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Article

The Use of Question Modification Strategies to Differentiate Instruction in Eritrean Mathematics and Science Classrooms

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Abstract: This qualitative study aimed at examining the question modification strategies Eritrean elementary and middle school teachers used to differentiate their instruction and meet the diversity in the classroom as well as the functions these strategies served in classroom interactions. The research data consisted of videotaped recordings (N = 11 videotaped lessons) of classroom interactions in eight mathematics and science classrooms, which were analysed through interaction analysis. The findings showed that Eritrean teachers utilised the following five question modification strategies either independently or in combination: repetition; rephrasing; clarification; decomposition; and code-switching. Although repetition was the most commonly used strategy, it was not found to help teachers to differentiate their instruction. Likewise, the utilisation of rephrasing was dependent on how effectively teachers captured students' misunderstandings and modified their questions accordingly. Instead, clarification, decomposition, and code-switching were found to be the most highly developed question modification strategies from the viewpoint of differentiation. It was concluded that the question modification strategies were dominant and workable elements of classroom interactions in teacher-led and poorly-resourced large classrooms, such as those in Eritrea.

Keywords: differentiated instruction; elementary and middle schools; inclusive education; interaction analysis; mathematics and science classrooms; question modification strategy

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1. Introduction

Questioning has been identified as one of the most important and frequently used teaching strategies in mathematics [1] and science classrooms [2]. Teachers' questions help them to initiate and sustain classroom discussions, introduce new topics, request clarifications from their students, follow up on students' ideas, and understand students' thoughts [3]. Questions also attract students' attention and cause them to listen carefully, leading them to be more explicit and determined in their explanations [4], as well as eliciting critical thinking and raising it to a higher level [3,5–7]. Furthermore, questions have been found to help students recall the information learned and engage them in classroom activities [4–7]. Especially teachers' follow-up questions are considered a mark of being interested in their students' thinking and ideas [8].

This study focuses on analysing the question modification strategies used for differentiation in mathematics and science classrooms in elementary and middle schools. While inclusive education aims to guarantee equal participation for all students in classroom activities and minimise the exclusion of students from the education system [9–11], differentiated or academically responsive instruction is key to promoting inclusive education in practice by adapting instruction to individual differences in heterogeneous classrooms [12–14]. Differentiated instruction refers to the means through which teachers modify curriculum objectives, content, methods, classroom activities, and assessments to respond to the diverse needs of all learners and maximise their learning opportunities [15];

see also [16,17]. It can be carried out on the following levels: what a student is to learn (content); how the student will learn (process); and how the student is to display what has been learned (product) [15]; see also [11].

Modifying teacher questions and their level of difficulty according to students' learning needs can be considered a part of differentiating one's teaching process [13]. Callahan and Clark [18] reported that, in practice, questioning plays a role in differentiating instruction by providing a conducive environment for increased student engagement and helping teachers to structure tasks and assess their students' knowledge and understanding. In addition, question modification strategies enable teachers to address the difficulties experienced by different students and adapt the question to the cognitive level of their students [19].

In Eritrea, where this study was conducted, classrooms are heterogenous, the class sizes are generally large, and resources for instruction and learning materials are scarce. In such situations, one of the instructional strategies that teachers can use to differentiate their instruction is questioning [6]. Using various question modification strategies can help to make the school curriculum accessible to all students [20] and help students with learning needs develop confidence [1,19]. Teachers' resourcefulness and innovative differentiated instruction practices have been found to play a central role in schools with limited resources [21], and instruction is teacher-driven [22]. It is in this context that this study aims to investigate the types of teacher question modification strategies and the functions they serve in differentiating instruction.

1.1. Types of Teachers' Questions

Teacher questions and questioning have been researched extensively [23]. Dahal, Luitel, and Pant [1] concisely defined questioning in the instructional context as any idea that requires a response from the learner in the classroom. Astrid et al. [5] defined a question as any sentence in an interrogative form that is used as an instructional cue or a stimulus and can arouse learners' interest in the learning contents or the teachers' directions. Questioning is also an indication of how much teachers encourage students' engagement [6].

The type of questions and the way in which they are asked influence the nature of the cognitive processes students engage in when constructing knowledge [19,20,24]. Previous studies on mathematics and science classrooms have shown that teachers predominantly use closed-ended, low-level questions [2,25,26]. These questions may help teachers determine students' prior knowledge and misconceptions about a topic, keep students' attention focused on the lesson or task in progress, and encourage students to review material they have already learned [26]. In science classrooms, closed-ended questions are typically used in whole-group settings to support students' recognition and recall of information [25].

Contrary to closed-ended questions, so-called open questions allow a wide range of possible responses and promote students' evaluation and deep thinking [19]. Such questions require students to think on higher cognitive levels, enabling them to imply, infer, evaluate, and formulate hypotheses and make judgements [2]. In addition, teachers' open-ended questions promote dialogical interaction and pedagogic engagement, which lead to the active participation of students in classroom discourse [20]. Indeed, Dahal et al. [1] argued that the pedagogical design should utilise questioning as a mathematical tool which helps students actively analyse and process information to answer challenging questions (see also [2]. Lee and Kinzie [25] noted that teachers in science classrooms use open-ended questions, especially during experiments (demonstrations) in small-group settings, seeking to elicit predictions and reasoning.

Teacher questions and questioning have been examined based on different learning theories. According to Dahal et al. [1], teachers use questioning to control, monitor, and/or engage students in learning, which is an application of behaviourist theory. In contrast, understanding questioning as part of the process of knowledge construction lies at the core of cognitive theories of learning [26]. Oliveira [3] stated that questioning is used to diagnose and extend students' ideas and scaffold their thinking. Ormrod [26] related questioning and teacher questions to individual learning perspectives and social constructivism. Students can construct knowledge individually as well as socially through classroom interactions aided by questioning [1,26,27]. In relation to this, Pritchard and Woollard [28] noted that one characteristic of constructivist teaching is teaching through questioning.

1.2. Teachers' Question Modification Strategies

Teachers use question modification strategies to modify the form and/or the content of their questions when they aim at elaborating on students' thinking [20], fail to obtain students' verbal responses to their initial question, or when they sense that the question is difficult for the students [7,29]. Teachers might modify their questions at the word or sentence level as well as through question reframing [7]; see also [24]. Tofade, Elsner, and Haines [19] argued that question modification strategies greatly influence the effectiveness of the question, and they view them as an indication of teachers' effectiveness. Alshenqeeti [24] also noted that calling on individual students to answer a question after modification helps to break the silence and elicit responses.

