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Citation

Chebanne, A. M., & Pinxteren, L. M. C. van. (2021). Why is a gradual transition to Botswana's languages in higher education necessary? How can it be achieved? *Southern African Linguistics And Applied Language Studies*, 39(4), 390-403. doi:10.2989/16073614.2021.1981766

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Note: To cite this publication please use the final published version (if applicable).



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To cite this article: Anderson Monthusi Chebanne & Bert van Pinxteren (2021): Why is a gradual transition to Botswana's languages in higher education necessary? How can it be achieved?, *Southern African Linguistics and Applied Language Studies*, DOI: [10.2989/16073614.2021.1981766](https://doi.org/10.2989/16073614.2021.1981766)

To link to this article: <https://doi.org/10.2989/16073614.2021.1981766>



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Published online: 06 Nov 2021.



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Why is a gradual transition to Botswana's languages in higher education necessary? How can it be achieved?

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Abstract: Where other authors have argued for the need for using indigenous languages in education in Botswana on human rights or efficiency grounds, this article argues for this need for economic reasons, in line with the country's vision for 2036. Further increases in enrolment in higher education will mean that the country's education system is stretched beyond its capacities, as shown by benchmarking Botswana's educational system against that of Estonia's. A transition towards indigenous languages is practical by using the proposed concepts of *discerned* and *designed* languages. However, it should be based on five key principles, which are introduced in the article. Based on a new discussion of ease and difficulty of language learning, these principles are applied to the Botswanan situation. The article concludes that Setswana could be developed as a medium of instruction for the great majority of people in Botswana, but that a special position is justified for the Khoisan languages. The article ends by suggesting a number of concrete steps that should be taken over the coming years in order to make such a transition a practical possibility.

Introduction

Botswana's Vision 2036 aims to transform the country into a high-income economy by 2036.¹ This vision is built on several pillars, one of which is human and social development, which includes education. Specifically in the educational sector, Botswana is following its National Implementation Plan for UNESCO's Sustainable Development Goal 4, with 2030 as the time horizon (Ministry of Tertiary Education, Research, Science and Technology 2018). It is aligned to the overall vision for 2036 and aims to help the transformation of Botswana into a knowledge-based society. The vision maintains Botswana's policy of English as the 'official' and Setswana as the 'national' language; however, we argue that this policy is incompatible with transforming the country into a high-income economy.

Other authors have shown why the introduction of indigenous languages in the education system is necessary for educational and human-rights related reasons; an overview is provided in Chebanne and Kewagamang (2020). We agree with those reasons. However, as this article will demonstrate, there are pressing economic reasons for using indigenous languages as well. This is related to the fact that in order for a transformation into a high-income economy to happen, Botswana must increase the participation in higher education (the enrolment ratio), building on the progress that has been made over the past years. The National Implementation Plan does not give concrete targets for such participation (other than that it has to increase), but we argue that for the economy to grow to a high-income status, participation in education will have to increase to approach the levels of the Global North. This puts demands on the educational system of the country which are currently unable to be met and, in future, will be unable to be met because of the constraints imposed by current language policies.

This article has three purposes:

1. To demonstrate why a further increase in enrolment in higher education in Botswana will make a gradual transition to using indigenous languages as a medium of instruction necessary;
2. To outline what the principles should be that could guide such a transition; and

3. To suggest a number of concrete steps that should be taken over the coming years in order to make such a transition a practical possibility.

The argument as outlined above is presented in the three sections that follow. The theoretical framework is taken from van Pinxteren (2021). The concluding section provides a summary and some final remarks.

Why a transition to indigenous languages will be needed

Before we did, many other authors have argued in favour of a transition to African languages (Djité 2008; Bamgbose 2011; Prah 2012; Kamwangamalu 2016; Wolff 2016), but they have mostly limited themselves to presenting reasons related to educational efficiency, or cultural and/or human rights considerations. Even though we basically agree with those arguments, we choose a different approach, one that is based on economic considerations and on a discussion of what we can actually expect an education system to deliver. In order to do that, we will benchmark Botswana's educational system against that of Estonia's, showing why the use of national languages is in fact a necessity in the Global North. Before we are able to do that, however, we first briefly need to discuss the concept of 'language' and introduce the distinction we propose between 'discerned' and 'designed' languages.

On discerned and designed languages

Even though there seems to be no unanimity about the number of languages spoken in Botswana, it is clear that the number can be put at a few dozen. The Ethnologue, one of the most often-quoted sources in this domain, puts the number of indigenous living languages spoken in Botswana at 26.² This number itself is often used as a way of avoiding a discussion on using indigenous languages as a medium of instruction. It is argued that the sheer number of languages would make this impractical. That argument has value, but we believe that it should not be the end of the debate, because we believe that it would be entirely feasible (and advantageous to Botswana) to choose a much more limited number of languages. In order to understand that, we propose to make a distinction between what we call 'discerned' and 'designed' languages, inspired on the distinction between *Abstand* and *Ausbau* languages as proposed by Kloss (1967).

