NI). These categories were numerically coded from 1 to 4, in ascending order from Not Implemented to Completely Implemented.

Table 2. Implementation of the Mathematics curriculum, looking at the planning action activity (n=30)

Item	Statement	% of Responses					
		CI	MPI	PPI	NI	CI + MPI	PPI + NI
2.1	Develop a Mathematics learning plan based on the contents of the study program.	66,67	33,33	0,00	0,00	100	0,00
2.2	Develop a Mathematics learning plan using a scientific approach such as observing, questioning, processing, reasoning, presenting, and concluding.	63,33	36,67	0,00	0,00	100	0,00
2.3	The Mathematics learning plan is developed independently, without adopting it from other schools.	40,00	20,00	40,00	0,00	60	40,00
2.4	Develop a Mathematics learning plan considering students' intellectual level and abilities.	36,67	56,67	6,67	0,00	93	6,67
2.5	Prepare a Mathematics learning plan considering students' learning styles and learning pace.	50,00	36,67	13,33	0,00	87	13,33
2.6	Design a Mathematics learning plan taking into account students' social abilities and academic background.	30,00	56,67	13,33	0,00	87	13,33
2.7	The Mathematics learning plan encourages students' curiosity.	20,00	50,00	30,00	0,00	70	30,00
2.8	The Mathematics learning plan promotes enthusiasm, independence, and learning competencies among students.	26,67	43,33	30,00	0,00	70	30,00
2.9	Prepare a Mathematics learning plan that pays attention to students' inspiration, motivation, creativity, and interest development.	73,33	26,67	0,00	0,00	100	0,00

Item	Statement	% of Responses					
		CI	**MPI**	**PPI**	**NI**	**CI + MPI**	**PPI + NI**
2.10	Use the most recent reading sources, such as reference books, in learning activities.	63,33	20,00	16,67	0,00	83	16,67
2.11	Describe basic competencies as indicators of the competencies to be achieved.	26,67	56,67	16,67	0,00	83	16,67
2.12	Use information technology such as computers, the internet, and other supporting learning resources.	0,00	0,00	60,00	40,00	0	100

Source: Research data analysis results (2024) by Microsoft Excel

Based on the results shown in Table 2, we can observe both parts. The first part focuses on the development of the implementation of the Mathematics curriculum for primary and secondary education. In this case, all teachers involved in the study are familiar with the use of the Mathematics curriculum in learning planning. This perspective is justified by the responses given by teachers, such as the following: all teachers (100%) stated that they had "mostly implemented" or "completely implemented" the following questionnaire items: a) Develop a Mathematics learning plan based on the curriculum content; b) Develop a Mathematics learning plan using a scientific approach such as: observing, questioning, processing, reasoning, presenting, and concluding. c) Preparation of a mathematics learning plan, paying attention to developing students' inspiration, motivation, creativity, and interest. d) Use of information technology, such as computers and the internet, and other learning support resources.

The same results show that the majority of teachers, 93% of teachers, state that they have "mostly implemented" or "fully implemented" the item "developing a mathematics learning plan, taking into account the intellectual level and ability of students," while the remaining 6.67% of teachers emphasize "somewhat implemented" or "not implemented."

Next, 87% stated that the following curriculum implementation items were "mostly implemented" or "fully implemented" according to the planned action plan: a) Preparing a mathematics learning plan, taking into account students' learning styles and learning speed b) Developing a mathematics learning plan, taking into account students' social skills and academic background.

Furthermore, 83% of teachers stated that they were "mostly implemented" or "fully implemented" the following questionnaire items: a) Using the most recent reading sources as support books in learning activities. b) Describing basic skills as an indicator of the skills to be achieved.

In the second part, regarding the obstacle to using the mathematics curriculum in primary and secondary education, it is linked to "using information technology, such as computers and the internet, and other learning support resources." All teachers (100%) reported that it was "somewhat implemented." or "not implemented" in their classroom learning planning activities. In this case, we can justify that one of the obstacles faced by primary and secondary school teachers is the lack of technological resources and internet networks in the schools where they perform their duties as educators.

