

Language policy and science: Could some African countries learn from some Asian countries?

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Abstract This article deals with the fact that most children in Africa are taught in a language neither they nor their teachers master, resulting in poor education outcomes. While there are also donor interests and donor competition involved in retaining ex-colonial languages, as well as an African elite that may profit from this system, one of the main reasons why teaching in ex-colonial languages persists lies in the fact that a large proportion of the general public still believes that the best way to learn a foreign language is to have it as a language of instruction. By contrast, research studies conducted in Africa, as well as examples from Asian countries such as Sri Lanka and Malaysia, have shown that children actually learn mathematics and science much better in local and familiar languages. Though the recent World Bank Education Strategy policy paper is entitled *Learning for All*, it does not specify which language learning should take place in. A claim one often hears in countries of so-called Anglophone Africa is that English is the language of science and technology, and that teaching these subjects through English (instead of teaching English as a subject in its own right as a foreign language) is best. The monolingual island of Zanzibar is in fact about to reintroduce English as the language of instruction in maths and science from grade 5 onwards in primary school. The author of this paper suggests that when it comes to language policy, some African and some Asian countries could learn from each other.

Keywords Language of instruction and the teaching of science · Language of instruction in Africa and Asia · Literate in whose language · The World Bank Policy on Learning for All by 2020 · Common knowledge · African intellectuals · Testing in whose language

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Résumé Politique linguistique et enseignement des sciences : certains pays africains peuvent-ils s'inspirer des pays asiatiques ? – Cet article examine le fait que les enfants africains sont en majorité instruits dans une langue qui ni eux-mêmes ni leurs enseignants ne maîtrisent, ce qui se traduit par des résultats éducatifs insuffisants. Les efforts accomplis pour maintenir les langues des anciennes colonies reflètent certes les intérêts des organismes de financement et la concurrence qui existe entre eux, ainsi que le souhait d'une élite africaine susceptible de profiter de ce système. Cependant, une raison principale de poursuivre l'enseignement dans les langues ex-coloniales réside dans la conviction d'une grande partie de l'opinion publique que le meilleur moyen d'apprendre une langue étrangère est de l'utiliser comme langue d'instruction. En revanche, des études de recherche menées en Afrique, ainsi que des exemples donnés par des pays d'Asie tels que le Sri Lanka et la Malaisie, démontrent que les élèves assimilent beaucoup mieux les mathématiques et les sciences si elles sont enseignées dans les langues locales qui leur sont familières. Bien que la nouvelle Stratégie du Groupe de la Banque mondiale pour l'éducation soit intitulée *Apprentissage pour tous*, elle ne spécifie pas dans quelle langue doit s'effectuer cet apprentissage. Un argument fréquemment invoqué dans les pays de l'Afrique dite anglophone est que l'anglais est la langue des sciences et de la technologie, et que le mieux est d'enseigner ces disciplines en anglais (au lieu d'enseigner l'anglais comme langue étrangère en tant que matière). L'île monolingue de Sansibar est aujourd'hui en passe de réintroduire l'anglais comme langue d'enseignement des mathématiques et des sciences à partir de la cinquième classe dans le cycle primaire. L'auteure suggère qu'en matière de politique linguistique, certains pays d'Afrique et d'Asie pourraient s'inspirer mutuellement.

Zusammenfassung Sprachenpolitik und Wissenschaft: Können einige afrikanische Länder von einigen asiatischen Ländern lernen? – Dieser Beitrag beleuchtet die Tatsache, dass in Afrika die meisten Kinder in einer Sprache unterrichtet werden, die weder sie selbst noch ihre Lehrer beherrschen – mit entsprechend negativen Auswirkungen auf den Bildungserfolg. Geberinteressen und Geberwettbewerb, aber auch eine afrikanische Elite, die von diesem System profitiert, mögen dazu beitragen, dass weiter an den früheren Kolonialsprachen festgehalten wird. Einer der Hauptgründe für dieses Festhalten ist aber die Tatsache, dass große Teile der Öffentlichkeit nach wie vor glauben, eine Fremdsprache ließe sich am besten lernen, wenn sie auch als Unterrichtssprache verwendet wird. Studien, die in Afrika durchgeführt wurden, wie auch Beispiele aus asiatischen Ländern wie Sri Lanka und Malaysia zeigen jedoch, dass die Lernerfolge von Kindern in Mathematik und naturwissenschaftlich-technischen Fächern größer sind, wenn diese in ihrer vertrauten lokalen Sprache unterrichtet werden. *Learning for All* lautet der Titel der jüngsten Bildungsstrategie der Weltbank. Welche Sprache für das Lernen am besten geeignet ist, wird dort allerdings nicht thematisiert. Im sogenannten anglophonen Afrika wird häufig behauptet, dass Englisch die Sprache von Wissenschaft und Technik sei, weshalb diese Fächer am besten direkt in englischer Sprache unterrichtet werden sollten (anstatt Englisch als eigenständiges Fach anzubieten). So ist die einsprachige Insel Sansibar im Begriff, Englisch als Unterrichtssprache für

Mathematik und naturwissenschaftliche Fächer ab der 5. Klasse wieder einzuführen. Die Autorin dieses Beitrags kommt zu dem Schluss, dass auf dem Gebiet der Sprachenpolitik tatsächlich einige afrikanische Staaten und einige asiatische Staaten voneinander lernen könnten.