The term 'discerned' points to the act of discerning. These are speech forms, registers or dialects that are so different from one another that there is justification for the human and social act of pronouncing a dialect to be a separate language. This is therefore basically a *linguistic* concept. The term 'designed' is more *sociological* in nature. It points to the act of extending a spoken language into a standardised language, including its written form. This is very similar to the concept of 'intellectualisation'. Prah (2017: 216) quotes Sibayan's (1999) definition: an intellectualised language is a 'language which can be used for educating a person in any field of knowledge from kindergarten to the university and beyond'. The word 'designed' reinforces the notion that there is a social process involved here. This reinforcement is intentional. Many languages (including French and Italian, and certainly also Bahasa Indonesia and Turkish) have a strong design element to them.

It is illustrative to look at what this distinction means in practice, for example in a country like Germany. In Germany, the Ethnologue discerns 15 living German-like languages that are spoken in the country.³ Yet education is not provided in these 15 discerned languages. Instead, all speakers of these different discerned languages spoken in Germany use a common, designed and standardised form of German – *Hochdeutsch*. This standardised form is actually *spoken* by almost nobody in Germany, but it is used in all formal domains and thus serves as a common *designed* language for speakers of all 15 *discerned* languages spoken in Germany. It is important to note that in order to master such a designed language, a certain amount of formalised learning is always required. It is not wholly identical to anybody's mother tongue. In fact, *Hochdeutsch* is not *mutually intelligible* by all these German-like languages; it needs to be learned in school. Still, it makes more sense in Germany to use *Hochdeutsch* as the common designed language, as opposed to using, for example, Polish.

This means, then, that in principle, for educational purposes, a limited number of *designed* or intellectualised languages could serve a larger number of *discerned* languages. But why does that matter and how should such a limited number be chosen?

The challenge of education for all

As we have argued above, formal education in a specific language involves learning in a medium that is different from the spoken word. It involves learning a designed language in the sense meant above that is related to but still different from the discerned language spoken at home. For some children, this is too difficult in any language. According to a meta-analysis by McKenzie et al. (2016), about 1% of all children suffer from some form of intellectual disability. Intellectual disability means that these children either cannot learn to read or write or if so, only to a very limited level. This means that around 99% of all children can be taught basic reading and writing skills. The number of people who are or can be taught to be 'literate' in the sense that they can no longer be considered 'functionally illiterate' is smaller. Functional illiterates, according to Schlechty (2001: 7) are those people who have reading and writing skills that are inadequate 'to manage daily living and employment tasks that require reading skills beyond a basic level'. According to the UK National Literacy Trust, one out of six (16.4%) of all adults in England are functionally illiterate.⁴ In 2019, the World Bank launched a new indicator dubbed 'learning poverty'. 'Learning poverty means being unable to read and understand a simple text by age 10' (World Bank 2019: 6). Even in high-income countries, there is a percentage of children in this category – fewer than 10%. So, even the best educational systems in the world do not manage to teach all children to read and understand a simple text.

The inconvenient truth is that learning abilities are not equally divided over the population. Some people are more intelligent than others. Tests have been calibrated so that the average IQ is 100 – 50% of all children are supposed to have 'average' intelligence. At the upper extreme, just over 2% of the population score 130 or above. So, some children can be taught with less effort than others. For language teaching, it is important to note that IQ is not one-dimensional. There are different, although interrelated, forms of intelligence. Li (2016) has shown that language aptitude is a valid construct. This construct is related to, but independent of general intelligence. What this means is that some children may be good at language, but hopeless in mathematics. For others, it may be the other way around. Then also, of course, some children are good at both.

For a country like Botswana, these simple facts have tremendous consequences, although they are usually overlooked. If the aim is merely to educate a small elite group, historical experience has shown that the medium of instruction does not matter – any language can be used. In Europe for a long time, elite education was in Latin. In India, Sanskrit has been used as a medium of instruction for centuries. All over the Arab world, the classical Arabic used for instruction is very different from the spoken languages. And in Botswana, the use of colonial languages did not seem to block the emergence of great intellectuals.

However, if development requires 'education for all' (Sustainable Development Goal 4), the language of instruction does matter. Almost everybody can be taught or can learn some words in a foreign language. However, teaching a high percentage of all children a foreign language to a level high enough to be able to profit from more and more advanced instruction in that language takes time and effort. Lower language aptitude means more effort is required. Under colonial education systems, this was not really relevant. Education was aimed at selecting those most talented and reached only a small proportion of the population. Therefore, under colonial education systems, it was not necessary to worry about the language of instruction – any language of convenience could serve equally well. As education expands, this is bound to change. But at what level of enrolment in education is such a change likely to occur, if at all?

Theoretically, the following questions need to be answered:

- A What percentage of the population can an education system educate to a reasonable level of proficiency in a 'foreign' designed language?
- B What percentage of the population is an education system expected to provide with tertiary education?

In Botswana, if and for as long as percentage A) is greater than percentage B) there will be no problem in providing tertiary education in English. However, as soon as percentage B) becomes greater than percentage A), English-language tertiary education will not be an option for all of tertiary education. This point is so important that it merits repeating it in different words. If the Botswanan education system educates *fewer* people than the number of people it can teach formalised English to the required level, then it can use English as medium of instruction. However, as soon as the Botswanan education system is expected to educate *more* people than the number it can teach a formalised (designed) English, then it can no longer make exclusive use of English as a medium of instruction.

