The mismatch between the language of training and language of teaching: Challenges faced by the selected Grade 2 Mathematics teachers

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Abstract
Although English is the dominant language of learning and teaching (LoLT) in many Namibian schools, the current Namibian Language in Education Policy (LiEP) prescribes that the Junior Primary Phase (Grades 0 to 3) learners in government schools should be taught in their first language (L1), and only later from Grade 4 onwards they can switch to English as LoLT. In training teachers, however, teacher training institutions such as the University of Namibia (UNAM) only use English as LoLT to train all the teachers, including those who will teach in the Junior Primary Phase. This becomes a challenge especially for content subject teachers who are trained in English and are expected to teach in a mother tongue other than English when they are formally employed in schools. This paper employed a qualitative interpretive approach to explore the challenges experienced by the selected Grade 2 Mathematics teachers who were trained at UNAM, regarding teaching Mathematics in the mother tongue. Data collection methods consisted of questionnaires and interviews with six Grade 2 Mathematics teachers who all graduated from UNAM. The data were analyzed inductively using the thematic content analysis approach. The key findings include that the preparation of Junior primary mathematics teachers was constrained by the mismatch between the language used to train them at UNAM and the language they are expected to use as a medium of instruction for actual teaching in schools, and the lack of prescribed materials for teaching Mathematics in the mother tongue. This study responds to the gap in mother tongue literacy teacher preparation and contributes to knowledge on how junior primary teachers should be prepared to teach all the subjects in the mother tongue as per the Namibian language policy.

Keywords: language, medium of instruction, teaching and learning, training

Introduction and Background
Namibia’s formal education system comprises of two sectors: Basic Education and Higher Education. The Basic Education sector consists of the Pre-primary (Grade 0), Junior Primary Phase (grades 1-3), Senior Primary Phase (grades 4-7), Junior Secondary Phase (grades 8 and 9) and Senior Secondary Phase (grades 10 and 12) which is the final Phase before students enter the Higher Education sector (National Institute for Educational Development (NIED), 2015). The Pre-primary, Junior Primary Phase lays the foundation for all further learning. The teaching and learning in this phase take place through the medium of the mother tongue. In the Senior Primary Phase, learners are supposed to build on this foundation to develop irreversible literacy and numeracy skills and basic knowledge in various subjects. The Junior Secondary phase continues with the same learning areas as Senior Primary and consolidates achievements to date and extends them to a level where the learners are prepared for young adulthood and continued formal education (NIED, 2015). At the end of Grades 11 and 12, learners are expected to be well

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Like many African countries, Namibia was also colonized; first by Germany and later by South Africa. During colonial oppression, South Africa introduced segregation policies which forced black people to settle in reserves or “Bantustans” (homelands). Eleven homelands were created, each one with its own Bantu education systems which were of lower quality compared to the education provided to the minority white ethnic group. Before independence from South Africa, Afrikaans, the language spoken by not more than 10% of the population, was the Language of Learning and Teaching (LoLT) in many Namibian schools (Amukugo, 1993). At Namibia’s independence in 1990, the new government embarked on serious education reforms to address the injustices and inequalities left by the apartheid segregation policies. The South West Africa People’s Organisation (SWAPO) led Government, had to make a distinctive educational choice “that would”, in Jansen’s (1995) words:

enhance socio-economic possibilities with the broader international community needed to institutionalize a language policy which could unify Namibians across the ethnic and racial divide enforced by the extension of apartheid in the form of the eleven educational departments, and to adopt a language policy which would facilitate mobility among Namibians within the country and across international borders (p. 48).

The above quote stipulates that education should promote the language and cultural identity of learners through the use of the mother tongue as the medium of instruction in schools. As such, SWAPO’s policy document “Towards a Language Policy for Namibia” became the basis for the new Language Policy (Ausiku, 2010). Although at that time English was only spoken by 0.8% of the population, it was chosen as the only official language in Namibia because it was considered to have met the country’s criteria for an official language: “unity, acceptability, feasibility, pan Africanism and wider communication” (Ausiku, 2010, p. 2). The use of the English language in a multi-lingual Namibia would prevent possible accusations of favouritism regarding one ethnic language over others, and that no ethnic group would feel superior over others (Frans, 2016). The then new policy had to promote the use of mother tongue and English in schools, teacher training colleges and universities. The process was also guided by the Language in Education Policy (LiEP) for schools: 1992 – 1996 and beyond (Ministry of Education and Culture [MEC], 1993) whose goal was to promote the language and cultural identity of learners through the use of first languages as medium of instruction in the Junior Primary Phase, Grades 0-3.
As with other countries in Africa, the issues of language policy and medium of instruction have been topical issues in Namibia. The language issue became even more complex given the variety of languages and dialects spoken in Namibia. There are about 30 languages spoken in Namibia, 14 of which have a full orthography. In the years following the implementation of LiEP, several challenges related to the application of this policy emerged. These included factors such as the lack of qualified mother-tongue teachers, a belief amongst parents that there are greater benefits for children in being taught through the medium of English, and the perceived lack of status of the indigenous languages (Murray, 2007).

