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Teachers' Language Practices in the Teaching of MATHEMATICS in a Grade Four MULTILINGUAL CLASSROOM, in Zambia

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ABSTRACT

Zambia has seventy-three (73) recorded languages with seven considered as major languages. The diversity of ethnic groups with their related languages has led to the existence of several traditions and cultural practices which have implications on the education of children. The Ministry of Education introduced the use of a familiar language as a language of learning in primary schools from grade one to four. The current study explored the teachers' language practices when teaching mathematics in a multilingual class. We sought to establish the language practices of teachers and learners in the process of mathematical knowledge acquisition in the classrooms. The research was carried out in two selected primary schools in Lusaka district, Zambia. The target population was teachers and pupils in the 4th grade whose mother- tongue was not the language of instruction. The research was qualitative in nature and it took the form of grounded interpretative classroom research. The lesson observations and recordings served as empirical basis of the results. The results showed that teachers used code-switching, translation, body language and visuals. The study recommended among other aspects continued use of code-switching as a bridging mechanism between the conversational register and the mathematics academic register.

Keywords: *Familiar Language, Code-Switching, Mathematics Register, Multilingualism, Language Practices*

Introduction

Zambia is multi-ethnic and multicultural. It has 73 recorded languages with seven (7) considered to be major. The diversity of ethnic groups with their related languages has led to existence of several traditions and cultural practices which have implications on the education of children (Tambulukani, 2015). Secada (1991) has argued, bi-or multilingualism is becoming the norm in

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urban classrooms, rather than the exception. Hence the need in mathematics education research to examine classroom practices where the bi/multilingual speaker (as opposed to the mono lingual speaker) could be treated as the norm (Baker, 1993). The Ministry of Education (1996) acknowledged that all children should be given an equal opportunity to education. Hence MOE, (2013), the policy on education, recognized the use of familiar Zambian languages as the official languages of instruction in the pre-schools and early Grades (grades 1-4). It spelt out that all the teaching and learning in all the learning areas at the lower primary level should be in familiar Zambian languages. This is because there is evidence that children learn more easily and successfully through languages that they know and understand well. Thus the curriculum change (review) in Zambia was accompanied by the use of familiar language as the medium of instruction at lower primary school (MESVTEE, 2013).

Thus the introduction of the use of local languages as mediums of instruction in the first four years in primary schools was partly a desire to improve children's learning of new concepts in a familiar language (MOE, 2013).

Furthermore, it was assumed that this development could help learners progress in mathematics as many problems that learners of mathematics encounter were partly due to inability to cope with the demands of the language of instruction (English) (MoE, 2013). This view is well articulated by (Cockroft, 1982), who argued that teachers must use language to make children not only familiar with the language used in mathematics but also able to read in order to comprehend what may be called mathematics vocabulary in local languages.

Thus from the introduction of familiar languages as a medium of instruction, little is known about how local languages play out especially in multilingual classrooms, how teachers cope in such an environment and what language practices emerge.

The purpose of this study was therefore to assess the language practices of teachers as they teach mathematics in a multilingual primary school in Lusaka district of Zambia. The study was guided by the following research objective;

-to determine the teachers' language practices as they taught mathematics in a multilingual classroom

Theoretical Framework

The research was qualitative in nature and it took the form of grounded interpretive classroom research. This was guided by Vygotsky's social constructivist theory. Vygotsky (1978) (as cited in O'Neil, 2011) claims that the secret of effective learning lies in the nature of the social interaction between two or more people with different levels of skills and knowledge. This involves helping the learner to move into and through the next layer of knowledge or understanding. Brodie (1996, p. 12) posited that mediation is the process of closer teacher direction and guidance. Vygotsky also regards tools as mediators and one of the important tools is language. The use of language to help learners move into and through their ZPD is of great significance to socio-cultural theory. Mediation is central to Vygotsky's socio-cultural theory (Williams and Burden 1997). Mediation according to Vygotsky refers to the part played by other significant

people in the learners' lives, people who enhance their learning by selecting and shaping the learning experiences presented to them. According to Kozulin (2002), human mediation usually tries to answer the question concerning what kind of involvement on the part of the adult is effective in enhancing the child's performance, while symbolic mediation deals with what changes in the child's performance can be brought about by the introduction of the child to symbolic tools such as language and learning media.