Based on these results, we can conclude that learning planning activities are essential. In

this case, m is a process that defines objectives, content, and assessments, with the main objective of guiding the teacher's work to ensure the quality of teaching and learning activities in the classroom.

2. Learning Implementation Activity

This section presents teachers' opinions (in percentages) on various aspects of the implementation of the Mathematics curriculum, as observed through the learning implementation activity, as covered in the closed-ended items of question 3 of the research questionnaire. The results of the analysis are shown in Table 3.

Table 3: Mathematics Curriculum Implementation as Observed through the Learning Implementation Activity (n = 30)

No	Statement	% of Responses					
		CI	MPI	PPI	NI	CI+MPI	PPI + NI
3.1	Organize the classroom to create a more conducive environment for initiating learning activities.	66,67	33,33	0,00	0,00	100	0,00
3.2	Explain the competencies that students will study.	50,00	50,00	0,00	0,00	100	0,00
3.3	Invite students to observe certain phenomena before discussing the learning content (e.g., demonstration of media related to the learning material).	10,00	60,00	30,00	0,00	70,0	30,00
3.4	Explain the learning objectives to be achieved.	40,00	56,67	3,33	0,00	96,7	3,33
3.5	Ask questions related to previous learning content before starting the new learning activity.	63,33	36,67	0,00	0,0	100	0,00
3.6	Conduct learning activities using discovery learning (students discover concepts rather than being directly informed).	30,00	33,33	36,67	0,00	63,3	36,67
3.7	Conduct learning activities using a project-based learning approach (produce work based on problem-solving).	20,00	53,33	26,67	0,00	73,3	26,67
3.8	Summarize learning materials together with students (reviewing the content presented).	30,00	46,67	20,00	3,33	76,7	23,33
3.9	Provide students with information about the content that will be presented in the next session.	60,00	36,67	3,33	0,00	96,7	3,33
3.10	Assign group or individual tasks as enrichment activities to assess students' understanding of the material studied.	43,33	43,33	13,33	0,00	86,7	13,33

Source: Research data analysis results (2024) by Microsoft Excel

Based on the results of data analysis presented in Table 03, it can be observed that the majority of basic and secondary school teachers recognize the importance of using the Mathematics curriculum in learning activities. These perspectives are confirmed by the responses of the teachers who participated in the study.

The teachers' responses were grouped in ascending order as follows: all teachers (100%) indicated that they had "mostly implemented" or "completely implemented" several statements related to the implementation of the Mathematics curriculum in teaching and learning activities. In increasing order of implementation, these include: organizing the classroom to make it more conducive to starting learning activities, explaining the competencies that students will study, and asking questions related to previous learning content before starting new activities.

The same results show that most teachers responded "mostly implemented" or "completely implemented" to the following statements: a) "Explain the learning objectives to be achieved" (96.7%); b) "Provide students with information about the content that will be presented in the next meeting" (96.7%).

For both of these statements, only 3.33% of teachers reported implementing them "partially" or "not at all."

Additionally: a) "Assign group or individual tasks as enrichment activities to measure students' understanding of the subject studied" was implemented by 86.7%, while 13.33% did so only partially or not at all; b) "Summarize the learning materials together with students" was implemented by 76.7%, with 23.33% implementing it only partially or not at all; c) "Conduct learning activities using a project-based learning approach (producing work based on problem-solving)" was implemented by 73.3%, with 26.67% reporting partial or no implementation; d) "Invite students to observe certain phenomena before discussing the learning content (e.g., demonstrations of media related to the learning material)" was implemented by 70.0%, while 30% implemented it only partially or not at all; e) Lastly, "Conduct learning activities using discovery learning (students discover concepts rather than being informed directly)" was implemented by 63.3%, while 36.67% stated that they implemented it only partially or did not implement it at all.