Teachers tend to use a variety of strategies to modify their questions. These strategies include repetition [2,29,30], rephrasing [7,19,29], simplification [7], offering cues, and providing examples as a way of modifying the initial question [29]. Other types of question modification strategies include pauses, code-switching and/or translation [7,30], as well as probing and decomposition [7]. Hu, Nicholson, and Chen [31] also added chaining to the list, referring to situations in which the teacher ties two exchanges together with a question (e.g., 'Do you agree with him? What do you think of her reply?').

The usage and frequency of the different modification strategies are impacted by the familiarity or unfamiliarity of teachers with the strategies [31]. Repetition has been reported to be the most frequently used modification strategy [2,29], followed by simplification and rephrasing. Meanwhile, probing, chaining, or decomposition are rarely used [29]. According to Cabrera and Martinez [32], repetition provides opportunities for students to learn concepts they did not initially comprehend and may give them more time to process information. Conversely, Tofade et al. [19] argued that repetition of the same question several times could be intimidating to students. They further argued that the combination of repetition, rephrasing, simplification, and decomposition might not produce the desired responses from students [19]. These strategies have also been criticised, as the use of many questions accompanied by modifications could be an indication of the dominance of teacher talk, with minimal room for student-to-teacher and student-to-student interactions [33].

Jusoh, Abdul Rahman, and Salim [7] indicated that code-switching is one of the most widely used teaching techniques and the 'most straightforward strategy' for modifying challenging questions in English-as-a-second-language classrooms. Code-switching refers to the use of two or more languages (dialects or codes) within the same speech exchange or communicative episode, whereas translation is understood as a form of code-switching [34,35]. It has also been noted that language issues are important aspects of mathematics and science teaching, where students are required to use the language of science with peers and teachers and to engage in knowledge construction and evaluation [2]; see also [3]. For instance, teachers' questions display authority in classroom discourse and can elicit either lower- or higher-level thinking or encourage or discourage students' uncertain, tentative, and experience-based answers [3]. Indeed, Oliveira [3] indicated that these aspects of classroom discourse in mathematics and science classrooms are directly influenced by language, which is also the focus of this study.

1.3. The Aim of this Study

In this study, we examine the kinds of question modification strategies elementary and middle school teachers use in mathematics and science classrooms as a means of differentiating their instruction. Earlier research on question modification is limited to the secondary and tertiary education levels, and little is known about how teachers modify their questions at the elementary and middle school levels. However, these levels represent basic education and, thus, form the critical foundation for implementing inclusive education. The research gap is even wider when relating question modification strategies to differentiated instruction because, regardless of the fact that several independent studies being made on question modifications and differentiated instruction, the link between the two has not been studied previously. The present study aims to address this research gap by investigating the role teacher question modification plays as an instructional tool in differentiating instruction in mathematics and science classrooms in Eritrea. This study is also expected to add to the research knowledge on how mathematics and science teachers in poorly resourced, large class-size, teacher-centred, and heterogeneous classrooms modify questions to differentiate their instruction. This study seeks to answer the following research questions: (1) What kinds of question modification strategies do Eritrean teachers use in mathematics and science classrooms to differentiate their instruction? (2) What functions do various question modification strategies serve in differentiating instruction?

2. Materials and Methods

2.1. Study Context

The research context of this study is Eritrea, located in the Horn of Africa. The current Eritrean education system consists of the following three tiers: compulsory basic education (elementary school, grades 1–5, and middle school, grades 6–8), secondary education (grades 9–12), and further and higher education [36]. Elementary-level education is offered for all nine ethnic groups in their own mother tongue [37,38], whereas English is the medium of instruction from grade 6 onwards. Regardless of this policy, Tigrigna (50% of the population are Tigrigna, and, thus, it is the most widely spoken language in Eritrea) and Arabic are officially considered working languages [39], which implies that Tigrigna dominates classroom interactions when students move from elementary to middle schools (see [40]).

As a signatory of international declarations and conventions advocating inclusive education [41], the Government of Eritrea is committed to addressing the diverse needs of all learners regardless of their disabilities or backgrounds. However, until recently, inclusive education was considered the provision of educational services for children with hearing and visual disabilities in mainstream classrooms in regular schools [21]. Since 2005, the government of Eritrea began to set up separate self-contained classrooms in some elementary schools throughout the country for children with intellectual and developmental disabilities [36,42,43]. Whenever these children show progress in their performance, they have an opportunity to attend lessons in mainstream classrooms. Thus, despite the commitments to the principles of inclusive education, the Eritrean education system is not fully inclusive. The quality of resources, instructional materials, as well as teacher preparation programs to successfully implement an inclusive approach are limited (See [10,38,42,43]).

Recent studies revealed that, even though Eritrean teachers face many challenges and lack specific training for implementing inclusive education, they tend to hold positive perceptions towards learner-centred interactive pedagogy [22] and differentiated instruction [21]. However, both practices are overshadowed by traditional teacher-directed practices and large class sizes (50 to 70) [21,22,40]. As a result, whole-class learning is the most common instructional practice, while small-group and one-on-one instructions are limited (see [21]). Further, the rigid and centralised curriculum leaves little room for flexibility and adaptation at the school level [22,40].

2.2. Data and Participants

The research data consist of videotaped recordings (11 lessons) of classroom interactions in eight mathematics and science classrooms. For these two subjects in the Eritrean context, teachers typically apply diverse teaching methods and provide various activities to engage students, while in some other subjects, instruction is based more on lectures. The data included five elementary school classrooms (grades 4 and 5) and three middle school classrooms (grades 6) from five different schools and from two cities in Eritrea (three public schools and two private schools). The cities were purposefully selected because of their diverse student populations representing several ethnic groups and different language backgrounds.

The classroom sizes in the researched schools varied from 50 to 70 students, and a total of 455 students participated in this study. These students represented several ethnolinguistic groups (including minority groups). In addition, there were some students with physical and sensory disabilities, learning difficulties, autism spectrum disorders, as well as intellectual and developmental disorders included in the classrooms. Several students came from poor home backgrounds, and some of them were taken care of by their grandparents or other guardians. Despite the diversity of the special educational needs and the large classroom sizes, there was only one teacher in each classroom. Moreover, apart from one mathematics teacher who was also trained as a special education teacher and who was teaching in a mainstream classroom, there were neither special education teachers nor support teachers in the classrooms observed.