Resumen Política de la lengua y las ciencias naturales: ¿Podrían ciertos países africanos aprender de algunos países asiáticos? – Este artículo se ocupa del hecho de que en África, la mayoría de los niños reciben en las clases una enseñanza dictada en lenguas que ni ellos ni sus maestros dominan, lo cual se traduce en resultados educativos insuficientes. Existen intereses en este sentido por parte de los donantes, e incluso compiten entre ellos para retener lenguas anteriormente coloniales; además, hay una elite africana que podría beneficiarse de este sistema. Sin embargo, una de las principales razones por las que persiste la enseñanza en lenguas otrora coloniales se debe a que una gran parte del público en general sigue creyendo que la mejor forma de aprender una lengua extranjera es tenerla como lengua de instrucción. Pero contrariamente a ello, los estudios sobre investigaciones realizadas en África, así como los ejemplos de países asiáticos como Sri Lanka y Malasia, han demostrado que los niños efectivamente aprenden mucho mejor las matemáticas y las ciencias naturales cuando las lecciones son impartidas en las lenguas locales y familiares. Si bien la recientemente publicada Estrategia Educativa del Banco Mundial se titula *Learning for All*, no especifica en qué lengua debería tener lugar el aprendizaje. En los así llamados países del África anglófono se suele afirmar que el inglés es la lengua de la ciencia y de la tecnología, y que enseñar estas materias mediante el inglés (en lugar de enseñar el inglés como materia como tal, como lengua extranjera) es lo mejor. La isla monolingüe de Zanzíbar, efectivamente, está por reintroducir el inglés como lengua de instrucción en matemáticas y ciencias naturales a partir del quinto grado de la escuela primaria. La autora de este trabajo propone que en materia de política de la lengua, algunos países africanos y algunos países asiáticos podrían aprender unos de otros.

Резюме Языковая политика и научные дисциплины: могли бы некоторые африканские страны чему-либо научиться у некоторых стран Азии? – В настоящей статье рассматривается вопрос о том, что обучение большинства детей в Африке осуществляется на языке, который не является родным ни для них, ни для их учителей, что приводит к низкому уровню образования. Наряду с тем, что это в интересах доноров, между которыми существует конкуренция, и которые заинтересованы в сохранении экс-колониальных языков, что также устраивает и африканскую элиту, извлекающую из подобной системы выгоду для себя, одной из главных причин приверженности к экс-колониальным языкам в ходе школьного обучения, является широко распространённое мнение, что для овладения иностранным языком необходимо использовать его для преподавания школьных предметов. Напротив, исследования, проведённые в Африке, а также примеры из стран Азии таких как Шри Ланка и Малайзия, демонстрируют, что в действительности, дети значительно более успешно обучаются математике и

естественным наукам в том случае, если преподавание ведётся на местных и знакомых им языках. Несмотря на то что недавно выпущенный Всемирным банком документ, касающийся образовательной стратегии и политики, озаглавлен «Образование для всех», в нём не указывается, на каком языке должно осуществляться обучение. Утверждение, которое можно часто слышать в странах так называемой англоязычной Африки, что английский – это язык науки и технологии, и что преподавание этих предметов на английском языке (вместо обучения английскому как иностранному языку в качестве самостоятельного предмета) является наиболее предпочтительным. Так, например, на монолингвальном острове Занзибар собираются возродить преподавание математики и естественных наук на английском языке, начиная с пятого класса начальной школы. Автор настоящей статьи полагает, что в области языковой политики некоторым африканским и азиатским странам есть чему поучиться друг у друга.

From Education for All¹ to Learning for All

There seems to be general agreement that children learn better when they understand what the teacher is saying. In most classrooms in Africa this is not the case. Instruction is given in a language children do not normally use outside of school, a language they do not command and often hardly understand (Brock-Utne 2000, 2007, 2010; Brock-Utne and Hopson 2005; Brock-Utne and Skattum 2009, Prah and Brock-Utne 2009a, b). Throughout the 2000 World Education Forum in Dakar there was, according to Nadine Dutcher (2004), no mention of the language issue in the plenary sessions of the conference. There is also little consideration of the language issue in the resulting documents from the Forum. Official documents make only limited reference to the fact that millions of children are entering school without knowing the language of instruction (LOI). Many of these children are in Africa. The only type of formal schooling available to these children is in a language they neither speak nor understand. Dutcher holds that

It is shocking that the international dialogue on Education for All has not confronted the problems children face when they enter school not understanding the medium of instruction, when they are expected to learn a new language at the same time as they are learning in and through the new language. The basic problem is that children cannot understand what the teacher is saying! We believe that if international planners had faced these issues on a global scale, there would have been progress to report. However, instead of making changes that would lead to real advancement, the international community has simply repledged itself to the same goals, merely moving the target ahead from the year 2000 to 2015. (ibid., p. 8)

¹ More information about the Education for All initiative and the important conference in Jomtien in 1990 can be found in Brock-Utne (2000).

In 2011 the World Bank released its new Education Strategy 2020 entitled *Learning for All: Investing in people's knowledge and skills to promote development* (World Bank 2011). One would think that the move from *Education for All* to *Learning for All* would signify a move in perspective from the teacher, the educator, to the pupil, the learner. I had expected that this change in the label would also lead to an analysis of why so many students, especially in sub-Saharan Africa² drop out of school, repeat grades or sit there year after year hardly learning anything. The World Bank Group also admits: "What matters for growth is not the years that students spend in school but what they learn" (ibid., p. 2).

Literate in whose language?

In its new strategy the World Bank Group notes that for many students more schooling has not resulted in more knowledge and skills necessary for job creation. According to the World Bank Group

Several studies illustrate the seriousness of the learning challenge. More than 30 percent of Malian youths aged 15–19 years who completed six years of schooling could not read a simple sentence; the same was true of more than 50 percent of Kenyan youths (World Bank Group 2011, pp. 6–7).