Mediation in the ZPD was seen through the term scaffolding as introduced by Wood, Bruner and Ross (1976) in an attempt to operationalize the concept of teaching in the ZPD (Wells, 1999). In the context of the ZPD, scaffolding is used to explain the social and participatory nature of teaching and learning which occurs in the ZPD.

Here, in the whole class setting, the teacher is able to listen to and work with learners' informal or incomplete mathematical language productions and re-voice and so frame them towards appropriate or more formal mathematical discourses. In this way, the teacher enables access to English, mathematical English, and ways of talking mathematics in school. The teacher understands her role as including the modelling of mathematical talk for learners who are struggling simultaneously with concepts and their appropriate naming in a language (Chinyanja), the language of instruction.

Methodology

This study used a qualitative study design which was interpretive in nature. A conversation analysis of the recorded classroom interaction was conducted. The targeted population included all teachers of mathematics and pupils in the grade 4 whose mother tongue was neither the language of learning or teaching from two primary schools in Lusaka district, Zambia. Purposive sampling was used to select four (4) teachers from the selected primary schools and twenty pupils from each of the schools taught by the same teachers. Each teacher was observed twice and during this period all teachers taught the same topic – 'vertical subtraction'.

Data was collected through lesson observations. The lessons observed were recorded and notes made. The focus of the analysis was on the language practices in the teacher–led talk. Conversation Analysis provided an approach to the analysis of the interaction between the teacher and the learners.

Description of Teachers in the Study

The mother tongue language for Teacher 1 was Lozi. The language of instruction in teaching and learning Mathematics was Chinyanja. However, during classroom interaction, the teacher and few learners used a mixture of English and Chinyanja, while others used English and others Chinyanja. She had been teaching for 12 years and had a Primary School Diploma Qualification. Teacher 1's grade 4 class that was observed had 60 pupils in total, 26 girls and 34 boys. Teacher 1 taught them all- the curriculum subjects. The pupils had a variety of familiar languages in the class ranging from Tumbuka, Soli, Lenje, Bemba, Chewa, Lozi, English, Tonga and Chinyanja. Two

consecutive lessons were observed in the same grade 4 class and they focused on vertical subtraction and problems involving subtraction.

The Mother Tongue Language for Teacher 2 was Ndebele but had developed Chinyanja vocabulary in her speech. The language of instruction in teaching and learning Mathematics was Chinyanja. However, during teaching and learning, the teacher and few learners used mixture of English and Chinyanja while others used English and others Chinyanja only. She has been in service for 11 years and had a Primary School Diploma Qualification. Teacher 2's grade 4 class that was observed had 51 pupils in total, 29 girls and 22 boys. Teacher 2 taught them all- the curriculum subjects. The pupils had a variety of familiar languages in the class ranging from Bemba, Chewa, Lozi, English, Tonga, Chinyanja. Two consecutive lessons were observed in the same grade 4 class and they focused on addition.

The mother tongue language for Teacher 3 was Bemba and she had developed a bit of Chinyanja in her vocabulary. Chinyanja was the language used in teaching and learning of Mathematics. However, during teaching and learning, the teacher used English while some pupils used Chinyanja and others English. However, few pupils managed to use both English and Chinyanja. She had been teaching for 22 years and had a Primary School Diploma Qualification. Teacher 3's grade 4 class that was observed had 61 pupils in total, 36 girls and 25 boys. Teacher 3 taught them all- the curriculum subjects. The pupils had a variety of familiar languages ranging from Chewa, Ngoni, Tumbuka, Tonga, lozi lenje, Bemba, Lunda and Kaonde.

The mother tongue language for Teacher 4 was Bemba but had developed a considerable portion of Chinyanja vocabulary in her speech. The medium of instruction in teaching and learning Mathematics was Chinyanja. However, during teaching, the teacher used a mixture of English and Chinyanja. She has been working for 18 years and had a Primary School Diploma Qualification. Teacher 4's grade 4 class that was observed had 58 pupils in total, 37 girls and 21 boys. Teacher 4 taught them all- the curriculum subjects. The pupils had a variety of familiar languages in the class. Two lessons were observed in the same grade 4 class and they focused on vertical subtraction**.**

Results

In the section we present observations and findings from eight (8) lessons taught by four (4) primary school mathematics teachers in the current study. The mother tongue language for these teachers was not the same as the language of instruction (Chinyanja) but all the teachers professed enough Chinyanja vocabulary. These observations provided a glimpse of how the teachers and learners interacted during two (2) Mathematics lessons and how the teachers conducted the lessons with their students. The topic taught was 'vertical subtraction'. This was so because of the common scheme of work being used in the district.