The length of the observed lessons varied between 32 and 43 min (mean = 37 min). The lessons consisted of teacher-directed whole-group instructions, teacher questioning, group work, and independent activities. The independent activities included individual students working on the blackboard (mathematics lessons) and field experiments (science lessons). All the lessons took place as part of the normal school day. Engaging students in questioning and answering were typical features of both mathematics and science classrooms. However, the mathematics classrooms also engaged students in solving mathematical problems individually and in small groups. Additionally, the students actively commented on and gave feedback to the teachers and other students who worked on the blackboard. By contrast, the science classrooms involved teachers' presentations using diagrams and some demonstrations and experiments inside and outside the classroom.

Eight teachers participated in this study, four males and four females. Their teaching experience varied from 6 to 25 years (mean = 16.5 years). The participants were purposefully recruited for video-recorded observation through consultation with directors and pedagogic heads, who identified teachers who were thought to utilise different teaching methods. Local approval and informed consent were sought from the district school authorities, school principals, teachers, and parents of all the students who participated in video recordings of classroom instruction. Prior to data collection, the first author discussed the aims of this study with the participants as well as how the data would be utilised. The participants were informed that they could withdraw their consent anytime [44]. An overview of the participants and the observed lessons is provided in Table 1.

2.3. Procedure

The data were collected in 2019 using three video cameras. Two cameras were placed in the front right and left corners of the classroom at an angle to capture most of the classroom activities. The third camera was held by a research assistant sitting on one side of the room, who moved the camera slightly to follow the teacher's movements around the classroom without distracting the teachers and the students. A microphone attached to a mobile phone was placed inside each teacher's clothing to audio-record everything the teacher was saying throughout the lesson. For each teacher, one or two lessons were video-recorded on two consecutive days. The abundant video footage and audio data provided a rich source for data reconstruction [45], from which the authors defined the actual data set for analysis.

The selected video recordings from the grade 5 lessons were transcribed and translated from Tigrigna to English. The medium of instruction in grade 6 was English. However, when the data contained code-switching, the episodes were translated from Tigrigna and Bilen (another local language) to English. All the transcriptions and translations were made by the first author (Tigrigna speaker) with the help of two Bilen speakers. The anonymity of the participants from harmful use of data was maintained by removing personal (background) identifiers and using pseudonyms [46,47].

Table 1. Research participants and the collected data set.

Pseudonym of the Teacher	Gender	School Type	Teaching Experience in Years	Educational Background	Grade	Subject	Number of Students	Number of Video-Recorded Lessons	Topic of the Lessons
Adam	M	Public	22	Certificate	6	Math	60	2	Business mathematics
Eyob	M	Private	23	Certificate	5	Math	70	1	Decimals and fractions
Martha	F	Public	24	Certificate	5	Math	50	1	Integers
Mehari	M	Private	25	Degree	6	Science	60	2	Lenses and magnifying glasses
Miriam	F	Public	7	Diploma	5	Math	55	1	Decimals and fractions
Natsnet	F	Private	6	Degree	6	Math	60	1	Expressing ratios and fractions
Solomon	M	Public	12	Diploma	4	Math	50	2	Computing proper, improper, and mixed fractions.
Tsega	F	Private	13	Certificate	5	Science	50	1	Metamorphosis in the life cycle of animals
Total							**455**	**11**	

Note: Certificate = 1 year of college education; Diploma = 2–3 years of college education; Degree = 4 years of college education.

2.4. Data Analysis

A qualitative interaction analysis [45,48] was performed to analyse the data. Interaction analysis situates knowledge and action in the details of naturally occurring everyday social interactions in time and space [48]. The goal of interaction analysis is to find patterns in how participants utilise social and material resources to structure their interaction with others [48]. Since interaction analysis represents microanalysis [47], it enabled us to notice how teachers locally interpret what is going on in the classroom during questioning sessions, how students react to their questions (i.e., whether they answer or fail to answer the question correctly), and how teachers interpret students' responses and actual learning needs when modifying their questions [48]. Interaction analysis was also related to our view of learning—the sociocultural learning theory. In this theory, learning is viewed as an ongoing process of social participation in which learning occurs through people's collaborative knowledge construction through interactions with one another [49–51].

After carefully watching the video recordings of the lessons, the first author identified all the questioning episodes (N = 227) in the data and transcribed and translated them into English. The analysis began by identifying all the question modification episodes from these questioning episodes. The following criteria were used to identify these episodes: (1) a teacher presents two or more consecutive questions about the same topic either in one turn or in a close-knit turn after a student response; (2) the reason for modifying an original/initial question is related to the students' incorrect answer and misunderstanding or failure to elicit responses from the students. Thus, the question modifications were made in order to help students understand the learning contents and to answer the question or solve the problems either individually or in small groups. A total of 155 episodes (94 in mathematics and 61 in science) contained either one or more question modifications, and there were 295 question modifications (any question modification strategy appearing within each questioning episode was counted only once, although a teacher used the same strategy several times during the episode). Most of the video recordings provided data for this study, while one video-recorded lesson from a mathematics teacher did not provide the required data. This might have been due to the teacher's tendency to present straightforward questions that were immediately answered correctly by the students.

After identifying the question modification episodes and sharing them with all the authors, the first and last authors examined the selected episodes separately and classified them into categories that emerged from the data (data-driven analysis). The classification was based on how and to what extent teachers modified their questions. The differences between original and modified questions might be related either to the content of the questions (e.g., were the word choices used in the questions changed or repeated?) or to the form of the questions (e.g., did teachers shorten, expand, or break down an initial question or did they demonstrate the content of the question in some way?). The first and last authors cross-checked their preliminary categorisation through discussions to reach a mutual understanding of the question modification strategies used by the teachers. However, the authors did not count inter-coder reliability. Based on the above-mentioned dimensions and the discussions with all the authors, teachers' modification strategies were classified into five types: repetition; rephrasing; clarification; code-switching; and decomposition. Subsequently, the analysis focussed on what purposes these question modification strategies served in classroom interaction [24]. The question modification strategies and the functions they served in the interaction were identified inductively from the video recordings, and the strategies were conceptualised and named based on theory and the previous literature (see, e.g., [19,29,30]. The six most representative and illustrative episodes were selected for the data extracts to demonstrate how the teachers used question modification strategies in practice in classroom interactions. The transcription symbols found in the extracts can be found in Appendix A.

3. Results

The data analysis revealed five different question modification strategies utilised by teachers either independently or in combination (see Table 2). Four of the strategies, repetition, rephrasing, clarification and decomposition, were used by both elementary and middle school teachers, and apart from decomposition, they were used by all seven teachers who modified their questions in response to the students' needs. Meanwhile, code-switching was only used by middle school teachers, whose medium of instruction was English, the students' second language. When teachers leaned on a combination of different modification strategies for the same question, repetition was the most common strategy used concurrently with the other strategy types.