In order to get a bit more precise with this, we need to first clarify what we mean by 'tertiary education' and then what we mean by 'the required level' of language knowledge.

Tertiary education and the required language level

In our terminology we follow the International Standard Classification of Education (ISCED) 2011, as developed by UNESCO (2012). According to this scheme, 'tertiary education' is comprised of ISCED levels 5 through to 8. Level 8 stands for 'doctoral or equivalent level', whereas level 5 stands for 'short cycle tertiary education', not to be confused with level 4, which stands for 'post-secondary non-tertiary education'. It is important to note that in this scheme, 'tertiary education' refers to more than what is commonly understood as university education. It also includes education, for example, by polytechnics at the higher vocational level.

Secondary education comprises ISCED levels 2 and 3 – in Botswana, this corresponds to the distinction between junior and senior secondary school. Technical and vocational education and training (TVET) generally is at levels 3 and 4. Primary education then corresponds to ISCED level 1.

In order to compare the participation in education in various countries, we use the gross enrolment ratio (GER). This ratio is the total enrolment within a country 'in a specific level of education, regardless of age, expressed as a percentage of the population in the official age group corresponding to this level of education' (UNESCO 2009: 9). It is important to realise that in theory, the GER can be above 100. This can happen if more people are enrolled at a certain educational level than there are people in that specific age bracket. A further indicator is the completion rate at a given level of education. This is the percentage of the school-age population that completes the education.

There are a number of systems used internationally for assessing the level of proficiency in a language. One of the more common ones is the Common European Framework of Reference for Languages (CEFR), which has six levels.⁵ In order to be able to profit from tertiary education, a language proficiency level corresponding to at least the CEFR B2 level is considered to be necessary. This level stands for 'upper intermediate' and it is the level used by many universities, although the University of Cape Town in South Africa uses the higher C1 level as its minimum requirement⁶ still below the highest C2 level. For Botswana, the Botswana General Certificate of General Education (BGCSE) 'C' pass seems to roughly correspond to the B2 level.

Now that the terms 'tertiary education' and 'required level of proficiency' have been clarified, we can become a bit more precise about what the education system of Botswana is able to achieve in this area and to benchmark it against another educational system – that of Estonia's in Europe.

What can an educational system achieve?

What is the percentage of the population that Botswana's education system is currently able to educate to the B2 level of proficiency in English at the end of secondary and the start of tertiary education? That percentage can be estimated by multiplying the completion rate for senior secondary education by the percentage of students that obtain a 'C' or higher in English in the BGCSE examinations. UNESCO gives the 2011 completion rate in Botswana for senior secondary education (the latest available data) as 53.9%. According to the 2016 report from the Botswana Examinations Council, a 'C' or better in English was obtained by 24.42% of those who sat for the BGCSE. That means that currently, Botswana's education system is able to educate slightly more than 13% of its young people to a B2 level of proficiency in English. How does that compare to the achievements of other education systems? Is this good or bad? In order to answer that question, we

need to benchmark the system against another education system. The benchmark we propose to use here is that of the Estonian education system.

Estonia was chosen for several reasons. One is that Estonia is a small country that gained its independence from the Soviet Union in 1991. It has never been implicated in any type of colonial activity. After independence, it had to reform its education system, which up until then was based on the Soviet model, with Russian as the medium of instruction. Furthermore, the Estonian language (spoken by around one million people) belongs to the Uralic language family and is very different from English (we will look at the relevance of that further down). Another reason is that Estonia was one of the countries that participated in a study commissioned by the European Commission into second-language proficiency in reading, writing and listening of secondary students in the last year before their final exams (European Commission 2012).⁷ That study yielded data that are useful for our purpose. It found tremendous differences in performance in Europe, ranging from Malta (60% of students at B2 level) to France (5% of students at this level). One of the best-performing countries was Estonia, with 41% of the secondary school students at the B2 level. Note that Estonian⁸ is the designed language used as medium of instruction in secondary education in the country – English is taught as a subject. The Estonian completion rate for senior secondary education in 2014 was 82.7%. Therefore, the Estonian education system is able to educate almost 34% of its young people to a B2 level of proficiency in English, as compared to 13% for Botswana. This benchmarking yields two interesting insights:

- 1) It is not necessary to use English as medium of instruction to teach young people a good level of English – such a result is more easily obtained by teaching English as a subject; and
- 2) If Botswana were to emulate the Estonian education system, it could give more children a better level of English than it currently does. The performance of Botswana's educational system in terms of English-language teaching is far from optimal.

However, there is a further, more important point we want to make here. In order to make that point, we need to take one further step. We need to look at the level of enrolment in tertiary education. In Botswana, this level has increased significantly over the years. Over the period between 2016 and 2019, it was consistently around 25%.⁹ However, for Estonia, the level has also increased and stood at 70.4% in 2018.

These figures speak volumes. Clearly, with English language teaching results at the levels given above, it can come as no surprise that Botswana's education system is experiencing difficulties in using English as a medium of instruction in tertiary education. Botswana is unable to give enough of its young people the required level of proficiency in English, compared to the number of places available (13% of children at the required level, but places in tertiary education available to 25%). Compare this to Estonia. The Estonian education system is able to give more young people a good level of English than Botswana, yet it has wisely chosen not to use English as medium of instruction in all of its tertiary education. In Estonia, 34% of children are at the required level of English, but tertiary education is available to over 70%. Because the enrolment level in tertiary education in Estonia is nearly three times as high compared to Botswana, Estonia has to use Estonian in large parts if not all of its tertiary education system.