The results from the analysis of the lesson notes and recorded lesson observations under this study are presented below. Table 1 presents teachers' language practices as they taught vertical subtraction in the multilingual classrooms.

Mathematics teachers' practices in the classroom

Table 1 shows the common classroom practices representing teachers' language practices as they taught vertical subtraction topic in the multilingual classrooms.

Table 1: Common Classroom Language Practices by teachers

Actor	*Classroom Language practice*	*Frequency*
	- Use of Chinyanja and English languages	*47*
	- Question and answer approach	*38*
Teachers	*- use of black board, gestures and visual aids to explain mathematical terms*	*41*
	- talk focusing on correct answer only	*26*
	- translating for learners during teaching	*19*

The frequently occurring language practices in the teaching of mathematics in the multilingual classroom were categorised into; code-switching, teacher-centred approach, translating, procedural discourses and use of gestures and visual aids.

It was established that the chinyanja spoken at home was not equal to the standard one recognized in schools. It was further established that teachers whose mother tongue was not chinyanja and did not grow up in areas where chinyanja was widely spoken, hence they lacked fluency and enough vocabulary in chinyanja and teaching using chinyanja as a medium of instruction created a burden for them.

Code-switching in teaching vertical subtraction

We identified a number of times classroom teachers used Chinyanja and English (code-switching) when conducting the lessons on vertical subtraction. In terms of frequencies this recorded a total of 47 times. Two forms of code switching were observed during these lesson observations. One form of code-switching that was observed occurred when teachers were explaining, checking understanding and when creating an appropriate classroom climate. The other form of code-switching occurred when teachers lacked the needed vocabulary in explaining some mathematical terms in local language.

With regard to supporting access to mathematics, in all eight (8) lessons observed, teachers used a mixture of a local language (Chinyanja) and English. Below is an excerpt of a lesson showing code-switching, use of gestures and visual aids by a teacher.

5.Teacher: *Sungapunzile nga suyangana nakuvela. So you have to look and listen.*
6.Pupils: *Yes, madam*
7.Teacher: *So can you all look at me it's time for mathematics. Today we are concluding our topic on subtraction, tisiliza topic yantu yaa chaani? (here the teacher translates the same statement in local language)*
8.Pupils (in chorus): *Subtraction*
9.Teacher: *Ok tikalibe kuyamba nifuna tuyanganeko kuli vamene tinapunzila last time aii.*
10.Pupils: *Yes*

11.Teacher: *We were looking at vertical subtraction. We were looking at what?*
12.Pupils (chanting): *Vertical subtraction*
13.Teacher: *Yes, we were looking at vertical subtraction, can you look at me you. Nikaamba ati chintu chili vertical nichintu chili bwanji? Kuchoka pamwamba kufika pati? (here the teacher uses gestures and the visual aids to illustrate the meaning of vertical subtraction)*
14.Pupils: *Pansi*
15.Teacher: *So tinayangana masamu yamene tintatika according to place values kuchoka pamwamba kubwela*
16. Pupils: *Pansi*

Lesson excerpt on code-switching, use of gestures and visual aids

The lesson extract cited above shows how the Teacher used a mixture of languages to communicate vertical subtraction during the process of teaching. The teacher switched from a local language (Chinyanja) to English and vice-versa as well as translated for students in some instances as evidenced in line 7 to 13. The teacher also used gestures and aids to explain the mathematics/English word 'vertical'. The use of different languages during teaching was one of the ways teachers used to communicate procedures and concepts to students but at the same time, the switch from Chinyanja to English was occurring in instances where the teacher had insufficient vocabulary to express mathematical terms like 'vertical subtraction' and 'place values' (lines 11, 13 and 15) in local language.

Code-switching and translating were among the ways teachers widely used in the teaching of vertical subtraction in multilingual classrooms. Lines 7 shows this pattern of behaviour by the teacher. This was augmented by use of gestures and visuals on the board. The word 'vertical' was emphasised due to importance of making sure that the digits with the same place value were aligned. One type of code-switching involved teachers explaining, checking understanding, for interpersonal relations, or emphasizing a point to the learners and when creating an appropriate classroom climate or rather wanting to make learners concentrate and stopping them from making noise. The eye contact and tone of the voice from the teacher while repeating the words account this this (lines 11 and 12). Teachers also code-switched when trying to make sure those learners who only knew chinyanja or English could benefit from the lesson. Here teachers code-switched from Chinyanja to English or vice-versa (lines 12 and 13).