One may ask oneself: In whose language were these youths unable to read a simple sentence? In their own language or in a language foreign to them, a language which they hardly hear around them? In an article on illiteracy in Sierra Leone, Kingsley Banya writes that in 1961

[o]nly about 25 % of the country's population were literate in English, which is the official language. However, most people are literate in Krio, which is the *lingua franca* of the country [...] in absolute numbers there has been a tremendous expansion in the number of illiterates. As the population has increased, the number of literate people has not kept pace; 85 out of every 100 Sierra Leones are illiterate (Banya 1993, p. 163).

Banya classifies as illiterate those Sierra Leones who cannot write and read English even though they may read and write Krio, the *lingua franca* of their country! If a native Englishman who reads and writes English, but not any other language, were likewise classified as illiterate, there would be many illiterates in the English-speaking world.

² According to the World Bank, three-quarters of the countries that are furthest from meeting the United Nations' Millennium Development Goals (MDGs) on primary completion rates are in sub-Saharan Africa (World Bank 2011, p. 4).

A closer analysis of the World Bank's *Learning for All* document

Searching the Education Strategy 2020 for “language of instruction” and “medium of instruction” does not bring up any occurrences of either of these concepts. Searching for “mother tongue” and “bilingual education” results in four hits for “mother tongue”: two in endnote 7 (p. 78), one in box 3 (p. 15) and one in a reference called “background note (p. 70). Endnote 7 runs:

It should be noted that French is not a mother tongue in Mali and that grade 2 is a very early grade in which to test a student in a language that is not his or her mother tongue (World Bank 2011, p. 78).

In box 3 we find the following sentence:

Children in these age groups [between the ages of six and eight] benefit from the instructional use of their mother tongue, combined with instruction in the dominant language (ibid., p. 15).

But it is not only children between the ages of six and eight who benefit from having their mother tongue or a language they master well as the LOI; in fact this applies to students of all ages all over the world. There is no sound educational reason why the dominant language, which in Africa is the former colonial language, should be used as a language of instruction. In Africa what is referred to here as the dominant language is a language which children never hear outside school and which only five to ten per cent of the population master. As Ayo Bamgbose correctly observes:

Outside Africa no one questions why the languages of countries with smaller populations in Europe should be used as medium, even up to and including the university level. What seems to be lacking in many African countries is the political will to break away from the colonial policy and practice of limiting mother-tongue education to lower primary classes. Where such a will exists, much can be done in a short period of time. (Bamgbose 2005, p. 255)

The fourth time “mother tongue” is referred to, and the first and only time the concept of “bilingual education” appears, is in the following reference (called background note) on p. 70:

Perez-Brito, C., and N. Goldstein. 2010. “Mother-Tongue Instruction and Bilingual Education in the World Bank’s Education Sector Strategy 2020.” *Background Note* for the Education Sector Strategy 2020. World Bank, Washington, DC.

This background note does not seem to have had any effect whatsoever on the Education Sector Strategy 2020. It is bizarre that a document that claims to focus on learning does not discuss the language in which learning most easily takes place.

A review undertaken by a research team jointly put together by the UNESCO Institute for Lifelong Learning (UIL) in Hamburg and the Association for the Development of Education in Africa (ADEA) located in Tunisia found that the interconnectedness between language, communication and effective teaching and learning is generally misunderstood outside expert circles (Ouane and Glanz 2011).

In January 2010 Ministers of Education from 18 different African countries adopted policy guidelines on the integration of African languages into education systems which were informed by evidence from this research (ADEA 2010). Still, the progress, though there is some in a few of the so-called “francophone” countries, is slow and some countries, such as the island of Zanzibar in Tanzania, are actually reverting back to using English in lower grades. The increased privatisation of education in Africa has also led to elite schools for children of the rich, where the LOI is the language of the former coloniser. Wealthy parents send their children to these schools primarily because they are better resourced (Vuzo 2010, Brock-Utne 2012). LOITASA³ research has shown that if extra resources are given to the Kiswahili medium government schools in Tanzania, the pupils do even better than in the expensive private English medium schools (Bakahwemama 2010, Babaci-Wilhite 2010, Brock-Utne 2012).

English as the language of science and technology

In 2005 I was for several weeks sitting hour after hour in the back of a classroom in a secondary school in Tanzania (Brock-Utne 2005). I observed students who did not understand what the teacher was saying when he spoke English, and they would often ask the teacher to express himself in Kiswahili, a language they all commanded very well. My eyes fell especially on one gentle-looking boy who was completely passive and obviously did not understand anything of what was going on. Once I heard him ask one of his classmates in Kiswahili what the teacher was saying. When I spoke to him in Kiswahili in the break afterwards and mentioned that I had noticed that he did not understand the LOI, he admitted that my observation was correct. He did have great difficulties following the teacher, especially when the teacher did not switch to Kiswahili during the lesson. I asked him if it would not have been much better for him had the lesson been given in Kiswahili throughout. He admitted that it certainly would have been much easier since he would have been able to understand what the teacher was saying. When I then asked him did he not think one should change the LOI, he said no, he did not think so, because English was the language of science and technology. English was the language of modernisation and all technological development. Without knowing English one could not get a good job. He *had* to learn English and could not see another way than having it as a language of instruction. This is a very common misunderstanding in Africa.

³ The LOITASA (Language of Instruction in Tanzania and South Africa) project has been and is funded by NUFU (Norwegian Universities' Committee for Development, Research and Education). The first phase of LOITASA (2001–2006) ended with a conference in Norway entitled *Languages and Education in Africa* (Brock-Utne and Skattum 2009), a co-operation between five NUFU-funded projects at the University of Oslo, all dealing with languages and education in Africa. The project has produced seven books so far, four in the first and two in the second phase (2007–2011), all of which have been published in Africa. A seventh book consisting of chapters from the first four books and picked out by independent reviewers was published in 2010 (Brock-Utne et al. 2010). More information on LOITASA is available at www.loitasa.org.