The majority of teacher question modification episodes occurred during whole-class dialogue. There were also one science and three mathematics lessons, where teachers (Mehari, Adam, Eyob, and Miriam) gave defined tasks and questions to different mixed-ability small groups of students. Sometimes, the difficulty, complexity, and abstraction levels of these questions varied. In addition, all the mathematics teachers offered blackboard assignments to students, but only one of these teachers, Solomon, gave different questions (the difficulty level of which varied) to individual students during blackboard work. The difficulty level of questions was also increased when a student managed to solve simpler problems. All the names used for teachers and students in the extracts are pseudonyms.

3.1. Repetition

Repetition, that is, repeating one's question in an original or a shortened form either once or many times, is one of the most common question modification strategies teachers used in science and mathematics classrooms. This occurred in 57% of teacher question modification episodes. Repetition was mostly used as an independent strategy, but in 23% of the repetition episodes, it was used in combination with the other question modification strategies. This strategy was only used in whole-class teaching, as seen in Extract 1. This extract is from a grade 5 science classroom with 50 students. The topic of the lesson was a 'metamorphosis in the life cycle of animals'.

Table 2. Use of the details in the question modification strategies.

Question-Modification Strategies	Repetition	Rephrasing	Clarification	Decomposition	Code-Switching
Main content	Question is repeated wholly or partly	A word or a phrase of an original question is reformulated	Adding further explanation, additional information, or a reminder of the previous lesson to the question	A complex question is broken down into sub-questions	Shifting language from English to local languages
Classroom context	Whole-class dialogue	Whole-class dialogue and small group discussions	Whole-class dialogue and blackboard work	Whole-class dialogue and blackboard work	Whole-class dialogue and one-on-one guidance
Main function	Drawing students' attention to a question, and engaging them in the classroom dialogue	Making the questions more understandable by guiding students' attention to the core of the problem	Addressing a gap in students' knowledge by teaching and rehearsing the learning content	Guiding students step by step to solve complex questions through simplification	Addressing language barriers and engaging minority students in the dialogue
Percentage of the episodes (N = 155), in which the question modification strategy was used	57%	48%	45%	22%	19%

Extract 1:

Elementary school, teacher = Tsega, student = Embaba.

1	Tsega:	Animals who undergo incomplete metamorphosis? (some hands raised)
2		(2.0.) Animals who undergo incomplete metamorphosis? (3.0) Animals
3		who undergo incomplete metamorphosis? (5.0) (teacher is moving
4		towards the back) Embaba (calls a girl who sits in the last seat)
5	Embaba:	Locust.
6	Tsega:	Locust.
7	Embaba:	Cockroach.
8	Tsega:	Cockroach.
9	Embaba:	Cricket.
10	Tsega:	Cricket. Very good, excellent.
11		(Tsega smiles, and students clap when seeing the gesture of her hands)

In Extract 1, the teacher (Tsega) repeats her original question after only a few students have raised their hands, 'Animals who undergo incomplete metamorphosis?' (line 2). After this repetition, more of the students raise their hands. However, Tsega waits for 3 s (line 2) and then repeats the question for the third time exactly in the same form as before (lines 2–3). By this time, almost all 50 students have raised their hands. After a 5-s pause, Tsega calls on 'Embaba' (line 4), a girl who is sitting in the back seat. Embaba lists the answers correctly (lines 5, 7, and 9), and Tsega confirms each answer by repeating it after the student.

This extract showed that the repetition of the question and the pauses between them slowed the pace of learning and encouraged the students to raise their hands in an attempt to answer the question. This was reflected in the increasing number of hands raised after each repetition and pause. The repetition also seemed to work by eliciting the desired answer from one student, Embaba, who was sitting at the back of the classroom and seemed to be absorbed in her own thoughts before raising her hand after question repetitions. Thus, the aim of this question modification strategy was to grab the attention of the whole classroom and elicit a response from students in a situation where only a few of them had raised their hands after the teacher's question. In addition, this strategy was used when teachers sought to correct students' incorrect answers. Since repetition was the easiest and simplest strategy to put forward the questioning episode, this might explain its prevalence in the data. Although the use of repetition may not promote students' access to the learning content, it might contribute to differentiation by slowing the pace of instruction, benefitting some of the students.

3.2. Rephrasing

In 48% of the teachers' question modification episodes, rephrasing was used as a strategy. It was used mainly independently but in 19% of the rephrasing episodes, also in combination with the other question modification strategies. In this case, teachers expressed their original question in a different way by changing or adding a word or phrase to their initial question. For instance, instead of asking, 'now have you observed the error?', a math teacher might rephrase it, 'where do you think the error might be?' Teachers use rephrasing when students give incorrect answers or are reluctant to answer in a whole-class teaching environment and sometimes in a single group during small-group discussions. The following extract is from a grade 5 mathematics classroom, where the teacher asks questions of the whole class before they begin to work in small groups on the topic of decimals and fractions. The class size is 55 students.

Extract 2:

Elementary school, a female teacher = Miriam, students = Joel and Berhane.

1	Miriam:	What is the symbol, when we say out of hundred? (1.0)
2		(several students are lifting their hands shouting 'teacher'.) (1.0)
3		What is the symbol? (with emphasis)
4		(More hands raised) (5.0)
5	Miriam:	Yes, Joel.
6		(the boy sitting in the back is initially reluctant, but finally raises his hand in hesitation when the teacher calls his name)
7	Joel:	It has the shape of hundredth.
8	Miriam:	It has one out of hundredth sign. But what do we call it in English?
9		(Several students shout 'teacher, teacher'.)
10	Miriam:	It is called what? Yes, Berhane. (calling on another boy)
11	Berhane:	Percent.

The teacher (Miriam) starts her lesson by asking, 'What is the symbol when we say out of hundred?' (line 1). Although several students raise their hands, she repeats her question in line 3 in a shorter form, 'What is the symbol?' Then, she calls on Joel, a boy who was first hesitant to raise his hand but eventually slowly raised it (line 6). However, his answer, 'It has the shape of hundredth' (line 7), does not seem to correspond to Miriam's expectations. This is reflected in how Miriam builds on what Joel said in line 6 by replacing Joel's word 'shape' with the word 'sign' and the expression 'hundredth' with 'one out of hundredth'. In addition, Miriam begins to present a rephrased question using the conjunction 'but', which implies that the connected phrases are not directly related (line 8). The rephrased question, 'What do we call it in English?' (line 8) suggests that the teacher is searching for a specific word as an answer. This modification is followed by expressions of excitement and willingness to answer from several students, who shout 'teacher, teacher' while raising their hands (line 9). Miriam again rephrases her question as 'It is called what?' and lets another student, Berhane, answer (line 10). Berhane immediately answers correctly, 'Percent' (line 11).

