THE PRACTICAL IMPLICATIONS FOR WRITERS, PUBLISHERS, AND POLICY-MAKERS OF THE VARIOUS POLICY OPTIONS ON THE MEDIUM OF INSTRUCTION IN FUTURE SOUTH AFRICAN SCHOOLS

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As an educationist and a publisher intent on producing good quality books, I've suffered considerably over the last 14 years from last-minute implementations of policy by education authorities - or last-minute reversals of policies which are found to be uneconomic - which militate against the publishing of good material. It was the recognition of the equivalent of the San Andreas Fault in the South African education system and impending disaster (we know it will happen; we're just not sure when) which led me to begin working out in advance what the practical implications of the various language policies would be, how we could publish books which support these policies, and what these books could look like.

It led, inevitably, to considerations that go beyond language policy options, and broadened to include the sometimes conflicting interests of curriculum planners, subject specialists, the "financiers" of education, and the politicians, as well as the aspirations and needs of teachers, parents and students.

Much of educational publishing is about what we euphemistically refer to as "creative tensions", the ability to reconcile the irreconcilable being the art of publishing. These tensions are between the conflicting interests of editorial needs (more time to produce fewer books) and of sales needs (more books in less time), of textual literacy (through editing) and of visual literacy (through design), of educational principles and financial feasibility, of education principles and political pragmatism. Good educational publishing and, I submit, good educational policy is about recognising these conflicts and maintaining a

delicate balance which ensures reasonable satisfaction on both sides. Policy decisions cannot and should not be made in isolation and without examining their impact on the adjacent links in the chain. What follows is an attempt to point out the imbalances and to suggest how these could be addressed.

Assumptions

I have assumed in this paper that textbooks will continue to play a central role in the majority of classrooms in South Africa, as they do at present, since the factors which contribute to this situation are not likely to disappear overnight. The factors are well documented: teachers' lack of confidence in their own abilities (for a variety of reasons, both internal and external), the perceived authority of print, the tyranny of the syllabus, the burden of preparation and work (which make it difficult to be creating innovative material every day for every class), the lack of facilities for reproduction of worksheets, etc., and the fact that economies of scale often make textbooks as a whole cheaper than self-produced material.

Furthermore, when evaluated on the basis of "rand for impact", textbooks are the most cost-effective form of intervention in the classroom when compared to investments in areas such as the provision of physical facilities and teacher-training. (The latter is the most effective and long-lasting form of intervention, but also the most expensive.)

Politically, they have the additional attraction of being relatively easily and quickly "implemented" as a form of educational intervention. (For example, the decision to provide double the number of textbooks to schools involves, in simple terms, an order, supply, and a cheque - all of which can be done in two months. Compare this to the length of time and the complexity of the process of building new schools, and the organisation and labour required for teacher-training.) To both

governments and aid agencies wishing to satisfy their respective constituencies, textbooks are visible, tangible and easily "measurable" - desirable factors if one is evaluating or implementing short-term plans over a period of one to five years. (This is often the length of time a government has for reform before the next elections, and most aid agencies understandably will not commit themselves beyond a five-year time frame for specific projects.)

Underpinning all of the above is the restricting factor of cost. While in an ideal world, there would be no limit on the cost of educational materials used in the classroom, in reality there have been, and are, severe constraints on the money available for expenditure on books in South African classrooms. Given the backlogs in educational expenditure, the population growth, and the need to draw into school through compulsory education the estimated 15% - 20% of school-going children who are not at school, it is unlikely that the amount of money available for expenditure on education will increase: in fact, the ability to deliver on the above is entirely dependent on positive economic growth.

The overt and covert price ceilings that education departments have historically set for books used in schools have of necessity been the determining factor in the production of those books, and is one of the reasons for the inadequacy of many textbooks. (Another major reason for poor quality is the lack of time given to publishers to produce books for a new syllabus cycle, and the construction of a system which produces serious financial penalties for those publishers who don't have books available for purchase at the start of a syllabus cycle.) In other words, the market, i.e. the education departments, gets what it demands, sets up and accepts.

What follows is a visual representation of the various policy options, together with the implications for writers and publishers. This paper deliberately does not cover the educational, linguistic and political implications of the various policy options, since these have been well documented in the National Education Policy Reports.