Reverting back to English in Zanzibar

Zanzibar is an island state within the United Republic of Tanzania, and has its own semi-autonomous government made up of a Revolutionary Council and a House of Representatives. The whole population of Zanzibar speaks Kiswahili – a language which is spoken extensively all over East Africa. Many believe that the purest form is spoken in Zanzibar as it is the birthplace of the language. In spite of the fact that the whole population speaks Kiswahili, which has also been the LOI throughout primary school for many years, Zanzibar is now reintroducing English as the LOI in mathematics, science, geography and ICT from grade 5 in primary school.

In connection with a World Bank loan to the education sector, an evaluation was commissioned, showing that the competence in English was very low among primary school pupils, even among those who had an extra year for preparing to use English as the LOI in secondary school. The evaluation team found that “primary English does not provide an adequate basis for the switch to English in the secondary phase” (MEVT and University of Bristol 2005, p. 4). Yet they recommended “[g]radually introducing English medium teaching, starting first with one subject in, say Std. 4, increasing to core subjects, i.e. Maths, Science, Social Science by the end of Std. 7” (ibid., p. 5).⁴

The Ministry decided, partly built on this advice, to reintroduce English as the LOI from grade 5 in mathematics and science subjects, geography and ICT in all government primary schools (MEVT 2006). The new curriculum was introduced for first-graders who started their schooling in 2010. This means that in 2014 these pupils will be subject to being taught science, maths and ICT through English, a language neither they nor their teachers command (Babaci-Wilhite 2012).

This decision is surprising. It seems policy-makers have paid little attention to research on LOI and science education in Africa. Nor have they tried to learn from Asian examples, two of which, Sri Lanka and Malaysia, will be discussed later on in this article. But first, we might consider more generally the question: Could Africa learn from Asia?

Could Africa learn from some Asian examples in the area of language policy?

It is thought in some quarters that Africa has little to learn from Asia, in terms of language policy. My position is that some African countries could in fact learn from some Asian countries and vice versa when it comes to language policy. There are lots of parallels. Carol Benson and Kimmo Kosonen (2011) make a critical comparison of language-in-education policy and practice in Cambodia, Laos, Thailand and Vietnam and show that these four Southeast Asian countries have a lot to learn from the recently introduced language-in-education policy of Ethiopia. Ajit Mohanty (2011) compares language policy and practice in India and Ethiopia

⁴ In Zanzibar, primary school is divided into two sections. The second section comprises Standard 4–7, with pupils aged c. 11–14 years.

and finds that India should learn from Ethiopia when it comes to bringing teaching through the mother tongue of the children up to at least eight years of schooling.

African examples exist for the ability to come up with a pragmatic language policy in complex multilingual polities, like Adams B. Bodomo (1996) does for Ghana. His trilingual language policy allows Ghanaian children to use first their mother tongue, then a regional language and finally languages of wider communication at different levels of the educational structure. This has much in common with the Three Language Formula (TLF) proclaimed by the government of India in 1957 as a framework for languages in education. It recommended

- (1) a regional language or mother tongue as the language of teaching;
- (2) Hindi or (for Hindi mother tongue speakers) another Indian language; and
- (3) English as a third language.

Subsequently the TLF was modified by the government of India and variously interpreted by the state government (Mohanty 2011)

Both Africa and Asia are multilingual continents. Although more than 2,000 languages are spoken in Asia, the number of national and official languages in its 30 nations is only 45 (Kosonen et al. 2007). It is, however, interesting to note that in Asia, indigenous Asian languages outnumber European languages in being official, making the Asian situation different from Africa and Latin America, where European languages dominate as official languages and as languages of education.

Science education and English medium: the Sri Lankan experience

It is difficult to understand where the belief that science is better learnt in English than in other languages originates. While it is a belief one often comes across in Africa, the claim seems so unsubstantiated. As Josephat Muhozi Rugemalira et al. maintain:

It should be demonstrated that countries such as Finland, Norway, China or Japan, which do not teach their children through the medium of an “international language” are isolated and have lost track of technological developments beyond their borders (Rugemalira et al. 1990, p. 31).

Lakshman K. Wedikkarage (2009) relates that Sri Lanka introduced her local languages, Sinhala and Tamil, as languages of instruction in education even before having obtained independence from Britain in 1948. Steps were taken to introduce these languages as media of instruction in all primary schools in 1945, in secondary schools in 1953 and at universities in 1960. Wedikkarage notes that local educationists all argued that the change of medium of instruction from English to local languages enabled the majority of students to learn science subjects in their mother tongue, nullifying the earlier belief that studying these subjects in English would be an advantage. Local educationists in Sri Lanka argue that the mother tongue medium policy in Sri Lanka has contributed remarkably to the development process of the country. According to official UNICEF statistics of March 2010, the

literacy rate of Sri Lankan male youths (15–24 years) was 97 per cent, for Sri Lankan female youths in the same age group it was 99 per cent (UNICEF 2010).

The same statistics show a 97 per cent participation rate in primary education. This goes for both boys and girls. In addition to the increased life expectancy in general, Sri Lanka is the only country in South Asia that is not considered a low income country.

A. Mahinda Ranaweera, the former Director of Education at the Curriculum Development Centre, Ministry of Education, Sri Lanka, wrote about the great advantages to the population of Sri Lanka of the introduction of Sinhala and Tamil as the languages of instruction to replace English – *especially* for the teaching of science and technology:

[T]he transition from English to the national languages as the medium of instruction in science helped to destroy the great barrier that existed between the privileged English educated class and the non-English educated deprived classes; between the science educated élite and the non-science educated masses; between science itself and the people. It gave confidence to the common man that science is within his reach and to the teachers and pupils that a knowledge of English need not necessarily be a prerequisite for learning science (Ranaweera 1976, p. 423).