In summary, the implementation of the Mathematics curriculum, as observed through learning implementation activities, indicates that most teachers in basic and secondary schools involved in the study perceive learning implementation as a process of acquiring or modifying students' knowledge, competencies, skills, and behaviors. These processes are carried out through classroom organization, achievement of learning objectives, assignment design to support lessons, and other related strategies.

3. Learning Assessment Activities

This section presents teachers' opinions (in percentages) regarding various aspects of Mathematics curriculum implementation, specifically as observed in learning assessment activities. These items were included in Section 4 of the research questionnaire. The results of the analysis are presented in Table 4 below.

Table 4. Implementation of the Mathematics Curriculum observed through learning assessment (n=30)

No	Statement	% of Responses					
		CI	MPI	PPI	NI	CI+MPI	PPI+NI
4.1	Determine the aspects of students' learning outcomes to be assessed, including competencies, attitudes, knowledge, and skills in a balanced manner.	76,67	23,33	0,00	0,00	100,00	0,00
4.2	Select assessment techniques according to indicators of learning outcomes based on students' competencies.	33,33	66,67	0,00	0,00	100,00	0,00
4.3	Conduct portfolio-based assessments, evaluating a collection of students' work to determine their interests, development, achievements, and creativity.	36,67	40,00	23,33	0,00	76,67	23,33
4.4	Conduct practical tests to assess students' abilities in performing tasks or behaviors according to competency requirements.	30,00	43,33	26,67	0,00	73,33	26,67

No	Statement	% of Responses					
		CI	**MPI**	**PPI**	**NI**	**CI+MPI**	**PPI+NI**
4.5	Conduct project-based assessments that include planning, implementation, and reporting activities, both in written and oral form.	16,67	66,67	16,67	0,00	83,33	16,67
4.6	Conduct daily tests to evaluate students' competence after completing one or more basic competencies.	73,33	26,67	0,00	0,00	100,00	0,00
4.7	Conduct mid-semester tests to measure all performance indicators representing students' competencies for that period.	43,33	40,00	16,67	0,00	83,33	16,67
4.8	Conduct final-semester tests to measure all performance indicators representing students' competencies for that semester.	66,67	13,33	20,00	0,00	80,00	20,00
4.9	Conduct oral tests to measure all performance indicators representing students' competencies.	60,00	40,00	0,00	0,00	100,00	0,00
4.10	Conduct homework-based assessments, individually or in groups, according to the nature of the task (e.g., practical reports).	50,00	40,00	10,00	0,00	90,00	10,00
4.11	Conduct observation-based assessments using guidelines containing a series of indicators for students' observable behaviors.	40,00	53,33	6,6	0,0	93,33	6,67
4.12	Report the results of students' knowledge and competency assessments (to the school principal, homeroom teacher, guidance and counseling teacher, and parents/guardians) within the specified period.	13,33	60,00	10,00	16,67	73,33	26,67

Source: Research data analysis results (2024) by Microsoft Excel

Based on the results presented in Table 4, we can see that all, that is, the majority of teachers involved in the study, recognized that implementing the Mathematics curriculum for primary and secondary education is very important in learning assessment activities. These perspectives are supported by the responses given by teachers based on their experiences of conducting teaching practices in the classrooms for some time. These responses are as follows: all teachers (100%) reported that it was "mostly implemented" or "fully implemented," with most items related to the implementation of the Mathematics curriculum being observed in learning assessment activities through the following statements: a) Determine the aspects of student learning outcomes that will be assessed, including skills, attitudes, knowledge, and abilities, and assess them in a balanced manner; b) Choose assessment techniques based on learning outcome indicators based on student competencies; c) Conduct daily test assessments to assess student competency after completing one or more basic competencies; d) Oral tests to measure all student performance indicators representing all student performance indicators.