This extract showed that rephrasing might involve either the insertion of a word (line 3) or presenting the question in a very different form (line 8). However, in all cases, the changes were small, and they were intended to elicit appropriate responses from the students. Although the first rephrasing did not produce the response expected by the teacher, the last one (line 8) elicited an appropriate response from the student (Berhane).

In summary, the function of rephrasing is to offer the original question in a slightly modified and more focused form to elicit appropriate responses from students. What is noteworthy is that the rephrased questions were not typically presented in a more concrete form than the original one. Rather, they defined the teacher's purpose more specifically by emphasising certain elements of the original question based on the students' incorrect answers. On the one hand, this strategy seemed to help the students engage in attempting to answer, but on the other hand, it sometimes required the use of other question modification strategies, such as repetition and cueing, before the students produced the correct answer. Thus, the efficiency of rephrasing from the viewpoint of differentiated instruction depended on how carefully the teacher was able to observe and interpret the causes of students' misunderstanding when highlighting certain core contents of the original question.

3.3. Clarification

Clarification appears in the data when the teachers provide the students with extra explanations for an original question through elaborations, cues, and reminders of previously learned or related lessons or formulas. For example, when clarifying an original question on the additions of decimals, a mathematics teacher (Eyob) presented the following rule: 'Even if we add zero, there is no problem. It will become easy for addition.' This strategy occurred in 45% of the teachers' question modification episodes and was used by mathematics teachers in 16% of the episodes in combination with decomposition. Clarification was mainly used during whole-class teaching, especially in situations after one or many students experienced difficulties working out a problem on the blackboard.

The following extract is taken from a grade 6 mathematics classroom with 60 students. The topic of the lesson was 'business mathematics'. The teacher wrote the question on the blackboard and started reading it to the students.

Extract 3:

Elementary and middle school; a male teacher = Adam; a student = Mary.

1	Adam:	Abel bought a goat for 350 Nakfa and sold it for 300 Nakfa. What is his
2		cost price? (reads from the blackboard) (1.0) What is the cost price of
3		the goat?
4	Several students in unison:	300.
5	Adam:	Cost price? (with emphasis) (1.0) Bought. (2.0) Sold (underlining both words on the
6		blackboard).
7	Mary:	The cost price is 350. (A girl answered)
8	Adam:	Cost price is . . .
9	All students and teacher in unison:	[350 Nakfa]

In Extract 3, the teacher (Adam) begins the episode by reading the question, 'What is his cost price?' (lines 1–2) from the blackboard and then rephrasing the question a little in lines 2–3. Several students shout the wrong answer '300' in unison (line 4). Adam corrects the students by repeating the main concept of his original question ('cost price?'), with emphasis (line 5), which is followed by clarification. The clarification offers a cue to students by underlining two words from the question on the blackboard, 'bought, sold', with pauses in between (line 5). The pauses and the use of a loud voice indicate the emphasis the teacher gives to the cues. In line 7, a student named Mary is able to answer the question correctly, '350'. While Extract 3 shows how clarification was made through relatively simple cue-giving, the following extract shows a more elaborate and detailed way of using this strategy. This extract is from a grade 4 mathematics classroom with 50 students. The topic is computing proper, improper, and mixed fractions. In the extract, a mathematics teacher clarifies the question $4/7 \times 3/8$ after one student fails to answer it, and a second student struggles for 2 min and 13 s before answering it correctly.

Extract 4:

Elementary and middle school; a male teacher = Solomon.

1	Solomon:	Now, what do you think you observe? (1.0) What is your major problem?
2		(4.0) $4/7 \times 3/8$ (writes the question on the blackboard silently). Is this not
3		the question, yes?
4	Some students:	Yes
5	Solomon:	Now follow me: (2.0) can eight be multiplied and go back to become four?
6	Some students:	No, no.
7	Solomon:	When eight is multiplied it will always go forward. If I say eight times one,
8		eight; with two, sixteen; with three, twenty-four; with four, thirty-two; it
9		keeps on growing higher. However, if you start with the bigger lower
10		number (denominator), you cannot understand it. With this (pointing to
11		number 8), you should go with its multiples. (1.0) I have to ask 'the upper
12		(numerator) four should be multiplied by what number to get eight?' (1.)
13		"We should take the smallest number, always. Am I right?" (with emphasis)
14	Some students in unison:	Yes.
15	Solomon:	Therefore, in order to take a small number; by four, one; by four, two. The
16		simplified number you wrote at the bottom should give you the result eight,
17		because two times four gives you eight (3.0). In order not to get confused,
18		always take the smallest numbers, so that you can multiply. (he provides
19		further explanation for a few seconds), do we agree?
20	Students in unison:	Yes.
21	Solomon:	(2.0) Here, the seven and three (pointing to the right side of the question).
22		If I say three times one, it is three; three times two, it is six; three times three
23		it is nine. Is there any number that links the two (seven and three) or not?
24	Majority of the students in unison:	No there is not.
25	Solomon:	Therefore, you multiply nominator with nominator, and denominator with
26		denominator and that is over (multiplying and writing the result as a single
27		fraction, three over fourteen).

In Extract 4, the teacher (Solomon) starts the clarification episode after observing how two students, Saba and Elsa, struggle with simplifying a fraction. First, he presents the problem to the whole class, 'What did you observe?' (line 1) and 'What is your major problem?' (line 1). After writing the original question on the blackboard (line 2), he reminds the students about the mathematical rule in the form of the question in line 5. The rule is related to the fact that it is impossible to multiply a natural (counting) number and then obtain a lower number as an answer. Solomon's clarification seems to be understandable to the students, as they answer correctly in unison, 'No, no' (line 6). In lines 7–13 and 15–19, the teacher also gives a short explanation of the principle and concrete examples of multiplying, 'If I say eight times one, eight; with two, sixteen; with three, twenty-four . . . ' (lines 7–9).