Ranaweera relates that the change of medium of instruction in science and mathematics lagged behind the other subjects because of special difficulties, such as the absence of scientific and technical terms, textbooks and proficient teachers. Yet he found the greatest need to switch over to the national languages in the science subjects. He gives two reasons (*ibid.* pp. 416–17; slightly paraphrased here) for this claim.

- First, science education was considered the main instrument through which national development goals and improvements in the quality of life of the masses could be achieved. Thus, there was a need to expand science education. The English medium was a great constraint which hindered the expansion of science education.
- Second, in order to achieve the wider objectives of science education, such as inculcation of the methods and attitudes of science, the didactic teaching approach had to be replaced by an activity- and inquiry-based approach which requires greater dialogue, discussion and interaction between the pupil and the teacher and among the pupils themselves.

As Ranaweera (*ibid.*, p. 417) notes: “Such an approach makes a heavy demand on the language ability of the pupils and will be more successful if the medium of instruction is also the first language of the pupils.”

However in 2001 the educational authorities in Sri Lanka reintroduced English as a medium of instruction for science classes at collegiate level (grades 12 and 13), also known as General Certificate of Education Advanced Level (G.C.E. A/L), in certain selected government schools. Wedikkarage (2009) critically analyses the discourses that led to a reverse in LOI for G.C.E. (A/L) science classes in certain selected schools at a time when such subjects were comfortably being taught in

local languages. Wedikkarage found that the major objective of the reintroduction of English as a medium of instruction for G.C.E. (A/L) science classes was in reality to improve English language competence of students. The idea that the English medium would lead to improved English competence of the G.C.E. (A/L) science students emerged as a central, but in fact totally unsubstantiated, belief.

Generally, when admitting students to G.C.E. (A/L) science classes in privileged government schools, a very strict selection procedure had been adhered to. Since the demand for these schools is very high, only the very best students are selected. However, in order to fill up the English medium classes, this strict selection mechanism was relaxed for students who promised to study (A/L) science subjects through the medium of English. Many of these students soon experienced that they were unable to study these subjects in English medium and sought permission to go back to mother tongue medium, creating considerable administrative problems in the schools.

According to the students Wedikkarage (2006) interviewed, most of the teachers in these English medium classes resorted to either Sinhala or Tamil when they could not properly explain their lessons in English. According to the same students, the teachers were far more effective presenting their subject matter when they taught in their mother tongue. In Sri Lanka, a country where science teaching has been carried out in the local languages, Sinhala and Tamil, for nearly 40 years, it was difficult to find teachers who were willing and competent to teach such subjects in English.

The failure of the educational authorities to teach English effectively as a second language was used as a pretence to reintroduce English medium in the public school system in Sri Lanka. The study by Wedikkarage of the difficulties both teachers and students face when using English as a medium of instruction indicates that what is required in the Sri Lankan context is not to go back to English medium, since the two local languages are being used effectively in the provision of education, but for students to learn English well as a foreign, yet important language. Most private sector employers do not require job seekers to have studied in English medium. What the private sector requires are people with a good knowledge of English

The case of Malaysia

Some of us have argued that without mother tongue education at all levels of education there is no future for African development (Prah and Brock-Utne 2009a, b). The experience of some post-colonial Asian countries and Western Europe point irrefutably to the inherent value in mother tongue education or at least education in popular, widely spoken, local languages. We have frequently argued that the prosperity and economic prowess of modern Asia is, in no small measure, attributable to the use of languages confidently understood, spoken and written by the overwhelming masses of the people.

On 8 July 2009, Malaysia announced that it would abandon the use of English to teach mathematics and science, bowing to protesters who demanded more use of the national Malay language. According to Education Minister Muhyiddin Yassin, Malay would be reinstated in state-financed schools from 2012 because teaching in English had caused academic results in those subjects to slip. There had at the time

been months of high-profile demonstrations by politicians and linguists, especially from the ethnic Malay majority, who claimed that a six-year-old policy of using English undermined their struggle to modernise their mother tongue. English had once been the medium of instruction in most schools in Malaysia, a former British colony. Nationalist leaders switched to Malay less than two decades after independence in 1957. In 2003, Prime Minister Mahathir Mohammad started a programme to resume teaching maths and science in English. Most other subjects were taught in Malay (Associated Press 2009). For the record, Malaysia has covered a trying journey to where she stands today on the issue of LOI in education. In further elaboration and clarification of this in the Associated Press news report, it was stated that Deputy Premier Muhyiddin Yassin had announced that from 2012 the subjects would be taught in Bahasa Malaysia in national schools, or in Chinese and Tamil in vernacular schools. Critics of the six-year-old policy of using English to teach the subjects argued that it had dragged down students' performance and was particularly unfair on children not proficient in the language.

“I wouldn't say it's a complete failure but it has not achieved the desired objectives that it was supposed to achieve,” Muhyiddin told a press conference. “The government is convinced that science and maths need to be taught in a language that will be easily understood by students, which is Bahasa Malaysia in national schools, Mandarin in Chinese schools and Tamil in Tamil schools” (Mothertongue-based.blogspot 2009).

Interestingly, it would appear that whereas in Malaysia the broader masses demonstrate and protest in the streets in favour of the use of their local languages as languages of instruction for science and technological education, in many African countries parts of the elites lead the way in support of the use of the colonial languages as languages of instruction.