We have pointed out that language abilities are not distributed equally through the population. Some learn languages more easily than others. This also means that the level of effort an education system has to bring to bear on teaching a foreign language (or indeed any designed language) to a certain proportion of the population increases as enrolment increases. Giving 10% more children a good level in English will require more than 10% additional effort simply because education will be extended to those less gifted in language. It is not difficult to find lamentations in the literature about declining levels of English in education in Africa. However, such laments could be seen as a reflection of the success of education, rather than its failure. This is because increased enrolment coupled with similar inputs will inevitably lead to lower results as a result of a decline in the average level of language ability in the student population.

However, there is another inescapable conclusion. If enrolment in tertiary education in Botswana increases and if it approaches the levels of the Global North (as will be needed in order to achieve the ideals contained in Vision 2036) a transition to using indigenous languages as media of instruction, at least in parts of tertiary education, will become an unavoidable necessity. In fact, such a transition would already be a requirement if the efficiency of education were to be increased at relatively little expense. Thus, the answers to the questions asked above are now clear. Today, in Botswana, percentage A) is smaller than B). Using English as a medium of instruction in tertiary education is problematic, to say the least. This is not due to any fault of the students or teachers – it is due to structural limits to what any educational system is able to achieve. In future, this problem will only get worse. It will be impossible to give a good enough level of English to all those intellectually able to follow tertiary education. Instead, recourse will be needed to Botswana's indigenous languages.

But if this is so, then how should such a transition be brought about and what would the principles be underlying the difficult choices that will have to be made? That is the topic of the next section.

How to choose indigenous languages for use in education?

One seemingly easy way out of the language choice problem would be to simply choose those languages with the largest numbers of speakers. However, we feel such a strategy could lead to the disenfranchisement of large groups of speakers of minority languages and to interminable debates and resistance. Instead, we hold that a set of clear, equitable and universally applicable principles are needed which would give language policy a sound scientific basis. Such principles are what we propose below.

Principles for rational language choice

In line with the concepts of discerned and designed languages, the *first principle* we would propose is to develop a *limited number* of designed languages for education. It is not practical, but also not necessary, to aim to develop all discerned languages into designed languages – a point also made by Brock-Utne (2017).

The *second principle* we propose follows from the first. These designed languages should be chosen in such a way that they are *easy to learn* for as many speakers of discerned languages as possible – a principle that was already suggested by Nwoye (1978), as cited by Laitin (1992). We will return to that later in this article. This principle is in direct contrast with the current strategy of using English as the designed language to be used by everybody. The strategy makes learning equally difficult for all, instead of equally easy. It is essentially neo-colonial and ultimately very damaging to Botswana, because it effectively bars large sections of the population from gaining access to meaningful education and to public discourse. Therefore, it is incompatible with Botswana's vision for economic and social development.

As a complement to the second principle, the *third principle* would be to strive for *inclusivity*, in other words, to choose the various designed languages in such a way that, as much as possible, everyone has to exert a relatively low but relatively equal effort to learn them.¹⁰

Then, a *fourth principle* seems appropriate, namely that of making use of *existing bilingualism* as a resource. There are certainly parts of Botswana where multilingualism exists due to significant exposure to several languages from a very early age. There could be situations where finding an easy to learn designed language for discerned language 'X' is difficult or impractical, but if those children also speak language 'Y', it might be possible to find a cost-effective, inclusive solution.

Lastly, there is a *fifth principle* we would propose: *build incentives for linguistic collaboration*. It can be expected that any linguistic group will want its own discerned language (or dialect) to be developed as a designed language in the hope that it will be easier for them to learn and thus give them a comparative advantage over competing groups. But the consequence of this could be that a great many discerned languages are developed. The only practical outcome of this would be to strengthen the position of English as a lingua franca, as can be seen, for example, in South Africa. That would be counterproductive.

These principles are all related in some way to the idea that the use of a designed language always involves some degree of learning, but that it makes sense to use a language that is *easy to*

learn. What difference does this make and how can we be more precise about ease and difficulty of language learning?

About easy and difficult languages

The issue of which languages are more easy or more difficult to learn and for whom has not received wide attention in the literature. Van Pinxteren (2020: 137) points out that

the question of what ease or difficulty of language learning means for large groups of learners and for an education system has not been asked in the literature in that way. Yet, this is a question of key relevance for Africa, where populations are supposed to be taught in a language that most learners do not speak from birth.

Common sense suggests to start [sic] from the principle that languages that are close to one another are easier to learn and to be taught in formal education than languages that are very different from one another. In other words, the distance between any two languages can be taken as an indicative or rough measure for how easy or difficult it may be to learn another language for a speaker of a given language or to teach the new language to large groups of learners.