In lines 9–11, the teacher clearly indicates how the students may fail to answer the question if they start the simplification process with the denominator, the number 8, which is larger. He explains that the starting point for solving the problem is the upper numerator, which is the smaller number, in this case, 'four' (lines 11–12). He speaks with emphasis and reminds the students about the exceptionless rule, 'Always we should take the smallest number. Am I right?' (line 13). 'Am I right?' is the question tag through which the teacher expresses that he expects the students to agree with his statement. The majority of the students also produce a confirmatory response, replying 'yes' in unison in line 14. A similar kind of confirmation is also obtained from the students in line 20 to the teacher's tag question, 'Do we agree?' (line 19). In lines 15–17, the teacher continues his clarification based on the explanations he gave in lines 7–13. The teacher reaffirms that students should take the smallest number 'in order not to get confused' (lines 17–19). On the second side of the question (seven and three), he asks if these numbers have anything in common (lines 21–23). The reply from the students in line 24, 'No, there is not', shows that they have understood that simplifying ends here, and they should move on to multiplication and get the result 3/14. In this extract, Solomon uses cues three times (lines 5, 13, and 23), provides extra elaborations (e.g., lines 9–11 and 15–19) and provides the students with a formula (lines 25 and 26).

The function of clarification as a strategy seems to be demonstrating, explaining and instructing students on learning contents that are abstract or complicated and perceived by the students as challenging. Therefore, after observing students' challenges in answering the original question, teachers might begin a teacher-led instruction sequence in which they demonstrate how the problem should be solved. Thus, at its best, the use of clarification was an indication of teachers' readiness to flexibly change their teaching agenda according to students' actual needs, which is an integral part of differentiated instruction. In Extract 4, the intended result was met on three occasions when students replied to the teacher correctly (lines 14, 20, and 24). However, since the understanding of all students was not checked, the need for additional instructional support remains unknown.

3.4. Decomposition

In this strategy, teachers break down a question into several smaller parts, thereby directing the problem-solving step by step until the students have answered the whole question presented to them at the beginning. This question modification strategy, occurring in 22% of the question modification episodes, is especially common in mathematics lessons. Decomposition seemed to be a useful strategy as such since it was almost purely utilised independently and only in 9% of the decomposition episodes in combination with clarification. Decomposition usually appeared in a context where a mathematical problem was written first on the blackboard or read from the textbook, after which teachers began to break down the question into smaller parts, to which students were also requested to reply. The teachers might also deal with each section of the question first and finally provide a general conclusion to answer the original question (e.g., 'first let us place decimal numbers in their proper places and begin with the right-end side'). Decomposing the questions could also be accompanied by repetition as well as clarification, and code-switching. The use of decomposition often occurs after individual students working on the blackboard fail to answer the question correctly.

The following extract is taken from a grade 6 mathematics classroom (60 students), where the topic of the lesson was expressing ratios and fractions. First, the teacher reads a question from the textbook, 'A country has about 2600 villages, out of which 1680 villages have electricity supply. Express the villages without electricity as a fraction of the total number of villages.' Then, she calls on two students to work on the blackboard independently. After observing that they produced an incomplete answer, she began to decompose the question both in English and Tigrigna.

Extract 5:

Elementry and middle school; a female teacher = Nastnet; students Samuel and Noah.

1	Natsnet:	Express the villages out of electricity as a fraction of the total number
2		of villages. ናይቶም ኤሌክትሪሲቲ ዘይብሎም ምስ ናይ መን ኢሉና፧ (The translated version is situated inside the square brackets, immediately following the original Tigrigna version) [It asks us to
3		over fraction those which don't have electricity, with which?] ምስ [with]
4		the total number of villages. Samuel and Aron ንዑ [come] (she calls on
5		two boys to work on the blackboard, who work for a while). ሬሾ ገይሩላ
6		ድዩ፧ [has he put a ratio?] (3.0) What do we do if we are to find those
7		without electricity?
8	Some students in unison:	ነጉድል [we subtract]
9	Natsnet:	ክነጉድል ኣሎና [we have to subtract]
		(18-s-long data removed where the teacher and the student are subtracting 1680 from 2600)
10	Natsnet:	ናይ መንን ናይ መንን ሬሾ ኢሉና፧ [It asked us whose and whose ratio?]
11	Students in unison:	እቶም ኤሬክትሪሲቲ ዘለዎም [those with electricity] with እቶም ኤሌክትሪሲቲ
12		ዘይብሎም [those without electricity]
13	Natsnet:	How many do have electricity?
14	students and teacher in unison:	One thousand six hundred eighty (Natsnet writes it on the blackboard).
15	Natsnet:	Without electricity?
16	students and teacher in unison;	Nine hundred twenty (Natsnet writes it on the blackboard).
17	Nastnet:	One thousand six hundred eighty over nine hundred twenty (she writes 1680/920 on the blackboard).
18		This is the ratio.
19	Majority students in unison:	Zero by zero.
20	Natsnet:	So, ክነፋኹሶ ኣሎና መስለኒ፧ [I think we need to simplify?] (3.0) hundred
21		sixty eight out of ninety-two. እንዳበልና ክነፋኹሶ ንኽእል ኢና [We can
22		continue simplifying by two]
23	Some students:	Yes.
24	Nastnet:	እህ፧ [what?] (1.0). By two ክንደይ ኣሎና፧ [How much do we have?]
25	Natsnet and students in unison:	By two, eighty-four, by two, forty-six.

26	Several students:	By two (shouting).
27	Natsnet and students in unison:	(2.0) By two, forty-two]
28	Several students:	By two, twenty-three (shouting).
29	Natsnet:	ካብዚ ክጎድል ይኽእል ድዩ፧ ክፋኾስ፧ [Can it be subtracted? Simplified?]
30	Majority students and teacher in unison:	ኣይኽእልን! [it cannot]
31	Natsnet:	እንታይ እዩ፧ [What is it?] Prime ስለ ዝኾነ [because it is prime]. እሀ፧ [yes?]
32		ካብኡ ንንዮው ክፋኾሰልና ኣይክእልን እዩ። [It cannot be simplified beyond that]
33		ስለዚ ኣርብዓን ክልተን ኣብ ልዕሊ ዕስራን ሰለስተን መጺኣትልና ኣላ።. [Therefore, we
34		get the result as forty-two over twenty-three.]