The Junior Primary Phase is the focus of this paper. In this phase, teaching focuses primarily on three areas, namely, literacy, numeracy, and broad knowledge of the immediate environment of the learner. Teaching and learning in this phase take place through the medium of the mother tongue. In the case of multi-lingual schools, the classes are grouped according to mother tongue as far as possible to such that they are homogenous. Where this is not possible at all, the predominant local language is used as a medium of instruction and classes streamed and timetabled according to mother tongue for the language subject at the first language level. English in this phase is only taught as a subject as well as Second Language.

**Teacher training and mother tongue instruction in Namibia**

Until 2010, the responsibility for teacher education in Namibia was shared between the Colleges of Education and the University of Namibia (UNAM). As such, the Basic Education Teacher Diploma (BETD), which was a three-year course aimed at preparing teachers for basic education (Grades 1–10) was offered at the four Colleges of Education, namely; Windhoek College of Education, Caprivi College of Education, Ongwediva College of Education and Rundu College of Education. The senior secondary school teacher qualification which was a four-year Bachelor of Education (Grades 11–12) was offered by UNAM (Magadza, 2010). In 2010, the Colleges of Education merged with UNAM. UNAM then had to begin offering teacher education programmes for Junior Primary to Senior Secondary Phase school teachers. The merger of the Colleges of Education and UNAM also meant that the university had to adapt different methodologies to prepare teachers for all the school phases adequately. Accordingly, in 2011, the university introduced a Bachelor of Education (pre-primary and lower primary) degree programme for junior primary teachers, aimed at preparing teachers to be competent to teach in English and a Namibian language and also to be able successfully to effect the transition from a Namibian language as the medium of instruction to English as a medium of instruction as per the Language Policy for Schools (Ministry of Education and Culture, 1991). Furthermore, Chamberlain (1993) claim that majority of Lower Primary teachers lacked confidence in using or teaching English because they had not been trained in English.

Lower Primary teachers were trained in the mother tongue at the four Colleges of Education in Namibia, namely Ongwediva, Rundu, Katima and Windhoek, until 2010 when these colleges were merged with UNAM. The merger of the colleges of education with UNAM were necessitated to due to concerns such as lack of academic content, wrong content, and inappropriate methodology that affected the quality of teaching and academic achievements in schools (Lopez & Mbodo, 2014). UNAM uses English as LoLT to train teachers including the Junior Primary teachers.

In training Junior Primary teachers, the pre-primary and lower primary B.Ed. programme at the Faculty of Education at UNAM does not have in place an institutional language policy which stipulates the use of the mother tongue in preparing student teachers to teach in this phase (Amukushu-Nipare, 2018); instead, the faculty only partially use the national language policy for schools to sensitize students about the medium of instructions. This has resulted in situations in
which children (in Grades 1 to 3) are disadvantaged by being forced to learn through different media of instruction to the detriment of their home language and their understanding of the curriculum. Given that Namibia is a multilingual country, it is important to make use of effective multilingual teaching approaches, such as codeswitching and translanguaging, part of the teachers’ training. Codeswitching, the practice of moving back and forth between two languages or between two dialects or registers of the same language, is a common practice among multilingual speakers from all walks of life, including a majority of Namibians. Park (2014) describes code-switching as “a bilingual-mode activity in which more than one language, typically speakers’ native language and second language, are used interchangeably (p. 50).

Although the Language Policy has clearly stated some of the goals such as local language should be used as a medium of instruction from initial grades and taught as subjects from grade 4 onwards through the school system, nothing was mentioned about code switching in the Namibian schools. Code Switching can thus be seen as bridging the communication barrier of the learners, given that the basis of learning and development is language and communication. Moore (2010) argues that, teaching and learning experiences are built based on language alternations, with the fundamental idea that the alternate use of languages reinforces awareness of the free, non-fixed relationship between objects and their labels and the necessary ability to separate words and concepts. Translanguaging on other hand, “is a relatively new and developing term that was coined by Cen Williams and his colleague Dafydd Whittal during their in-service training for deputy head teachers in Llandudno, North Wales” (Mwinda & Van der Walt, 2015, p.102). In other words, trans-languaging refers to a pedagogical practice that deliberately switches the language mode of input and output in bilingual classrooms.