Next, most teachers expressed their opinions regarding the implementation of the Math curriculum, analyzing the assessment activities. The following statements were found, in descending order: "Conduct observation assessments using guidelines containing a series of student behavior indicators to be observed" (93.33% implemented this to a large extent, i.e., fully implemented, and 6.67% implemented it to a small extent or not at all); "Conduct assessments in the form of individual or group homework assignments based on the characteristics of the assignment (e.g., a practical report)" (90% implemented this to a large extent, i.e., fully implemented, and 6.67% implemented it to a small extent or not at all); "Conduct project evaluations that include planning, implementation, and reporting activities,

both written and verbal" and "Conduct mid-semester test assessments to measure all performance indicators of student competencies that represent all core competencies for that semester" (83.33% implement to a large extent, i.e., fully implemented, and 16.67% implement to a small extent or not at all); "Conduct end-of-semester test assessments to measure all performance indicators of student competencies that represent all core competencies for that semester" (80.00% implement to a large extent, i.e., fully implemented, and 20.00% implement to a small extent or not at all); "Conduct portfolio-based assessments, evaluating a collection of student work to determine student interests, development, achievements, and creativity" (76.67% implement to a large extent, i.e., fully implemented, and 23.33% implement to a small extent or not at all); "Conduct assessments through practical tests to evaluate students' abilities in performing activities or behaviors according to competency demands" and "Conduct reporting activities on the results of assessments of students' knowledge and competencies (including to the school principal, class teacher, guidance and counseling teacher, and parents/guardians) within the specified period" (73.33% implement it to a large extent, i.e., fully implemented, and 26.67% implement it to a limited extent or not at all).

In conclusion, most teachers recognize that learning assessment is a fundamental tool for improving the teaching and learning process. Its purpose is to identify the strengths and weaknesses of the curriculum and students in order to verify that the learning objectives are being met.

Final Consideration

Based on this study, it is possible to conclude that the mathematics curriculum serves as a guideline for the implementation of educational activities in schools for those directly and indirectly involved, such as teachers, school principals, and students themselves. The curriculum, as a source for achieving the objectives of each educational unit, is outlined in various subjects for elementary and secondary schools, as well as at the university level. One of these subjects is mathematics. Therefore, the implementation of the mathematics curriculum by elementary and secondary school teachers in Timor-Leste, in this case, focuses on planning activities, learning activities, and learning assessment activities.

Regarding planning activities, from the perspective of elementary and secondary school mathematics teachers in Timor-Leste, the mathematics curriculum is one of the most fundamental elements in learning planning, as the curriculum guides the teacher's work in the classroom. In this sense, planning involves several aspects, such as defining the content, the order of presentation, and the learning objectives.

Regarding learning activities, in the opinion of these same teachers, the mathematics curriculum is a document that organizes learning experiences. This is because the curriculum consists of learning objectives, content, learning methods, and assessment strategies. The mathematics curriculum is a normative document that guides teachers' work and is part of the school's pedagogical policy project.

Regarding learning assessment, in the opinion of the teachers involved in the study, the curriculum and learning assessment are complementary tools to ensure the quality of education. The curriculum regulates educational practice, while assessment verifies students' assimilation of knowledge during learning. Even so, primary and secondary school teachers in Timor-Leste face some obstacles when implementing the mathematics curriculum in their teaching

practices, in this case, regarding the lack of technological resources such as calculators, computers, and the internet in the schools where they work.

CONCLUSION

This study found that mathematics teachers in basic and secondary education in Timor-Leste effectively implemented the curriculum in planning, teaching, and assessment, demonstrating strong comprehension of its role in structuring learning objectives, content, and strategies to promote students' intellectual growth. Challenges persisted, however, due to limited technological resources like calculators, computers, and internet access, which impeded optimal execution. While the curriculum proved essential for enhancing teaching quality and learning outcomes, sustained support via teacher training, resource allocation, and infrastructure improvements remain crucial for equitable implementation. Future research could investigate the impact of targeted technology interventions on curriculum delivery in resource-constrained rural schools.

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