Afrikaans

English

siNdebele

sePedi

seSotho

siSwati

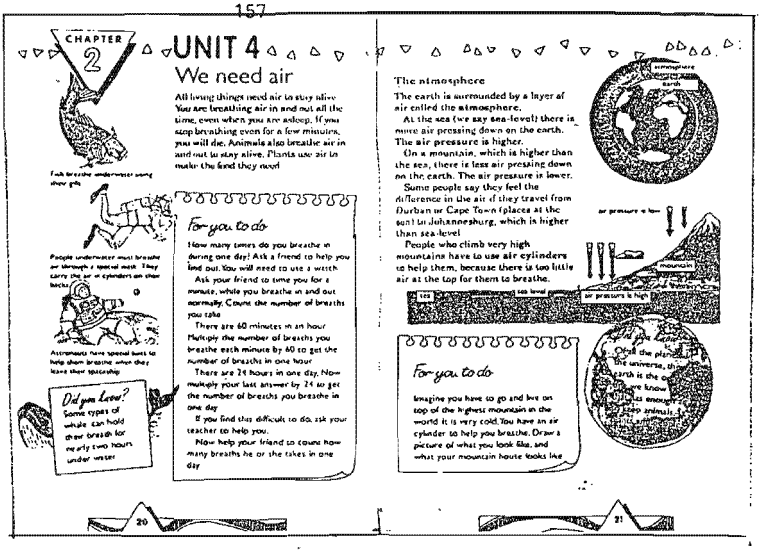
xiTsonga

seTswana

luVenda

siXhosa

siZulu



OPTION 1: Instruction in the home language

Implications for writers and publishers:

* *Of all the options, this one requires the least amount of language support: it means either that books can be shorter and therefore cheaper, or that more space can be devoted to enrichment and support activities, resulting in a book of reasonable length and price.*

* *A Std 2 Science book would consist of 144 pages for 28 teaching weeks:*
  printrun of 5 000 copies = R16,95 retail price
  20 000 copies = R14,00 retail price

* *Eleven books in 11 languages would be required.*

* *The differing lengths of the languages would create editing and design difficulties if each double-page spread is designed as a unit; if the book consists of continuous text, there would be differing extents (and therefore prices) for each book, and each book would have to be designed and laid out individually. (The origination costs would probably have to be spread across all 11 books to ensure that the same price is charged for each, since it would be politically insensitive to have books in some languages costing more than others. The same principle would probably have to be applied when considering the printruns for each language.)*

* *The "core" text, or content, would be written in one language and translated into other languages relatively mechanically, i.e. a subject specialist writes the core text, a translator translates, and an editor edits in the home language to ensure that the text is at the appropriate language level.*

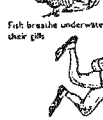
* *Terminology, particularly that relating to classification, Science and Maths, differs from language to language. For example, there is no precise scientific equivalent of the word "reptile" in siZulu or in siXhosa: two bilingual dictionaries in these languages define the word respectively in phrases that mean "an animal that crawls on its stomach" and "a cold-blooded animal that lays eggs".*
  One alternative is to use the English word, and then to give the definition in the African language either in a "dictionary" box or between brackets after the word (but young children don't always understand the use of brackets), i.e. to mix languages. Another alternative is not to use the terminology, but to use the phrase, i.e. the languages remain linguistically "pure".

* *Currently there are books in the African languages up to Std 2 level; new books would have to be developed for all subjects above this level. The numerically smaller languages would not be commercially viable.*

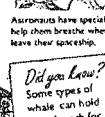
CHAPTER 2

UNIT 4
We need air

All living things need air to stay alive. You are breathing air in and out all the time, even when you are asleep. If you stop breathing even for a few minutes, you will die. Animals also breathe air in and out to stay alive. Plants use air to make the food they need.


Fish breathe underwater using their gills


People underwater must breathe air through a special mask. They carry the air in cylinders on their backs


Astronauts have special suits to help them breathe when they leave their spaceship.

Did you know?
Some types of whale can hold their breath for nearly two hours under water.

For you to do

How many times do you breathe in during one day? Ask a friend to help you find out. You will need to use a watch.

Ask your friend to time you for a minute, while you breathe in and out normally. Count the number of breaths you take.

There are 60 minutes in an hour. Multiply the number of breaths you breathe each minute by 60 to get the number of breaths in one hour.