Van Pinxteren quotes the United States experience that shows that there is considerable difference in learning 'easy' or 'difficult' languages to a B2 or equivalent level. For a talented American learner, the difference can vary between 10 weeks of full-time instruction for a 'very easy' language to more than 80 weeks for a 'very difficult' language. As an approximation, van Pinxteren has benchmarked the US scheme against scores of language distance (Levenshtein or normalised edit distances) that can be calculated through the Automated Similarity Judgement Program (ASJP).¹¹ We follow his classification of ease of language learning, relating ASJP distance scores to categories of ease or difficulty of language learning. This classification goes from very easy to very difficult (see Table 1).

A categorisation based on these scores has its limitations because it does not fully take account of differences in sounds and tones between languages or of stricter or less strict grammatical rules of languages. Therefore, any suggestions for language choices based on these categorisations would need to be validated through expert linguistic knowledge.

For Botswana, it is important to note that English is either 'difficult' or 'very difficult' for all speakers of an indigenous language spoken in Botswana. However, the combination between English and an indigenous language is not the only difficult combination in Botswana. This is due to the fact that Botswana's languages belong to different language families. For speakers of any of the Bantu languages, almost all of the Khoisan languages are either 'difficult' or indeed 'very difficult'. No combinations of a Bantu and a Khoisan language is 'easy', let alone 'very easy'. Therefore, an attempt to introduce one of the current indigenous languages as the national language (as was done with Kiswahili in Tanzania) will disadvantage other language communities who would then rather invest their time in learning English. Thus, in future, higher education in Botswana may have to employ multiple languages. But how many and which ones?

Again, a characteristic of Botswana's language ecology is clearly that its languages belong to two very different language families. There is the family of Narrow Bantu languages and the family of

Table 1: ASJP distance categories (van Pinxteren 2020: 141)

ASJP distance score	Category
< 60	Very easy
≥ 60, < 90	Easy
≥ 90, ≤ 95	Medium
> 95, < 100	Difficult
≥ 100	Very difficult

Khoisan languages. A second characteristic is the *uneven distribution* of the number of speakers over the different languages and language groups, with Setswana as the dominant language. According to the Ethnologue, it has 1.7 million speakers as a first language, out of the country's total of 2.3 million speakers. The Khoisan languages together have fewer than 100 000 speakers. A third characteristic is the fact that some language (sub-)families show much more *internal similarity* than others. This means that for some language families one language could be developed as an easy-to-learn discerned language to serve all the languages in that family. For other language families, as many as three languages would be necessary.

In order to convey what this means, Table 2 gives the ASJP distance scores for the Narrow Bantu languages spoken in Botswana and English. Table 3 shows the Khoisan languages plus Setswana and English.

Table 2 shows that all of the Narrow Bantu languages spoken in Botswana are easy (though not very easy) to learn for speakers of all of the other languages in that family – and much easier than English. This means in fact that any one of these languages (with Setswana as the obvious candidate) could serve as the *designed* language for use in higher education for speakers of these languages, although it would still take a conscious effort to teach that designed language in schools. Setswana would be a solution for around 97% of all Botswanans, a percentage that is in fact similar to that of Tanzania, where Kiswahili is easy to learn for more than 98% of all Tanzanians. This is in stark contrast with the situation of the Khoisan languages, as Table 3 shows.

In contrast to the Bantu languages, the Khoisan languages are *not* mutually easy to learn. They belong to three different subfamilies that are quite distinct from one another. Note that the largest of the Khoisan languages spoken in Botswana, Haikom (one of the Khoe-Kwadi languages), is not in the ASJP database.

What this means is that to serve all speakers of the Khoisan languages with an 'easy' designed language, as many as three designed languages would be needed, e.g. one from the Tuu family, one from the Kx'a family and one from the Khoe-Kwadi family. However, it should be noted that we are dealing with very small linguistic communities here. In Botswana and Namibia, there are only around 2 500 speakers of Tuu languages. For the Kx'a family, only the various varieties of Kung remain and they form an easy combination with around 15 000 speakers. The largest Khoisan language family is Khoe-Kwadi. The largest of the discerned languages in this group is Khoekhoegowab, also known as Nama. It has around 200 000 speakers. It is easy for speakers of all other Khoe-Kwadi languages and is used as a medium of instruction in primary schools in Namibia in the first three years and taught as a subject in later years.¹² In Botswana, there are around 45 000 speakers of Khoe-Kwadi languages (but almost none who speak Khoekhoegowab).

Botswana does not follow the example of Namibia. None of the Khoisan languages are used in education. All children are confronted with English and Setswana from day one. Mokibelo (2010) shows the difficulties related to this, leading especially to systematic underperformance in English. She points to a specific issue – also discussed by Chaudenson (2006) in relation to French teaching – that speakers of Khoisan languages typically have difficulties in learning English that are different

Table 2: Narrow Bantu languages of Botswana in the ASJP database

2 SYNONYMS, AT LEAST 28 WORDS, DATE > 1700								
LOANWORDS EXCLUDED								
LDND	DCIRI	DIRIK	KALAN	KALAN	QHALA	SHIYE	TSWAN	ENGLI
DCIRIKU	0							
DIRIKU	51	0						
KALANGA	78	81	0					
KALANGA_2	77	77	35	0				
QHALAXARZI	88	84	83	81	0			
SHIYEYI	72	65	72	69	76	0		
TSWANA	90	88	85	85	67	80	0	
ENGLISH	101	101	97	99	100	96	99	0