In Extract 5, the teacher (Natsnet) begins by reading the question from the textbook in English, followed by repeating each section in Tigrigna, which indicates that Natsnet is using the repetitive function of code-switching. In lines 2–4, she concretises what is requested in the question. Samuel and Aron move forward to compute the question, which they do with some gaps. This is evident when Nastnet remarks, 'Has he (the first boy) put a ratio?' (lines 5–6). This is followed by decomposing the original question into its parts after she asks, 'What do we do if we are to find those without electricity? (lines 6–7). The students seem to quickly grasp the idea, answering, 'We subtract' (line 8). The teacher confirms this in line 9, and both the teacher and the students begin to subtract 1680 from 2600 step by step. In line 10, the teacher returns to the part of the original question, 'Whose and whose ratio?' This seems to act as a reminder to the students. They reply to her correctly (lines 11–12). In lines 13 and 15, Natsnet asks each section of the question, while the students reply in lines 14 and 16, respectively. After getting both figures with the students, she shows them the exact number to simplify as a ratio in lines 17–18, writing 1680/920 on the blackboard. This immediately elicits a response from the majority of the students as they shout, '0 by 0', knowing exactly what to do with it (see line 19). Natsnet confirms they are correct, suggesting, 'So, I think we need to simplify?' with a brief 3-s pause and writing the simplified figure, which is now 168/92 (lines 20–21). The simplification process continues until line 28. After this, the teacher closes the questioning sequence in lines 29 and 31–32 and explains why they cannot go any further. The students show they understand this by replying to the teacher's question, 'Can it be subtracted? Simplified from this? (line 29) with 'No, it cannot' (line 30). This final explanation brings the decomposition process to an end.

The teacher first uses subtraction as a decomposition strategy to obtain the number of villages without electricity. This step is followed by writing the result in a ratio form to move forward in the simplification process with the students. The teacher decomposes the question into a much simpler form by helping the students to simplify the figure until they arrive at a point when they can no longer divide by 2. What was consequential in the immediate interaction was that each strategy that the teacher used generated a correct response from at least the majority of the students, who replied immediately in unison. On one occasion, the students even took the lead and began simplifying when the teacher immediately wrote the ratio (line 19).

Thus, the extract indicates that the decomposition process helped the majority of the students to carry out problem-solving processes by concretising the original broad question by breaking it down into its components. The new sub-questions were more specific than the original ones and modelled how the broad problem should be solved. Thus, the teachers utilised decomposition to differentiate their instruction by lowering the cognitive level of the questions on the basis of the systematic task analysis and recognition of their students' starting level in relation to problem-solving.

3.5. Code-Switching

The fifth and final question modification strategy is code-switching, in which teachers use more than one language when modifying the questions. This strategy is most commonly used in middle school classrooms occurring in 19% of all teacher question modification episodes. It was utilised both as an independent strategy and in 30% of the episodes also as a means of repetition. Typically, teachers first present an original question to the whole class in English and then repeat the question wholly or in part in Tigrigna (the local language the majority of the students can understand). Code-switching is used both during whole class discussions as well as with specific individuals on a one-on-one basis.

The following extract is taken from a grade 6 science lesson, the topic of which is 'Lenses and magnifying glasses'. This is an experiment class, and the teacher and 60 students are outside in the field experimenting with how magnifying glasses burn paper in direct sunlight and the other uses of lenses and magnifying glasses.

Extract 6:

Elementary and middle school; a male teacher = Mehari; a student = Fadega.

1	Mehari:	What is the use of the magnifying glass? (1.0) ቀንዲ ስርሑ እንታይ እዩ እዚ፧
2		(The translated version is situated inside the square brackets, immediately following the original Tigrigna or Bilen versions) [What is the major use of this?]
3	Some students in unison:	Magnify.
4	Mehari:	ቀንዲ ስርሑ እንታይ እዩ፧ [What is the major use?] (with emphasis)
5	Few students in unison:	ንምርኣይ [to see]
6	Mehari:	T. Magnify. ሰባት የዕብዮም ክርእዩሉ እዮም ዝጥቀሙሉ ማለት እዩ [It means
7		people use it to see things magnified] (5.0) Fadega, wérenigéni? [What is
8		it?] (2.0) Wira ésrakhun? [What did it do?]
9	Fadega:	(- -) incomprehensible sound in Bilen.
10	Mehari:	Xawsekw Arikhwa? [What else?]
11	Fadega:	beher ése qwalisekw. [It burns]
12	Mehari	beher ése qwalisekw; Xawsekw Arikhwa? [It burns. What else?]
13	Fadega:	beher ése qwalisekw; Kwénwédo qwalisekw [It burns, magnifies, it
14		enlarges]
15	Mehari:	Kwénwédo qwalisekw [magnifies, it enlarges]
16		(other students laugh)

In Extract 6, the teacher (Mehari) presents his first question to the whole class in English (line 1). Immediately after this, he code-switches the same question, rephrased a little, to Tigrigna twice to help all his students understand the question (lines 1 and 4). Between the questions, some students have already answered 'magnify' in English, and after the last question, other students provide a different answer, 'to see', in Tigrigna. The teacher combines both these alternative answers when producing the right answer in line 6, 'Magnify. It means people use it to see things magnified' in Tigrigna. After a 5-s pause, he calls on Fadega, a student from a linguistic minority group, and asks him, 'What is it?' in Bilen (line 7). When the student does not immediately answer, he modifies the question in Bilen, 'What did it do?' (line 8). Fadega produces an answer in Bilen in line 9. This answer cannot be heard in the video, but the teacher seems to partly accept it because he asks him, 'What else?' in Bilen (line 10). The teacher continues talking to Fadega in Bilen until he is able to complete his answer correctly (see lines 11 and 13).

This extract indicates that the function of code-switching is to provide students with equal access to the original question when it is presented in their native language. This did not mean mere translation; rather, the teachers also clarified the meaning of the original question by presenting it in reformulated form during code-switching. Hence, code-switching might involve either rephrasing the original question or presenting the translated question in the same form as the original question. Thus, this question modification strategy helps teachers address the language barriers of students from the linguistic minority group by providing a sequence of questions in their own languages. The use of code-switching was an indication of teachers' awareness of and sensitivity to the ethnic and linguistic backgrounds of their students rather than forcing the students to use only one official medium of instruction in the classroom. The strategy can both optimise students' understanding of the original question and strengthen and respect their native language. These principles are also essential cornerstones of differentiated instruction.

4. Discussion

This study aimed to identify the question modification strategies Eritrean teachers use in mathematics and science classrooms to differentiate their instruction, as well as the functions these strategies serve in differentiating instruction. Although questioning styles and strategies have been widely examined, there is a lack of research relating question modification strategies to differentiated instruction. In addition, on the whole, concrete strategies for implementing differentiated instruction have seldom been studied in educational contexts where material resources are limited and class sizes are large. The following five question modification strategies were present in the data: repetition; rephrasing; clarification; decomposition; and code-switching. However, question modification strategies observed in other studies, such as chaining and probing (see [7,19,31]), were not present in our data.