This provided a way of communicating with the learners, with the learners 'chanting' back to the teacher, it gave an assurance that communication was taking place. Code-switching as a way of communicating was also noted by Hoffman (1991) who also saw it as a communication strategy and in which two languages were used in the same utterance. The use of a mixture of languages in multilingual classrooms enforces Ferguson (2003)'s findings who noted that classroom code-switching seems to arise naturally, perhaps inevitably, not only because it is ubiquitous in multilingual societies, but also as a response to the difficulties of teaching in a language in which students do not have full proficiency. However, the point of departure with Ferguson (2003)'s

findings is that in our case this extended to teachers, teachers were also struggling in the familiar language that learners were using, that is, teachers teaching in a language where they were not competent used code-switching as a way of bridging the language inadequacies.

The use of a mixture of languages in teaching was also consistent with the study done by Erling, Adinolfi, Hultgren, (2017) in India, where they found that the facilitative use of code-switching between English and Hindi to translate and occasionally explain or give an example was common among all teachers, and classroom code-switching was openly recognized as a legitimate and necessary pedagogic strategy, since the students' English-language competence was developing. Nuria Gorgorio and Nuria Planas (2001), argued that code-switching, or switching from one language to another in the course of a conversation, could be expected to occur in multilingual setting.

However, code-switching in situations that both the teacher and the learner do not share a language was a necessary pedagogic strategy in multilingual setting where both the learners and the teacher were incompetent in the languages being used. In situations where learners came to the classroom with different linguistic backgrounds and learners and the teacher could not necessarily interact meaningfully, code-switching created communication break downs thereby making it impossible for the teacher to scaffold and mediate. Scaffolding in this case focused on the role of a teacher in supporting and guiding learners' learning and development. When a teacher has challenges in the language, this role was likely to be compromised. Worse still when the learners too had similar challenges in the medium of instruction.

The other type of code-switching that was observed occurred when teachers lacked the needed vocabulary in explaining some mathematical terms (e.g. place values, vertical subtraction, vertical order) in a local language. In such instances, teachers code-switched from Chinyanja to English as a way of bridging the language inadequacies. This was illustrated in figure 3 where the teacher was switching from Chinyanja to English when encountering mathematical terms that the teacher could not explain in a local language. In order to communicate the meaning of these mathematical terms, the teacher demonstrated on the black board using meter ruler and hands. The Teacher also translated (in line 78) mathematical terms in a local language to help pupils understand.

Translation

Translation was another practice in teaching classrooms which constituted learners of different linguistic background. Translation, however, depended on the rich vocabulary of the teacher. The lesson excerpt below illustrates occurrences of this aspect.

27.*Teacher: Ni word imonzo naimonzi yamene etantauza vasemu, to subtract. Any other word you still remember?*
28.Pupils: *take away*
35.Teacher*: sum ni answer, tifuna mau aja yamene yakamba chimonzi nachimonzi monga subtraction.*
36.Teacher: *any other word you still remember?*