Translanguaging and codeswitching are similar to each other, in that they both refer to multilingual speakers shuttling between languages in a natural manner (Park, 2014). However, as Park (2014,) puts it, “translanguaging is more than ‘code-switching’ because ‘translanguaging’ is not simply going from one language code to another” (p. 50). According to Park (2014) “translanguaging seeks to assist multilingual speakers in making meaning, shaping experiences, and gaining deeper understandings and knowledge of the languages in use and even of the content that is being taught” (p. 50). Unlike codeswitching, with translanguaging, two languages are planned and systematically used for teaching and learning within the same lesson. For instance, a Mathematics teacher can explain the rules of multiplication in English, keeping to the meaning, and then she or he can explain the multiplication rules in another language that is used as a medium of instruction, emphasizing all the steps. This is not, however, part of the teacher training at UNAM, which implies that teachers ought to learn these skills tacitly.

Problem Statement
A number of language experts advocate for home or first language as a medium of instruction because learners’ knowledge in the first language (L1) may serve as a foundation and facilitate the acquisition of literacy and numeracy in a second language (L2) (Cummins 2000; Krashen 1985). However, the implementation of the LiEP raises concerns of a practical nature. In this study, it is argued that teachers require specialised knowledge of the learners’ language, mother tongue literacy content and the pedagogical practices pertaining to literacy teaching for any policy on mother tongue literacy to be implemented successfully. For example, the practical reality is that teachers are not adequately prepared by the teachers’ training institutions to teach content subjects such as Mathematics in the first language. Currently, at the university level, student teachers for junior primary are taught (trained to be teachers) Mathematics in English but then expected to teach this (Mathematics) content in their learners’ mother tongue or first language. In addition, there is no adequate training available in the form of qualified teachers in the first language (mother tongues) to teach content subjects like mathematics in the first language. It
would be assumed that an institution that prepares student teachers to teach in the mother tongue would have formulated their own institutional language policy that guides and strengthens the implementation of this practice. However, a study conducted by Amukushu-Niipare (2017) reveals that the pre-primary and lower primary B.Ed. programme in the Faculty of Education at UNAM does not have in place an institutional language policy which stipulates the use of the mother tongue in preparing student teachers to teach in subjects such as mathematics, and that the faculty rarely makes reference to the national language policy for school in training these teachers. According to Amukushu-Niipare (2017), the teacher education curriculum document, known as the Faculty of Education Prospectus of 2016, included modules on mother tongue literacy teaching and learning, especially in African Languages, however, the African language modules such as Oshindonga or Otjiherero were taught as a language while the entire training was conducted in English. In other words, these modules were not taught in the medium of the mother tongue, but in English. Although there is a number of studies related to the LiEP issues in Namibia, there is a dearth of literature regarding the challenges faced by junior primary teachers in using mother tongue as a medium of instruction.

Research goal and research question
The goal of this research is to document the challenges faced by Grade 2 Mathematics teachers in teaching the subject in mother tongue while they are trained and taught at the university. In order to attain this research goal, this research study strives to provide answers to the research questions:

1. What challenges are experienced by Grades 2 teachers in teaching Mathematics in mother tongue?
2. What do the Grades 2 teachers of Mathematics suggest to be done to overcome these challenges?

Harlech-Jones (1992) argues, language is a dominant factor in educational success or failure such that “lack of proficiency in the medium of instruction, whether it applies to teachers or learners, will negatively influence the success of the learners” (p. 30). This study aims to provide useful insights to the training institutions and educators of the Junior Primary teachers and the Ministry of Education, Arts and Culture and all education stakeholders to ensure that these teachers are well equipped to teach and handle linguistic issues in teaching at Junior Primary Phase. The finding of this would thus provide insights into the methods and strategies used to prepare junior primary teachers to teach in the mother tongue as stipulated in the LiEP. This can enable teachers to teach effectively without causing misconceptions in different subjects taught at the Junior Primary Phase.

Methodology
This qualitative study is grounded within the interpretive paradigm. The study used a qualitative case study research design. An interpretive approach is appropriate for studying context specific events and may help uncover interesting and relevant issues for follow up research. Maree (2015) describes the interpretative paradigm explicitly:

It tries to establish how participants make meaning of a specific phenomenon by analyzing their perceptions, attitudes, understanding, knowledge, values, feelings and experiences in an attempt to approximate their construction of the phenomenon. This is best achieved through a process of inductive analyses of qualitative data where the main purpose is to allow research findings to emerge from the frequent, dominant or significant themes inherent in raw data, without the restraints imposed by a more structured theoretical framework (p. 99).
The assertions above depict that the qualitative interpretive interpretations focus on language, signs and meanings from perspectives of the participants involved in the study in contrast to statistical techniques that are employed heavily in quantitative research.