These findings indicate a two-fold relation between the question modification strategies to the principles of differentiated instruction. First, the use of question modification strategies represented only a narrow view of differentiation; apart from giving individual questions (the difficulty level of which varied) to individual or small groups of students in some lessons, the teachers carried out traditional teacher-led, whole-class teaching. This was contrary to the student-centred starting point of inclusive education and differentiated instruction. This also meant that all the question modification strategies represented a reactive response to students' learning needs, not proactive planning, which would also be an essential element of differentiation [15]. Second, although differentiated instruction did not appear in this study as an individualised pace of learning, curriculum structure, or learning content for students, teachers used question modification strategies to engage all students in classroom discussions in oversized but mixed-ability learning groups. This strategy, which is aimed at guaranteeing equal participation for all students in classroom activities from their own individual premises, is also the main idea of inclusive education and differentiated instruction [11,12,52]. In addition, the teachers seemed to react sensitively and spontaneously to potential misunderstandings or learning challenges during questioning sequences, despite a large number of students and their potentially varied learning needs. Thus, although the idea of differentiation did not form a starting point for classroom organisation in this study, it did not prevent teachers from trying to provide students with optimal access to knowledge by responding to their situational learning needs.

Repetition was the most common question modification strategy, which all the teachers utilised frequently. Although it provided more time for students to produce responses (see [7]), it did not offer any alternatives for understanding the learning content, and thus, it had little to do with differentiating instruction. Therefore, the power of repetition to elicit responses from students and to provide an opportunity for slowly responding students to participate in the questioning sequence was strongly related only to the pauses and waiting times (see also [19]). Even though the use of repetition may not promote students' access to the learning content, it might contribute to differentiation by slowing the pace of instruction, benefitting some of the students. Rephrasing was also found to serve a similar purpose in facilitating students' responses. However, unlike repetition, rephrasing was a strategy through which teachers responded quickly to students' misunderstandings by narrowing their original questions to a specific part of the problem. Thus, the utility of rephrasing depended on how effectively the teachers captured the core of the students' misunderstanding and were able to modify their questions accordingly.

Clarification and decomposition were found to be the most highly developed question modification strategies from the viewpoint of differentiation by showing teachers' situational flexibility and readiness to change their original questioning agenda when noticing that it did not match students' needs and skill levels. Decomposition met students' learning readiness by reducing the cognitive requirements of the original questions, whereas clarification involved flexibly moving from the questioning to the instruction sequence when observing gaps in students' knowledge. Thus, it can be concluded that both question modification strategies represented differentiation on both the content and process levels by prompting thinking about the learning content on several levels and modifying the teaching strategies and mechanisms through which students could understand the learning content [15,52,53]. The findings revealed that teachers tended to clarify and decompose questions at the whole-class level; hence, it is difficult to evaluate their effects on individual students. However, teachers sometimes presented different questions and problems to different small groups of students, in which case they also differentiated the process through which students were intended to make sense of the learning contents [15,16]. Matching students' needs with individually tailored tasks is an essential part of differentiated instruction.

The use of code-switching was a holistic example of differentiating instruction through the content, product, and environment [15,53]. It was carried out either during whole-class teaching or individual one-on-one supervision, where linguistic minority students were given access to the content in their own languages, thus meeting the students' learning profile [16]. In line with the findings of Jusoh et al. [7] and Tofade et al. [19], code-switching also gave students permission to lean on their first languages when producing an answer to the original question and demonstrating what they had learned. This question modification strategy not only helped students to understand the main concepts but also influenced the emotional climate of the classroom positively by engaging all students in common work (see [19]).

The findings further revealed that the use of question modification strategies depended on the type of original questions the teachers used. The most complex and abstract higher-order questions called for clarification and decomposition as question modification strategies, while simply closed-ended questions that required the recall of factual information were answered easily when teachers utilised repetition. Thus, the successful utilisation of clarification and decomposition allowed teachers and students to address low- and high-level questions and facilitated a deeper understanding of the questions (see [2,16]). Conversely, low-level questions did not facilitate learning at a higher cognitive level, and thus, repetition and rephrasing were mainly utilised to encourage students to recall previously learned material or to think about certain concepts [16]. In fact, the sole use of low-level questions was found to diminish the need for using question modification strategies, as one of the eight video-recorded teachers only presented simple low-level questions and did not have to use question modification strategies in her questioning.

5. Limitations

Even though the video recordings provided an authentic opportunity to observe what really happens in instructional interactions in Eritrean mathematics and science classrooms and minimise researcher bias when reconstructing data, the quality of the data was weakened by the lack of available equipment and poor lighting in many classrooms. In addition, the interactions between the teachers and students during individual supervision as well as during small-group discussion sessions were not captured perfectly. Hence, only a few episodes of one-on-one interactions could be used in the analysis. The similarities and differences between the lessons for mathematics and science were not analysed, which can be considered a limitation. The use of three languages in the data and the translation process was also challenging. Since the sample size was limited to only five schools and eight teachers, the findings of this study require further confirmation using a larger sample of teachers and students from different contexts with scarce resources.

6. Conclusions

The overall findings show that question modification strategies are indispensable, dominant elements of classroom interactions and one of the most powerful forms of pedagogic talk in teacher-led and poorly resourced classrooms, such as those in Eritrea. While the lessons were mainly mass-produced, through questioning, the teachers were able to make the classrooms lively and engage students in the common discussion. The use of question modification strategies also showed the willingness of the teachers to modify their initial questions flexibly and creatively, especially when utilising clarification and decomposition. In addition, using code-switching as a question modification strategy served both demonstrative and affective functions in classroom interactions in the multilingual societal context. Due to the large class sizes, not all students were asked to demonstrate their understanding individually. However, the teachers modified their instruction according to their general observations and impressions or when some of the students failed to answer their questions correctly. Therefore, more information is needed about the use of question modification strategies in one-on-one teaching sessions, where there would be more opportunities to check students' understanding and differentiate the content of the questions according to individual learning needs by either lowering or raising their complexity levels. In addition, further research is needed on the relationships between repetition and waiting time (pauses), as well as on the effects of using different languages on question modification. The connections and combinations in using the question modification strategies that were identified are formed in the specific classroom contexts under study. Understanding the role of the different strategies in supporting students' learning can help teachers to further develop their practice. These findings, therefore, call for strengthening teachers' potentialities and expertise through ongoing in-service teacher training programmes, leaning on research-based teaching practices.

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Appendix A. Transcription Symbols

(1.0)	The length of the pause is 1 s or more.
[text]	First author's translation of text spoken in a local language.
(text)	Comments from the transcriber.
(- -)	Incomprehensible.

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