There are 24 hours in one day. Now multiply your last answer by 24 to get the number of breaths you breathe in one day.

If you find this difficult to do, ask your teacher to help you.

Now help your friend to count how many breaths he or she takes in one day.

The atmosphere

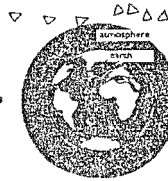
The earth is surrounded by a layer of air called the atmosphere.

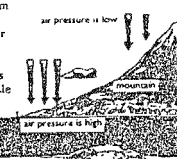
At the sea (we say sea-level) there is more air pressing down on the earth. The air pressure is higher.

On a mountain, which is higher than the sea, there is less air pressing down on the earth. The air pressure is lower.

Some people say they feel the difference in the air if they travel from Durban or Cape Town (places at the sea) to Johannesburg, which is higher than sea-level.

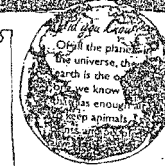
People who climb very high mountains have to use air cylinders to help them, because there is too little air at the top for them to breathe.





For you to do

Imagine you have to go and live on top of the highest mountain in the world. It is very cold. You have an air cylinder to help you breathe. Draw a picture of what you look like, and what your mountain house looks like.



English

(Unproofread example)

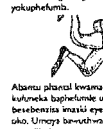
ISAHLUKO 2

IYUNITHI
Umoya uyimfuneko

Umoya uyimfuneko kuzo zonke izinto eziphilayo. Lonke izeaha uphefumelela umoya ngaphandle nangaphakathi, nokuba sewulele. Ukuba uthi uyeke ukuphefumla, nokuba yimzuzwana nje embalwa, uya kufa. Nezilwanyana ziphefumla umoya ukuze zihlale ziphila. Izityalo nazo ziseben zisa umoya ukwenza ukutya okuyimfuneko kuzo.


Iindlanzi ziphefumla phantsi kwomanzi ngemingxuma yazo yokuphefumla.


Abantu phantsi kwamanzi kufuneka baphefumle umoya besebenzisa imaski eyenzelwe oko. Umoya bawuthwala emgolo ngesilinda.


Obesomajukujuku benezinaliso zabo ezibonceda ukuba bakwazi ukuphefumla xa bengekho kwisiphekepheke sabo

Ubusazi?
Kukho udidi lweminenga elinako ukubamba umoya phantsi kwe ezimbini phantsi kwamanzi.

Omawakenze

Xa ucinga uphefumlela ngaphakathi amaxesha amangaphi ngemini? Cela umhlobo ukuba akuncede ukufumanisa oku. Kuya kufuneka usebenzise lwotshi.

Cela umhlobo wakho ukuba akujonge umzuzu ube mnye, njengoko uphefumlela ngaphandle nangaphakathi njengesiqhelo. Bala ukuba utsale umoya kangaphi na. Iingama-60 imizuzu kwiyure enye. Phinda- phinda inani ophume nalo ngama-60, ukuze ufumanise ukuba uphefumla kangaphi na ngeyure.

Zinga-24 iiyure ngemini. Ngoku ke phinda-phinda isiphumo sakho sokugqibela ngama-24 ukuze ufumanise ukuba uphefumla kangaphi na ngemini enye.

Ukuba ufumanise kunzima ukwenza oku, cela uti tshala wakho akuncede. Ngoku nceda umhlobo wakho ukuba zbale ukuba yena uphefumla kangaphi na ngemini.

YESI-4

I-atmosfera

Umhlaba ujikelezwe ngumoya obizwa **ngokuba yi-atmosfera.**

Elwandle (sithi umgangatho wowandle) mninzi umoya oxinzelela kakhulu umhlaba.

Uxinzelelo lomhlaba apha luphezulu. Kwintaba ephezulwana kunolwandle, awukho mninzi kangako umoya oxinzelela umhlaba.

Uxinzelelo lomhlaba apha luphantsi. Abanye abantu bathi bayawuva umahluko womoya xa besuka eThekwini okanye eKapa (ùndawo ezingaselwandle) besiya eThwathwini, yona ephezulu kunomgangatho wolwandle.

Abantu abenyuka iintaba eziphakame kakhulu kufuneka besebenzise iisilinda

zomoya ukuze zibancende, kuba mncinci kakhulu umoya wokuba haphefumle encochoyini yentaba.