37.One pupils: *borrow*
38.Teacher: *Borrow, kuchita borrow nikubweleka. Yes, you*
“
44.Teacher: *Minus Nakuchosapo for example, nili nama books yangati apa?*
45.Pupils: *Yatantu*
46.Teacher: *Nili nama books yatantu, I have got 3 books in my hand, then that word minus simply means chosapo. So tikachosapo simply means subtract, then subtract ndiye minus futi, then take away nikuchosapo pa vinthu vilipamozi then mwatengapo that is to take away isn't it? (here the teacher also is trying to translate for the pupils)*
47.Pupils: *Yes*
48.Teacher: *Yes, then the next one ati vichepe aii tikamba ati tifuna aya ma books achepe which means tizachosapo aii*
49.Pupils: *Yes.*
50.Teacher: *so apa yasala imozi aii*
51.Pupils: *Yes*
52.Teacher: *good, then the other one ati deduct, deduct ati kuchosapo pa vinthu ok, pali vambili wabwela wachosapo*
53.Pupils: yes
54.Teacher: *So all these words minus, subtract, take away, less and deduct vonse vitantauza chimonzi which is subtraction. So vamene tizapuzila lelo, if you come across one of those words whether it is minus, subtract, take away, less and deduct bafuna kuti uchite chimonzi nachimonzi. Kuchita bwanji?*
55.Pupils: *kuchosapo*
56.Teacher: *Yes, kuchosapo, so do not be confused by those five words on the…*
57.Pupils: *board*
58.Teacher: *Are we together boys and girls?*
“
78.Teacher: *Very good, if 3106 died how many remained? Yes, Gumbo has 5431 cattle, if 3106 died how many remained? Akuti Gumbo, Gumbo uyu nizena ya munthu aii. Ati Gumbo aze na ng'ombe zili 5431 ndiye ng'ombe zamene aze nanzo pamozi, kunafa zili 3106, ati anasala na ng'ombe zingati? Eyi funso niyolembewa muchiganinzo. So it's not that all the time ma question azayamba kulembewa muma numbers no, venengu vemalembewa muchaani?*
96.Teacher: *so what you do arrange the numbers in vertical order, yakokane bwino bwino according to their place values. So choyamba ng'ombe zoonse zikale pamwamba which is 5431, so apa tifunika tichosemo zamene zinachita bwanji?*
“
136. Dorcus: *Ati pali ma plant yali 6000 yamene yanashokewa yali 2568, yangati yamene yanasalako?*

Lesson excerpt showing teacher translating for learners

It was also observed that teachers would translate either from English to Chinyanja or Vice versa during teaching and giving feedback to an individual student (line 46, 78).

In a case where the teacher was not competent in the language he or she was trying to translate, translation could be of a disadvantage as there could be a likelihood of distorting the original meaning of the statement (line 37, 38) where one learner indicated take away as borrow.

The teacher translated the same statement in local language so that learners who knew Chinyanja could understand (line 96, 136) and those more familiar with English could also understand but terms like place values and vertical order were always stated in English. The teacher used one pupil from the class who understood; to translate for the others and she managed well to translate the mathematical statement to the class (line 136).

One implication drawn here is that translation could be a good way in multilingual classroom because it could give an opportunity to learners to understand what the teacher was teaching especially those who might have problems in understanding the language of instruction. However, for this to be fruitful the translator and the listeners must be competent in both the languages being used. As Adler (1998), reported on a South African classroom where the teacher ‘‘runs out of words’’ when trying to explain advanced math in Tswana. The only difference was that in this research teachers could code-switch to other languages as a way of overcoming the local language inadequacy. Other than code-switching, teachers were also translating for learners a**s** a way of making them understand the mathematics that was being taught.

Teacher taking lead of the Discussion and Procedural Discourse

Teacher taking charge of the discussion and focusing on teaching procedures was another striking feature that was observed when teaching vertical subtraction in the multilingual classroom. In the lesson observations, teacher talk in mathematics classroom was mainly focusing on finding correct answers in which learners were forced to be chanting and giving chorus answers. It was also observed that during the lessons the teachers led the discussions.

Below is an excerpt showing a typical example of how a teacher took lead of the discussion during mathematics lessons.

17.Teacher: *So for example we are looking at such kind of problems, look at me and the board all of you, for example*

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    4230
-   1119
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9 will be below 0, 1 below 3 in that order, so we were learning numbers in vertical order. Teaze kufaka ma numbers mumundandanda.

18. Pupils: *Yes, madam*

19.Teacher: *Kukoka bwino bwino kuchoka pamwamba kufika*

20.Pupils: *Pansi*
21.Teacher: *Then teaze kuchosapo manje aii?*
22.*Pupils: Yes*
23.Teacher*: so tiyeni tuyanganepo pali vamene tinapunzila last time, tiyeni tichosepo tiwone, eyes on the board. So what is 0 minus 9*
24. Pupils*: it can't*
25.Teacher*: 0 kuchosamo 9*
26.Pupils*: it can't*
28.Teacher*: sitingachosemo aii, why? Chifukwa 0 ning'ono aii, then 9 ni…*
29.Pupils (chanting)*: nikuulu*
"
48.Teacher*: what is remaining there?*
49.Pupils*: 2*
50.Teacher*: 2 take away 1*
51.Pupils*: 1*
52.Teacher*: What is 2 take away 1*
53.Pupils*: 1*
54.Teacher*: And 4 take away 1*
55.Pupils*: 3*
56.Teacher*: So ndiye vamene tinapunzila last time evee aii*
57.Pupils*: Yes*
58.Teacher*: this is what we were learning, vertical*
59.Pupils*: subtraction*
60.Teacher: *Yes, ma numbers yofaka mumundandanda bwino bwino kuchoka pamwamba kufika (numbers you put in straight lines nicely from top to down)*
61.Pupils: *Pansi*