Many Africans admire the visible success of contemporary Asia in all areas of social and economic life. There may well be a connection between this scientific, technological and economic ascendancy of Asia and the use of local languages as languages of instruction in education. If language is understood to be the central feature of culture, and development is seen as ultimately a cultural phenomenon, it is not difficult to discern the interconnections between language and development. In the introduction to our book on multiculturalism in Africa, Kwesi Kwaa Prah and I are not suggesting that the use of the mother tongue, the home language or the first language as the LOI automatically leads to social development (Prah and Brock-Utne 2009a, b). We are suggesting that there are other factors which contribute to development, but development cannot occur in the postcolonial circumstances of Africa and Asia without the centralisation of the languages of the masses as languages of educational instruction.

In Africa children learn science better if it is taught in a familiar language

In the introduction to her Master's thesis, Tanzanian student Halima Mwinsheikhe recalls her own school days:

I can recall from my school days about my Chemistry teacher who every ten minutes or so he would ask us: "Any question students?" Nobody answered and he would conclude: "If there are no questions, then you have understood everything!" We did not understand him at all, not only because he taught in English only, he spoke American English! He was a Peace Corp. The issue was language, as it is in our contemporary schools (Mwinsheikhe 2001).

Halima Mwinsheikhe later got the opportunity to study the effects of using English or Kiswahili as the LOI in secondary schools in Tanzania. In their PhD research, which was undertaken under the umbrella of the LOITASA project, both Halima Mwinsheikhe (2007) and Mwajuma Vuzo (2007) let the same teacher teach the same topic first in English or code switching⁵ and then some days later in Kiswahili. Two different secondary schools were sampled and six weeks spent in each of them. The experiment was being carried out at Form I level,⁶ and both quantitative and qualitative data were gathered. Mwinsheikhe concentrated on biology lessons while Vuzo concentrated on lessons in geography. I spent three weeks with them in the first school and two weeks in the second school. This I did both to increase the reliability of the findings and also to get some first-hand field experience. My own data were of a qualitative kind (Brock-Utne 2007).

Both Mwinsheikhe and Vuzo found that test results were significantly better when the students were taught in Kiswahili than when they were taught in English. The whole classroom atmosphere was also totally different. The students were eager, asked questions, raised their hands and competed to answer and even argued against the teacher. When they were taught in English, they were sitting there passively, afraid to be asked a question. The teachers would also punish them by having them stand for long periods of time by their desks. The teachers never punished the students when they were teaching in Kiswahili. Similar results we found in a study in a black township in South Africa. Vuyokazi Nomlomo (2007) found that when children were taught in isiXhosa, their own language, they did significantly better than when they were taught in English.

In a study by Bob Prophet and Peter Dow (1994) from Botswana, a set of science concepts was taught to an experimental group in Setswana and to a control group in English. The researchers tested understanding of these concepts and found that Form I (junior secondary level) students taught in Setswana had developed a significantly better understanding of the concepts than Form I students taught in English. In an experiment which Lilliana Mammino (1995) conducted at the National University of Lesotho, students who had written incorrect or meaningless statements in their chemistry papers were asked to explain their views on the given issues through their mother tongue to somebody who could then translate their answer into English. Mammino notes that in several cases, the translated answer corresponded to reasonable chemistry. The students had understood the chemistry, but had been unable to express their insight in English. Further discussions highlighted the details of the language difficulties that had led to absurd or meaningless answers which were

⁵ The term code switching refers to alternate use of two or more languages.

⁶ In the Tanzanian school system, Form I is the first year of secondary school; pupils at this level are about 14 years old.

often related to grammar and sentence construction, but also to the selection of individual words, or to how to combine them to express the desired meaning.

The Youruba experiment, which took place in Nigeria and is so well described by Ayo Bamgbose (2005), showed that students who were taught the longest in Youruba did better in all subjects, including English, than those who switched to having English as the LOI after the first three years in primary school.

It is a strange and sad fact that Ethiopia, the only country in sub-Saharan Africa which was never colonised, should choose to use a foreign language, English, as the medium of instruction in secondary and tertiary education. In primary school, Ethiopian languages serve as languages of instruction, in some districts for the first four years only, in other districts for six years and in yet other districts for all eight years of primary school. Some of the Ethiopian languages (Amharic, Oromifa, Tigrinya, and more recently Somali) are used as languages of instruction also in grades 7–8 of upper primary education. On the basis of already existing data, Alemu Gebre Yohannes Mekonnen (2005, 2009) made an analysis of grade 8 achievements of students who had had Amharic, Oromifa, Somali, Tigrinya or English as the LOI. He found that students who had gone through mother tongue education for the most number of years had higher mean achievement scores in mathematics, biology and chemistry than students who had started with English as the medium of instruction in lower grades. The achievement of the two groups in English was mixed. Students whose LOI was one of the mother tongues – Afan Oromo⁷ or Somali – also performed higher in English as a subject than students whose LOI was English. The English achievement scores of those students whose LOI were Amharic and Tigrinya were, however, slightly lower than those who were taught in Afan Oromo, Somali or English. A regression result of the data showed that a single variable (i.e. the English language) contributed negatively to achievement. This means that students taught through the English language achieved less than those taught in the other languages (i.e. Amharic, Oromifa and Tigrinya).

Just like Vuzo and Mwinsheikhe show for Tanzania, Nomlomo for South Africa, Prophet and Dow for Botswana, Bamgbose for Nigeria and Mammino for Lesotho, Mekonnen shows that the use of English as a language of instruction in Ethiopia functions as a barrier to learning both of subject matter, the native languages and English. Like in Tanzania in classrooms where the LOI is supposedly meant to be English, code switching is the norm.

Mekonnen (2005, 2009) found that from a pedagogical point of view, the use of mother tongues in education is an objective advantage while the use of a foreign language is an objective disadvantage for students' performance. The findings reveal that the use of mother tongues as LOI for mathematics and sciences at upper primary education (grades 7 and 8) has a positive impact on the students' mathematics and science achievement scores. Mekonnen concludes by noting that the most appropriate way to learn English would be to have English taught as a subject by teachers who are proficient enough in the language itself and equipped with appropriate methods of teaching the language. Other subjects are better taught in a language more familiar to students than English.