The population of this study is the Junior Primary Mathematics teachers trained at UNAM. In this study, both purposive and convenience sampling were used. Purposive sampling is a “strategy to choose individuals likely to be knowledgeable and informative about the phenomenon of interest” (McMillan & Schumacher, 1997, p. 433), while convenience sampling “involves choosing the nearest willing and relevant individuals to serve as respondents as the researcher simply choose the sample from those whom they have easy access” (Cohen et al., 2007, p. 114). To provide a glimpse of how graduates from UNAM struggle with the phenomenon under study, six novice teachers or newly graduates teaching at three different schools in Windhoek were purposefully selected. The participating schools were selected for two reasons. Firstly, they all catered for the Junior Primary Phase, and secondly, all the three schools use Oshindonga as the LoLT in the Junior Primary Phase. The reason for choosing schools and teachers that use Oshindonga as the medium of instruction is because Oshindonga is my first language, and the language I understand better than all other Namibian languages. The participants consisted of six Grade 2 Mathematics teachers from three schools. All the participants were trained at the UNAM and graduated in 2018. Although this is not a comparative study, I thought having views about teaching in Grade 2 where learners would have been exposed to literacy in Grade 1 would provide rich and useful data. Notwithstanding the size of this study, as Hoadley (2010) posits, there are several aspects that can emerge from smaller scale studies (such as this one) which would merit further investigation at a larger scale and using alternative methodologies.

It is important to observe the ethics of doing research (Stake, 1995). Apart from protecting their identity and retaining a good relationship with the research participants, research ethics also enables the researcher to respect the rights, privacy, dignity and sensitivities of all the research participants as well as the integrity of the institutions within which the research takes place (Awori, 2003). Ethical considerations in this study were taken into account in relation to permission, informed consent, confidentiality and anonymity. I assured confidentiality to the schools and teachers. No real names have been mentioned in this study. I have referred to the schools as either school A, B or C, teachers as either T1 or T2 without mentioning names.

**Data collection methods and analyses**

Data were collected using questionnaires, interviews and document analysis. First, the questionnaires with close-ended questions were given to the participants, soliciting information about their training experience as well as challenges they face in actual teaching. All six participants answered and returned their questionnaires. Then after completing the questionnaires, follow up interviews were conducted with the participants to find clarity on their responses in the questionnaires. The document used in this study was the Grade 2 Mathematics syllabi. The syllabus was analysed to provide data about the mathematical contents expected to be taught in this grade, and how it inhibited the teachers from successfully delivery of the content.

In interpreting qualitative data, Patton (2002) suggests the coding scheme as the first step of data analysis. Ritchie and Lewis (2003), on the other hand, argue that making sense of the data relies partly on the method or tool that is used to categorise data but also depends to a large extent on the researcher and the rigour, clarity and creativity of his or her own conceptual thinking. The teachers’ responses to both the questionnaires and interviews were transcribed verbatim and analysed using coding. With my research questions in mind, I repeatedly read through all the interviews transcripts to make sense of what the teachers had said during the interviews. I then
looked for common comments related to challenges these teachers face in using mother tongue to teach mathematics and suggestions to overcome this.

Findings
The purpose of this study was to explore the challenges experienced by the selected Grade 2 Mathematics teachers who were trained at the UNAM, regarding teaching Mathematics in the mother tongue.

This analysis of data shows that all the six participants were in support that elementary grade learners should be taught in their mother tongue as it would enable learners to understand the subject contents. Teacher 1 at School A, for example, reiterated that “learners get to understand things better in their mother tongue as compared to when they are taught in the language they do not understand”. Similarly, Teacher 1 at School B indicated that “most of the learners are not yet exposed to English. They spend their time at home speaking in Oshiwambo.” In addition, all the participants unanimously indicated that mother tongue teaching helped the learners to relate what they learn in school to their home environment.

The teachers, however, expressed challenges and inconsistency in how the teaching is administered and as well as how they were prepared to teach in the mother tongue. They indicated that, although the language policy says that learners must be taught mathematics in the mother tongue, the syllabi they are provided with are written in English. Even if there are Mathematics syllabi written in Oshindonga which are freely available on the NIED website, the participants alleged that, since they are expected to write their lesson plans in English at their schools, they are only in the position of English Syllabi. In other words, these teachers take the learning objectives from a Mathematics syllabus written in English, write a lesson plan on how they would teach these objectives in English BUT do the actual teaching in Oshindonga.