Lesson extract above– on teacher dominance in class

The discourse shows that intermittently, every other line from 17, 19 21 ….50, 52, 54 and so on the teacher is leading the talk. Learners are simply responding to the teachers' questions or completing the 'blanks' as the teacher creates them. Teachers were asking questions that required one-word answer and were not asking learners to justify their answers, in turn failing to create an opportunity for pupil talk in the class and the teacher talk was focused on teaching procedures. According to social cultural theory, for languages to yield positive results, language must mediate both interaction and individual thinking processes. It is not only a tool for thinking but also an essential tool for communication. These two functions of language (communication and thinking) are not separate. They sometimes occur simultaneously. By using language for communication the individual internalizes it for use as a tool for thinking. One of the opportunities that school can offer learners is that of involving other people in their thoughts - to use conversations to develop their own thoughts (Mercer, 1995).

This is not an easy task for teachers whose mother tongue is not the language of instruction and teaching classes which constitutes of learners coming from different linguistic backgrounds since the mathematical talk is not in their first language. Learners therefore need to be initiated into the discourse. This initiation includes: recognition of mathematical terms, knowing how to say them (being able to pronounce them), knowing what they mean and being able to use them in mathematical conversations. The challenge here, for many teachers, was assisting learners to move from a position where they could not understand the language of learning (Chinyanja) to a point where they use Chinyanja to talk (about) mathematics.

Moschkovich (1999, p. 11) pointed out that students need to participate both orally and in writing by ‘‘explaining solution processes, describing conjectures, proving conclusions and presenting arguments.’’ One way to encourage students’ development of extended ways of talking about math was by having students talk with each other. As putting students into groups to discuss mathematics concepts was also a way of limiting teacher talk, but while interaction with peers could achieve some goals of the mathematics teacher, interaction with peers alone would not lead to the development of the mathematics concepts and register.

Alidou et al., 2006’ explored the relationship between medium of instruction and teachers’ classroom practices, finding that using a language that the teacher does not have enough vocabulary in, made it difficult for teachers to use active, student-centred strategies. Research conducted in Ghana for instance, found that teachers’ practices were more effective when teachers used their mother tongue as Gutierrez (2002) explained that knowing a language means more than knowing technical terms, and having a bilingual translation was not sufficient for scaffolding the development of mathematics language in a second language. A teacher using Chinyanja, for example, would need to have studied mathematics in Chinyanja to be able to teach it in Chinyanja.

Use of gestures and visual aids in the teaching of Mathematics

Teachers were observed using sticks, blackboard, hands and certain body movement when communicating or illustrating a point during the process of teaching. Gestures were also seen in helping teachers to bridge the language inadequacies during the process of teaching. One typical example is given below;

Teacher: *“evee nakuvefakaso not so but so” (this you put them like this not this but like this).*

The teacher was emphasising on exact alignment according to the place values of the numbers in vertical subtraction and the teacher used hands to illustrate on how numbers needed to be arranged in vertically and in a straight line – up and down.

The teacher’s gestures and talk assisted in clarifying, explaining, highlighting, and emphasizing mathematical concepts to his learners.

Conclusion

The study has established code-switching, translating, use of gestures and visual aids as some of the practices teachers used in the teaching of mathematics in multilingual classes. It seems, therefore, that for teachers to facilitate learners’ access to mathematics and communicating

mathematics in a multilingual classroom, teachers relied mainly on code-switching and translation as a practice. Also what was noted was that teachers utilized the board more and dominated the classroom activities through talk and board use.

For the future we recommend that teacher preparation institutions consider adapting teacher education programmes that support the use of flexible multilingual approaches in classrooms. For instance, code-switching should be encouraged as a means of bridging the language and knowledge gaps of learners who come with no or little knowledge of the language of instruction. Mathematics teachers could also share best practices in teaching in multilingual contexts especially at Primary school level.

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