⁷ *Afan Oromo* is another term for *Oromifa*. I have respected the author's spelling, though the Oromo themselves usually write *Afaan Oroma* and *Oromiffa*.

Donor competition over the language of instruction in Africa: the case of Rwanda

The influence of English as an international language seems to be growing in many parts of the world. But in Asian and European countries this means that English is taught earlier and for more hours as a subject than before. I was part of a consultancy team visiting Mongolia some years back and noted that the first foreign language the pupils had to learn was English and not Russian as it had previously been (Review 1999). But the LOI all through the educational system was Mongolian. “Of course”, the Mongolians told me. “Mongolian is our language.” At the University of Oslo where I work, almost all of the teaching takes place in Norwegian. The few courses taught in English have been created to cater for non-Norwegian-speaking international students.⁸

In Africa the use of ex-colonial languages as languages of instruction continues. Even after gaining independence from Belgium in 1962, Rwanda retained French as the LOI and was termed a “francophone” country, though the whole population, Hutus and Tutsis alike, speak Kinyarwanda and many of them also Kiswahili. In Parliament, in administration at the national level and in the Supreme Court, Kinyarwanda is the language predominantly used. The 2003 Education Sector Policy declared the following policy on teaching languages:

Kinyarwanda, French and English shall continue to be offered in schools: Kinyarwanda as medium of instruction and English and French as subjects in all lower primary schools as well as private, whilst either English or French will be offered as a medium of instruction in the upper primary cycle and in secondary schools (Rwanda 2003, p. 23, here taken from Rosendal 2010, p. 130).

In fieldwork undertaken by Tove Rosendal in 2006, she found that most primary schools in Kigali used French as LOI while Kinyarwanda was more frequently used in the countryside. In an article published in the same year, Michele Schweisfurth (2006, p. 703) mentions that the Government of Rwanda at the time insisted on a trilingual education policy (Kinyarwanda, French and English) to secure greater equity between groups who favoured one or the other language. Schweisfurth (*ibid.*) notes, however, that “development” partners at the time expressed concern for the potential impact of a trilingual policy, claiming that learners struggling in one language might be further handicapped by having to cope with three languages and that quality in education, as a dimension of Education for All (EFA), might suffer. A trilingual policy might have been good for Rwanda provided that Kinyarwanda, a language which is spoken by 99.4 per cent of the population (Rwanda 2005, p. 38), had been the LOI and French and English learned as foreign languages, as subjects.

The “development” partners got their way and in 2008 both the national language Kinyarwanda and French were ousted from all levels of education and

⁸ It must, however, be admitted that over the last years publishing in English has given better economic rewards to the faculties, departments and individual researchers. Many of us see this as a threat to the further development of academic Norwegian and a threat to democracy (see e.g. Brock-Utne 2009).

replaced by English (Rosendal 2010). The decision to use English as the LOI from the very first grade of primary school was implemented at the end of 2008 in violation of recommendations by UNESCO and the African Union. The sudden change in language-in-education policy was not foreseen in any education sector documents. But on 8 October 2008 (Rwanda 2008, here taken from Rosendal 2010, p. 131) the Cabinet resolved as follows:

As a part of enhancing Rwanda's role within the East African Community in particular, and at international level in general, Cabinet requested:

- the Minister of Education to put in place an intensive programme for using English in all public and government-sponsored primary and secondary schools and higher learning institutions; and
- the Minister of Public Service and Labour to put in place a programme to help government employees at all levels learn English, starting with top-ranking officials.

A better way to have strengthened the East African Community would have been to make Kiswahili a language to be studied, since in Tanzania, Kenya and Uganda. Kiswahili is more widely spoken and better known than English. In a paper presented at the 2005 Oxford Conference on Education and Development, Rachel Hayman (2005) notes that in terms of education policy-making in Rwanda after the genocide, the UK and the World Bank have been the most influential development partners. The development partners engaged in the textbook sector in Rwanda were: the World Bank, UNICEF and the UK (ibid., p. 6). The UK was not involved in Rwanda prior to the genocide but is now the largest bilateral donor to Rwanda, and the largest education sector donor.

Apart from donor pressure there has also been a transfer of models of educational policy and practice from neighbouring countries, such as Uganda and Tanzania, through the return of Tutsi refugees who fled the country before or during the genocide. Schweisfurth (2006) terms this transfer *second generation colonialism*, since a number of these policies have their origins in British colonial models. Though the children of the educated elite are able to cope in this system as a result of good and expensive private schooling, extra tutoring, assistance at home and extra resources, the masses of African children are not. The use of the ex-colonial languages as medium of instruction in African schools increases inequality in the education system. So does the introduction of school fees and the creation of private schooling.

Being assessed in a language one does not understand

In an article on TIMSS⁹ and PISA,¹⁰ Norwegian professor of physics Svein Sjøberg (2006) mentions that the World Bank has put up as a conditionality for some

⁹ The Trends in International Mathematics and Science Study (TIMSS) is a project run by the U.S.-American National Center for Education Statistics. Their survey gathers data on the mathematics and science achievement of U.S. students in grades 4 and 8 and compares them with those of students in other countries. More information is available at <http://nces.ed.gov/timss/>.

¹⁰ The Programme for International Student Assessment (PISA) is a project run by the Organisation for Economic Co-operation and Development (OECD). Their survey is designed to provide policy-oriented

developing countries that they have to introduce “TIMSS-like” tests in order to get support for the education sector. The World Bank finances the participation of several developing countries in TIMSS tests. Sjøberg is afraid that the TIMSS curriculum will function as a norm or ideal the world over. Many developing countries, especially those with a colonial past, have worked hard to liberate themselves from curricula, books, tests and ideals of their former colonial masters.