Table 3: Khoisan languages spoken in Botswana

2 SYNONYMS, AT LEAST 28 WORDS, DATE > 1700																		
LOANWORDS EXCLUDED																		
LDND	AUNI	MASAR	NU_EN	XOON	XOON_	XOON_	GW	GXANA	KHOEK	MASAR	NARO	NARON	HOAN_	HOAN	JUHOA	KAUEN	TSWAN	ENGLI
AUNI	0																	
MASARWA_KAKIA	77	0																
NU_EN	71	51	0															
XOON	95	80	75	0														
XOON_MASARWA	94	56	69	61	0													
XOON_NUEN	87	66	48	55	46	0												
GW	100	96	94	94	97	96	0											
GXANA	99	94	93	92	96	94	12	0										
KHOEKHOEGOWAB	93	94	98	95	95	95	84	83	0									
MASARWA_TATI	101	92	97	98	94	96	77	75	91	0								
NARO	96	97	97	94	98	95	65	64	76	80								
NARON	96	91	92	97	95	92	77	76	84	81	66	0						
HOAN_HUC	103	102	104	104	107	105	99	99	104	101	98	101	0					
HOAN	102	99	102	102	104	102	99	99	99	99	100	100	53	0				
JUHOAN	99	97	96	98	100	94	96	95	97	96	97	98	97	96	0			
KAUEN	96	89	85	98	97	95	98	98	98	97	94	91	97	92	80	0		
TSWANA	100	103	101	103	101	102	98	98	98	99	97	99	99	102	100	101	0	
ENGLISH	99	97	100	99	98	99	101	101	98	99	102	100	100	102	99	100	99	0
LDND	AUNI	MASAR	NU_EN	XOON	XOON_	XOON_	GW	GXANA	KHOEK	MASAR	NARO	NARON	HOAN_	HOAN	JUHOA	KAUEN	TSWAN	ENGLI

from those experienced by speakers of Bantu languages. English is roughly equally difficult for speakers of either a Bantu or of a Khoisan language. However, because the L1 is different, the type of problems experienced by learners are different. If the curriculum is taught using textbooks geared towards Setswana speakers, and perhaps by teachers who are themselves Setswana speakers, this will put Khoisan speakers at a disadvantage that they will find difficult to overcome. This disadvantage is in addition to the disadvantage caused by cultural differences and socio-economic inequality discussed by Molosiwa and Bokhutso (2016).¹³ Mokibelo (2016) {Not in reference list} compares the situation of San and Zezuru (Shona) speakers with mainstream Setswana-speaking children. She finds that both groups are disadvantaged, but tends to group them together, even though the Shona-Setswana language pair is much easier than any of the Khoisan-Setswana language pairs.

A related issue has to do with the appropriateness of the school system itself. Many of the Khoisan speakers still have a nomadic or semi-nomadic lifestyle that is adapted to the arid conditions of the Kalahari Desert.¹⁴ Children are therefore often sent to hostels in towns or cities and separated from their families in order to attend class. This system has the double effect of causing trauma in children and of alienating them from their roots. This means those children who are both intelligent and strong of character – those children who potentially could be most valuable to their communities – are removed, thereby intellectually impoverishing their communities at a time when, due to climate change, increasing demands are made on their resilience and adaptability. This type of problem has been pointed out in connection to pastoralists in other areas and has led, for example, to the experiment with pastoralist field schools in East Africa.¹⁵

The ASJP database has been used to estimate the evolution over time of human languages.¹⁶ According to Holman et al. (2011), the Khoisan languages may have the oldest roots in the world, thereby representing a unique human heritage. Preserving and promoting this heritage in some way could rightfully be portrayed as a matter of national pride for Botswana. Using some or all of these languages in education would be a way of doing so that would also provide a service to the speakers of these languages, especially if it is done in a way that supports sustainable livelihoods. The ASJP database suggests though that these languages cannot be lumped together – developing one Khoisan language as the designed language would not offer an equitable solution for the speakers of languages in the other language families. Using at least three Khoisan languages for the first years of primary education would probably help to increase the achievement of Khoisan speakers.

For secondary and higher education, a different solution may be necessary. We return to that in the next section. So far, we have shown that

- a) a gradual transition to using indigenous languages in higher education more would be beneficial today and will become unavoidable in future;
- b) for the Bantu languages spoken in Botswana, the most logical choice would be to transition to Setswana, even though this would require more effort in teaching the language, especially for those for whom Setswana is not the first language. This could adequately serve more than 95% of all Motswana; and
- c) the Khoisan languages, representing a unique cultural and linguistic heritage, will require a different solution. The model suggests three languages would be needed, although the low number of speakers make the practicality of such a solution questionable.

What would it take in practice to make a start with such a transition? That is what we will briefly examine in the next section.

How could a transition be made?

