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Negotiating Teaching
Mathematics in English Medium Schools in Tanzania: A Case Study

By Dr. Lisa Kasmer, GVSU Faculty and Paige Laurain, GVSU Student

Introduction
Most Tanzanian students are fluent in at least two languages; their tribal language and Kiswahili, a uniting trade language for the 120 tribes in Tanzania. Kiswahili is spoken in Tanzanian parliament, lower judicial courts, and primary schools, yet most secondary schools are taught in English (Brock-Utne, 2003).

In 1995, the Education and Training Policy set forth goals for students and teachers in Tanzanian secondary schools. One goal for both Tanzanian students and teachers is the development of competency in linguistic ability and effective use of communication skills in Kiswahili and at least one other foreign language (Qorro, 2006). To meet this goal, students are taught in Kiswahili in primary school yet are expected to be prepared for English instruction in their secondary schools. Basic communication skills in a new language typically require 2-3 years of study while gaining grade-level competence takes 4-10 years (Lucas, Tamara, & Katz, 1994). These language limitations suggest that most Tanzanian students matriculating from primary school will not be adequately proficient to be instructed in English.

In this article we share our experiences instructing such students in the context of secondary mathematics classrooms in Arusha, Tanzania in a multilingual environment.

Case Study
Fifteen mathematics education majors along with two university professors spent the month of May (2011) teaching mathematics to secondary students participating in an ongoing program between a university in the United States and three secondary schools in Arusha, Tanzania. English was used as the language of instruction. Students attending these schools are expected to speak English at all times. Signs posted throughout the school grounds remind students of this requirement. While observing the Tanzanian teachers we noted that when the teacher posed a question, students would either not respond or respond with very few simple words in English. According to Puja (2001) she found that students feel uncomfortable speaking English in a classroom as it is poses artificial situation since they speak Kiswahili or their tribal language outside the classroom.

At the onset of our teaching experience, students did not understand key mathematical terms such as variable, equation, or proportion. In order to orchestrate lessons successfully, we needed to repeat words such as variable and equation in Kiswahili to help students make sense of the vocabulary. We also drew pictorial representations such as graphs to help communicate meaning of these concepts. This approach is considered code switching, where the teacher will use more than one language to explain an idea. We found this instructional strategy to be valuable in teaching mathematics as understanding mathematical vocabulary facilitates learning.

Discussion between students and teachers is an important aspect to learning, yet, the Tanzanian mathematics teachers we observed seldom posed questions that required students
to respond with their reasoning. We suspect the reason is
two-fold, the classroom teachers may have felt ill at ease
carrying out a discussion in English, as their own profi-
ciency level was somewhat limited. In addition, students
appeared hesitant to respond to questions in English, as
they feared making a language-related mistake in front of
their peers.

As we taught our initial lessons, we noted the same small
number or students volunteered to answer the questions
we posed. As expected, these students seemed more
comfortable speaking English. In an attempt to engage all
of the students, we asked students who never seemed to
take the initiative to respond to specific questions. While
some sheepishly answered the questions or reluctantly went
to the board to solve a problem, many just stared at us or
answered the question in Kiswahili. Since they did not
understand what was being asked or taught, they could not
respond to the questions.

In order to be more effective, we modified our instruc-
tional methods. The first modification involved seating
arrangements; we moved students capable of understand-
ing English near students who did not understand as well.
While we were not able to teach mathematics in Kiswahili,
the students could translate what was being taught to each
other. According to Brooks and Brooks (2003) students
retain 90% of the information they teach each other. This
seating arrangement created a classroom environment that
encouraged students to interact and work with one another
even though the students were not used to working in
groups. We also modified our planning process as we de-
determined word choice was crucial because of the students’
limited knowledge of English vocabulary. Addressing ways
to incorporate simpler sentences and common words in
order for students to better understand what we were say-
ing was essential. When possible we incorporated Kiswahili
words and phrases into instruction, introducing a concept
using both the English and Kiswahili words and asked
students to write both in their notes. This documentation
ensured that students had a reference throughout the
lesson. We also purposely integrated relatable contexts into
the lesson, infusing common Kiswahili words and contexts
such as cattle, ng’ombe, and money, shilingi so students
could connect with the ideas. The students were more
willing to assist us with our Kiswahili and attend during
the lessons once they realized we were trying to convey the
material in a way that best suited their needs.

Summary
Studies have demonstrated that the lack of proficiency in
the language of instruction results in poor performance in
the subjects taught when the language is not the students’
Rudagumya (1990) suggests that integrating students’
native languages into their educational experiences can
enhance learning, thus giving their languages a status
more comparable to that of English. While English was
the required language of instruction in this classroom, it
was apparent that students were finding minimal success
understanding English. These modifications, purposeful
seating of students, code switching, using relatable con-
texts, and simplifying our word choices seemed to benefit
the students in this secondary mathematics classroom.

References
Brock-Utne, B. (2003). The language question in Africa in
8(2), 67-87.

Brooks, J. & Brooks, M. (1993). In search of understanding:
The case for constructivist classrooms. Alexandria, VA:
Association of Supervision and Curriculum.

Cummins, J. (1981). The role of primary language de-
velopment in promoting educational success for
language minority students. Schooling and language
minority students: A theoretical framework. Los Angeles:
California State University; Evaluation, Dissemination,
and Assessment Center.

land: Longman.

Puja, G. (2001). Moving against the grain: The experi-
ences of Tanzanian female undergraduates. Ph.d. thesis
Department of Sociology and Equity. Ontario Institute

quality of education? HakiElimu Working Papers, 06(8).

Rubagumya, C. M. (1991). Language promotion for edu-
cational purposes: the example of Tanzania. Interna-
tional Review of Education, 37(1).
NO ONE DREAMS OF BEING A DROPOUT.

The vast majority of young students believe they will earn a diploma, but in reality, 25% drop out of high school each year in the WGVU service area alone. They will be robbed of promise, opportunity and a successful future.

The decision to leave school will also impact their communities, resulting in higher crime, unemployment and homelessness.

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If every city does its part, the future will look brighter than ever.