When the World Bank Group argued in the *Educational Policies for sub-Saharan Africa*, often abbreviated EPSSA (World Bank 1988),¹¹ that academic standards in African countries were low, it did so by referring to low test scores earned by African pupils and students on tests developed in the West, for instance by the IEA (International Association for the Evaluation of Educational Achievement). It has to be remembered that these tests originate from a Western culture and entail Western concepts. It also has to be remembered that the majority of African students who are required to take the tests often have to do this in their second, and frequently even in their third or fourth language, while the majority of students in Europe and Asia answer them in their mother tongue or a familiar language. The World Bank Group refers to an IEA mathematics test on which students in Nigeria and Swaziland answered just over half as many items correctly as students in Japan, the highest-scoring country (World Bank 1988, p. 39). Further results of IEA tests in reading comprehension, general science and mathematics administered to some African countries led the World Bank Group to deduct: “The general conclusion to be drawn from these studies is that the quality of education in sub-Saharan Africa is well below world standards” (World Bank 1988, p. 40).

In the 2003 TIMSS mathematics test for grade 8 it was reported that out of the 45 countries that participated, Ghana finished in penultimate position at 44. Ghanaian students scored an average of 276 points compared to the international average of 466. In two articles published in *Ghana News*, Y. Fredua-Kwarteng and Francis Ahia (2005a, 2005b) try to explain these low results. In the first article they discuss the results in mathematics, in the second the results in science. They start by explaining that a country whose national mathematics pedagogy is compatible with the one undergirding the test is more likely to do well than a country with a different mathematics pedagogy. In Ghana, according to the authors, teachers merely transmit mathematical facts, principles and algorithms, and students are commanded to learn them in a passive and fearful manner. Kwarteng and Ahia claim that students in Ghana are not encouraged to pose questions or engage in problem-solving activities in order to attain conceptual understanding of what they are being taught. Students simply memorise the algorithms and regurgitate them during tests or examinations.

The authors find that the main reason why the students do not learn problem-solving and problem-posing skills lies in the use of a foreign medium as the LOI:

Footnote 10 continued

international indicators of the skills and knowledge of 15-year-old students, assessing three literacy domains: reading, mathematics and science. More information is available at <http://www.pisa.gc.ca/eng/home.shtml>.

¹¹ For an analysis of this important document see Brock-Utne (2000).

Since Ghanaian students took the test in English (the so-called official language of Ghana), those whose first language is non-English are at great disadvantage. We are not surprised that countries that top-performed in the mathematics test – Taiwan, Malaysia, Latvia, Russia – used their own language to teach and learn mathematics (Fredua-Kwarteng and Ahia 2005a).

Kwarteng and Ahia, both mathematics educators, argue that a Ghanaian student who is proficient in his or her native language would be likely to answer most of the questions correctly if the questions were translated into their native language. The authors further criticise the tests for being rooted in a Western, especially American, environment using concepts which are unfamiliar in Ghana, such as, for instance, a “parking lot”. From their professional experience, students are more likely to solve mathematical problems if they are able to relate to the cultural context of the problem.

Changing a belief system which has become *common knowledge*

Having English or French as the LOI does not promote understanding and learning in the majority of schools in so-called Anglo- or Francophone Africa. The great majority of pupils lose out. They drop out of school, have to repeat grades, lose their self-confidence. So why does this system persist? Who benefits from it? Whose interests does it serve? Some powerful groups like the publishing industry in Britain, the U.S. and France profit from it. It is promoted by the former colonial powers and supported by parts of the African elite. At the LEA (Languages and Education in Africa) conference at the University of Oslo in June 2006, one of the African participants said: “We have to admit that we, the elites, profit from this system. We send our children to expensive schools with good English teachers. We see to it that they get private tutoring, buy textbooks, supplementary readers and good DVDs for them. We are part of the problem.” Another African answered: “Yes, that *is* correct. We *are* part of the problem, but we are also part of the solution.” Most of the African academics know that the majority of Africans cannot learn well if the learning is going to take place in a language they do not master. Some defend this system, which may be in the immediate interest of their own children but not beneficial to their country, to the masses of people or to the economic growth of Africa.

Michel Foucault (1988) claims that belief systems gain momentum (and hence power) as more people come to accept the particular views associated with that belief system as *common knowledge*. Some ideas, being considered undeniable “truths”, come to define a particular way of seeing the world. At the moment, those who stand to lose most from having a foreign language employed as the LOI also consider it an undeniable “truth” that having English as the LOI is the best way to learn English. This is a misconception, a false belief. It is, however, a belief that donors, the former colonial powers, the publishing industry in the West as well as the African elite have an interest in promoting. These power groups are, however, as Gene Sharp (1980) points out, dependent for their positions and political power

upon the obedience, submission and cooperation of their subjects. Misconceptions may be altered. Once the majority of Africans understand how this false belief holds them down and works to the advantage of the powerful, the allegedly powerless may unite to do away with the misconception.

African academics such as Bamgbose (2005), Ouane (2005, 2009), Mazrui (1997), Mekonnen (2009), Qorro (2009), Desai (2006), Rubagumya (2003), Prah (2005), Nomlomo (2007), Vuzo (2007), Bgoya (1992, 2009), Bodomo (1996), Makalela (2005) and Mwinsheikhe (2007) see how the formal school sector is enacting a re-colonisation of education in Africa through the curriculum promoted and the LOI used. These academics may today seem to constitute only a small group, but the hope for Africa lies in such people gathering sufficient momentum, and hence power, which will lead to political will, to have *their* views accepted as *common knowledge*.

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