Another challenge expressed by the participants was the lack of teaching aids for Mathematics that written in Oshindonga. Teacher 2 from School C for example, indicated that “although there is a prescribed workbook written in Oshindonga, it is not entirely speaking to the syllabus. So we end up searching for information on the Internet which tend to be useful, but they are in English”. The challenge is not only when they have to translate objectives from English to Oshindonga in the syllabus but also in translating any information they get from the internet. All the teachers indicated translating of content from English to Oshindonga as a challenge. There seem to be an assumption that, if teachers can speak a child’s mother tongue then they are also able to teach in the language. The participants’ accounts of their teaching experience manifest, however, that although all the participating teachers were natives Oshindonga speakers, it does not necessarily mean that they would be able to teach what they learned in English in Oshindonga… One of the teachers indicated that “UNAM did not prepare us well to teach in Oshindonga… we were just taught theory in English, and when we come to schools to do the actual teaching, we are expected to deliver in Oshindonga” (Teacher 2, School A). These teachers’ views seem to show that the fact that their teaching training tended to focus on theory through the medium of English rather than practice, this resulted in them experiencing problems when they came to do the actual teaching in schools. The teachers were taught the subject content in English and are expected to deliver this content in Oshiwambo. This posed a challenge as some meanings were lost in the translation.

The teachers embraced the fact that the majority of children in Windhoek in general and some at the schools where the participants of this study worked are exposed to and conversant with English. One of them indicated that “Since most of my learners can speak English, I explain some concepts both in English and Oshiwambo” (Teacher 2, School B). These sentiments are also
similar to that of Teacher 1 at School C who claimed that “Sometimes you can see learners are confused when you are explaining things in Oshindonga, they only start reacting when you explain further in English”. The practices described by the two teachers are typical in any bilingual classroom, and they are speaking to translanguaging as discussed in the literature section of this paper. In other words, with translanguaging, bilingual learners do not use their languages separately, but are allowed to negotiate and make use of their other language terrains.

Since teachers were using the linguistic structure of English in Oshindonga, they altered the meaning which they intended to communicate. This is because they were borrowing words from English and using them in Oshindonga. Teachers gave examples of topics in Mathematics which are particularly challenging to translate and make learners understand. For example, the word Area is translated in the Grade 2 workbooks as Oshitopolwa or Ehala. These two words do not necessarily mean the same things in Oshindonga. Oshitopolwa can be loosely translated as ‘part of’, and the direct translation for Ehala is a ‘place’. Teachers indicated that when instructing learners to work out the area by using the word Ehala or Oshitopolwa, it created misconceptions and confusion among learners. Answering how they ensured that the meaning of some of these concepts do not get lost on the translation, the participants indicated that they use concrete objects.

“The only way to make them understand concepts such as capacity, area and so on is to come with authentic materials such as containers or objects. You then fill in the container and tell them that the amount of water this container would take is what we call capacity, or you place a paper on the surface and tell them the place covered by this paper is its” (Teacher 1 at School B).

It is clear from the above utterances that the teacher had to improvise, which is expected of them, but this was marred by the fact that their training did not prepare for this reality. It is also clear from the teachers’ views that there is a need to translate mathematical concepts into Oshindonga that would serve as reference materials for teaching the subject. One of the teachers also suggested that the four years of the training at UNAM should entail producing instructional materials in Oshindonga that student teachers could use in a school with no teaching materials in Oshindonga.

Conclusion
This paper explored the challenges experienced by the selected Grade 2 Mathematics teachers who were trained at the UNAM, regarding teaching Mathematics in the mother tongue. The study revealed Mathematics teachers’ concerns regarding the planning, teaching, and managing of the mother tongue as medium of instruction in the schools. It appears that the actual teaching and learning demands in the schools is not well congruent with their training experiences. The participants’ responses suggest that their training for Junior Primary Phase teachers at the university, especially for subject contents that they would teach in schools, should be offered in their mother tongue to enable them to implement the language policy effectively. Now that it is not the case they are encountering challenges in schools when they are required to teach in the mother tongue. Based on these findings, this study thus, recommends that UNAM and all the prospective Junior Primary Phase Mathematics teacher training institutions in Namibia should conduct their training in this subject in mother tongue in the interest of implementing the mother tongue policy for junior primary school learners.

References