The comparison with educational systems in the Global North, especially Estonia, reveals that no amount of increased investment in teaching English will lead to a situation that is sustainable in the long run. Even if Botswana were to reach the level of the most advanced countries in the world, it would still be unable to give all of its students the required level of English. But there is another point that deserves to be made here. A focus on tertiary education alone essentially follows the colonial model. In the colonial model, the need for educated local cadres was very limited. Education was geared towards selecting those with the linguistic and other aptitudes necessary to fill those needs. The fact that others who entered education but dropped out at some point did not learn very much did not matter. Expenditure on education was very limited and some level of dropouts could easily be absorbed as 'collateral damage' (although it would have felt differently for the dropouts themselves).

In a decolonial model, education is extended to a much larger section of the population. In order to meet development goals, *all* education that is given should be relevant for the students – the idea of people dropping out of the system with little or no useful knowledge or skills is wasteful from the point of view of the individual and his/her family, from the point of view of educational resources not wisely spent and from the point of view of lost economic opportunities. Therefore, even though it is not the main focus of our article, we do want to make a little excursion into another area of education that is set to expand, namely the area of technical and vocational education and training (TVET).

We would like to point out that it is likely that in the area of TVET, the problems associated with the current language policy will be even greater than those in the tertiary education sector. This is because, on average, students who choose a career in this area will be less linguistically gifted than those that choose other routes. We do not know what level of English would be required of students who follow TVET education, but we think it is likely that not all students will have such a level. Therefore, expanding TVET using English as a medium of instruction will also mean expanding the dropout rate, teacher, student and parent frustration, and wastage of scarce resources. In practice, these problems can be mitigated if teachers and students use Setswana. This practice is known as 'translanguaging' (see Yevudey and Agbozo 2019). However, as Bagwasi (2017: 208) points out, 'while translanguaging and other multilingual approaches may be useful in many informal contexts and in the classroom, they are not acceptable in many formal contexts'. For education, if the language of examination remains English, this will offer at best only limited scope for improvement. An immediately useful step to take would be to follow the Maltese example. Malta's College of Arts, Science and Technology teaches partly in Maltese and has the possibility to allow students to present assessment work in Maltese.¹⁷ Much more could be said about this issue, but in this article we would like to focus instead on how to start preparing for the future of higher education – because it could be a bumpy process, made easier if ample time is taken.

The *first step* to take, in our view, would be to develop a policy for the gradual introduction of Setswana as designed language for use in secondary and higher education and to think through

what this means for teaching Setswana as a subject, especially for speakers whose mother tongue is one of the other Narrow Bantu languages. There are two further important points to make in this connection.

The first is that, of course, Setswana is not only spoken in Botswana. It is also a language of South Africa and it is closely related to the discerned Sotho languages spoken in South Africa and Lesotho. The position of Setswana as a designed language that can be used in many domains would be greatly strengthened if designed language development were undertaken together with counterparts in South Africa and Lesotho.¹⁸

The second point to make is that the design process itself could lead to simplification if that makes learning easier. Thus, one of the greatest successes of designed languages in the world today is Indonesian (Bahasa Indonesia), a designed language based on but not identical to Malay. It is currently used as a first or second language by over 150 million people. In Bahasa, to give an example, the plural is not marked – to make a word plural, it is repeated. In general, Bahasa was consciously formed to make it as easy as possible to learn for as many people as possible, making it different from related but much more complex languages such as Javanese.

A *second step* would be to engage with leaders of the Khoisan communities, both in Botswana and in South Africa and Namibia about the best way forward for a language-in-education policy for their communities. One could imagine that for primary education, at least the Namibian example would also be followed in Botswana. At the tertiary level, it might be possible to establish an institution that serves the Khoisan-speaking communities in the three countries where the languages are spoken, perhaps in a distributed way. Examples include IRCAM,¹⁹ set up to promote the Amazigh (Berber) culture and languages in Morocco, or the Māori tertiary education institution set up in New Zealand, the Te Wānanga o Aotearoa²⁰ (note that there are around 50 000 people who feel they speak Māori ‘well’ or ‘very well’).

It is an open question *who* should do this, because Botswana at present lacks an appropriate body for this. Chebanne and Kewagamang (2020) have called for the establishment of a language affairs board, modelled on South Africa’s PANSALB. The University of Botswana would probably be best placed to bring together relevant experts in the field and to start the process of establishing such a board, provided it is accorded sufficient resources to take on such a task.

The next step would be to prepare for a transition that should start with educating sufficient numbers of interpreters and teachers, and to prepare teaching materials, etc. before a transition can effectively take place. The better this is understood and planned, the easier it will become to make the transition. A lot will be needed and many questions will need to be answered. Would it be better, for example, to start with using Setswana as a medium of instruction in all of primary education and then to introduce it in secondary and higher education only later? Or would it be better to introduce it, for example, first in the TVET sector? Is it better to gradually introduce Setswana for certain professions (like primary schoolteachers) and to leave others to a (much) later time or never? What will be needed to teach indigenous languages as a second or third language, for example teaching Haikom or Zezuru to Setswana speakers? Which tertiary education institutions would start to use which language as a medium of instruction, with which courses and when? All of these are difficult questions to answer – but it is not impossible if enough time is taken for a proper preparation. The reward in terms of a more efficient and vibrant education system, greater innovation and greater achievement and, in general, a wealthier Botswana able to develop in a culturally appropriate and sustainable manner will be worth it.

Conclusions

In this article, we have argued that reaching Botswana’s Vision 2036 requires education levels comparable to those currently available in the Global North. We hope that the new line of reasoning presented here, one that is essentially rooted in the economic targets the country has set itself, together with the scientific principles we propose and the practical applicability that we have sketched out will help to generate the needed political momentum to start planning for the transition that will be necessary. In order to achieve the level of participation in education that Botswana will need as a developed country, it will have to follow the medium-of-instruction path that has universally been

chosen in the Global North. In other words, it will have to make use of indigenous languages as media of instruction, possibly alongside English, at least in large parts of its educational system.

We have shown that in order to achieve a transition towards indigenous languages, it will not be necessary to use all languages discerned in the country. We have used the concept of *discerned* versus *designed* languages to demonstrate that one formalised (or designed) language can in fact serve several discerned languages for educational and other purposes. We have proposed five principles that in our view should govern a choice of which designed languages to develop for Botswana. These deserve to be repeated:

- 1) Develop a *limited number* of designed languages for education;
- 2) Choose designed languages in such a way that they are *easy to learn* for as many speakers of discerned languages as possible;
- 3) Strive for *inclusivity*. Choose designed languages in such a way that all have to exert a relatively low but relatively equal effort to learn them;
- 4) Make use of *existing bilingualism* as a resource; and
- 5) Build incentives for *linguistic collaboration*.

We have used the benchmarked net edit distance scores as provided by the Automated Similarity Judgement Programme to show that, using these principles, Setswana would be a logical choice for most Motswana, with the exception of the Khoisan-speaking peoples. We have therefore called for the development of two separate language policies, one for speakers of Narrow Bantu languages, another for speakers of Khoisan languages. For both, we have pointed to the importance of collaboration with neighbouring countries. Ultimately, drafts of such policies should be discussed in wider society, leading to an ultimate decision by parliament or similar legislative body.

We have shown how under the current educational setup a transition to indigenous languages is a pressing issue, in the area of TVET as well as in tertiary education. Given both the magnitude and the social importance of the transition that is likely to become unavoidable, preparations should start now. Any other course of action is likely to lead to increased disenchantment among students and their parents, to continued frustration and wastage of resources and can only bring increased social unrest to the country. Policy makers should feel duty bound to their country to ensure that the transition to indigenous languages is implemented in a well-planned, orderly and scientifically sound manner.

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Endnotes

- 1 <https://vision2036.org.bw/about-botswana-vision-2036>
- 2 <https://www.ethnologue.com/country/BW>
- 3 <https://www.ethnologue.com/country/DE>
- 4 <https://literacytrust.org.uk/parents-and-families/adult-literacy/>
- 5 <https://www.coe.int/en/web/common-european-framework-reference-languages/home>
- 6 <http://www.students.uct.ac.za/students/applications/admission-requirements/language> gives the requirement as an IELTS score of at least 7.0, which corresponds to the C1 level as outlined at <https://www.ielts.org/ielts-for-organisations/common-european-framework>.
- 7 The survey material is still available online via <http://www.surveylang.org/>. The survey has not been repeated.
- 8 The Ethnologue puts the total number of L1 speakers of the two discerned Estonian-like languages at approximately 1.25 million. <https://www.ethnologue-com/language/est>
- 9 <http://data.uis.unesco.org/>
- 10 This principle is related to the second principle of what a multicultural state should look like, as

- described by Kymlicka (2003: 150). This entails the requirement that all citizens should have equal access to state institutions, without linguistic barriers imposed on some, but not on others: 'The state accepts an obligation to accord the history, language and culture of non-dominant groups the same recognition and accommodation that is accorded to the dominant group'.
- 11 <https://asjp.cld.org/>. For more information, also look at their Wiki page: https://en.wikipedia.org/wiki/Automated_Similarity_Judgment_Program.
 - 12 http://www.nied.edu.na/assets/documents/05Policies/NationalCurriculumGuide/National_Curriculum_Basic_Education_2016.pdf
 - 13 See Chebanne and Dlali (2019) for another searing critique of the current situation.
 - 14 See Van Pinxteren et al. (2021) for a more extensive discussion on educational issues in dryland areas in several parts of the world.
 - 15 <http://www.fao.org/capacity-development/news-list/detail/en/c/883112/>
 - 16 https://en.wikipedia.org/wiki/Automated_Similarity_Judgment_Program
 - 17 https://www.mcast.edu.mt/wp-content/uploads/DOC_003_CORP_REV_F_-PROGRAMME-REGULATIONS-MQF-LEVELS-1-3-2.pdf
 - 18 It might be possible to borrow a leaf from the Dutch 'Taalunie', in which Belgium, the Netherlands and Suriname participate, and which aims at developing and promoting the Dutch language. <https://taalunie.org/informatie/112/taalunie-union-for-the-dutch-language>
 - 19 <https://www.ircam.ma/?q=fr>. IRCAM has recently been brought under the umbrella of the National Council of Moroccan Languages and Culture (CNLCM), together with the Mohammed VI Arab Language Academy: <https://aujourd'hui.ma/culture/conseil-national-des-langues-et-de-la-culture-marocaine-cest-fait-les-attributions-et-missions-publiees-au-bo>
 - 20 <https://www.twoa.ac.nz/te-whare/who-we-are>

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