Ubusazi?
Kuzo zonke iiplanethi ehlabathini liphela, ngokwazi kwethu kusemhlabeni kuphela, apho kukho umoya owaneleyo ukugcina izidwangyana, izityalo kunye nabantu bephila.

Omawakenze

Khawuqikelele ukuba mhlawumbi kufuneka ukuba uye kuhlala encochoyini yeyona ntaba iphakamileyo emhlabeni. Kuyabanda kakhulu. Unesilinda yomoya eya kukunceda ukuba uphefumle. Zoba umfanekiso obonisa indlela ongakhangeleka ngayo, nokuba inganjani na indlu yakho entabeni.

XHOSA

(Unproofread example)

Afrikaans

English

siNdebele

seSotho

siSwati

xiTsonga

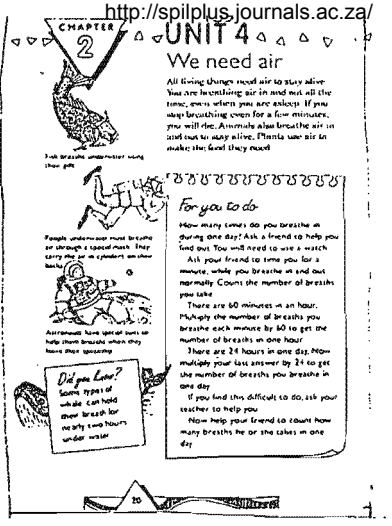
seTswana

tshiVenda

siXhosa

siZulu

Rough example - not accurate.



CHAPTER 2

UNIT 4

We need air

All living things need air to stay alive. You are breathing air in and out all the time, even when you are asleep. If you stop breathing even for a few minutes, you will die. Animals also breathe air in and out to stay alive. Plants use air to make the food they need.

Fish breathe underwater using their gills.

People underwater must breathe air through a special mask. They carry the air in cylinders on their backs.

Astronauts have special suits to help them breathe when they leave their spaceship.

Did you know?

Some types of whale can hold their breath for nearly two hours under water.

For you to do

How many times do you breathe in during one day? Ask a friend to help you find out. You will need to use a watch.

Ask your friend to time you for a minute, while you breathe in and out normally. Count the number of breaths you take.

There are 60 minutes in an hour. Multiply the number of breaths you breathe each minute by 60 to get the number of breaths in one hour.

There are 24 hours in one day. Now multiply your last answer by 24 to get the number of breaths you breathe in one day.

If you find this difficult to do, ask your teacher to help you.

Now help your friend to count how many breaths he or she takes in one day.

10

Test your language!
Fill in the missing words:
All things that ___ must ___ air to stay alive. You breathe ___ in and out all the time, even when you are ___ing.

Take a breath!
Breathe in!
How long can you hold your breath?

ROUGH EXAMPLE

Go to sleep!
All right, I'll go to sleep.
Are you asleep?
Yes, I'm asleep. I'm sleeping.
Good night!

OPTION 2: *Instruction is wholly or partly through the medium of another language*

2.1 The "straight-for-English" option

Implications for writers and publishers:

- *Of all the options, this one requires the most language support. Either "content" would need to be halved in order to provide adequate language support, or the length of the book would need to be doubled to ensure adequate language support. The former has major curriculum implications; the latter financial implications.*

- *A Std 2 Science book would consist of 144 pages for 28 teaching weeks:*
  printrun of 5 000 copies = R16,95 retail price
  20 000 copies = R14,00 retail price
  A book containing identical content but providing thorough language support would consist of 288 pages (see rough example above):
  printrun of 5 000 copies = R26,58 retail price
  20 000 copies = R21,90 retail price

- *1 book in English for English-speakers would be required, i.e. for a level of greater competence in English;*
  and 1 book in English for second-language speakers would be required, i.e. all content and language support is in English
  OR 10 books in 10 African languages would be required, with language support in each home language.

- *The "core" text, or content, would be written in English (if this is the target language) by a subject specialist and edited by an applied linguist to ensure the language level was appropriate. Material for the language support section would need to be specific to each language and therefore be original writing: it would need to be written by applied linguists in the various African languages.*

- *There are currently no suitable books in the "content" subjects catering for the "straight-for-English" option, nor do any of the present syllabuses provide sufficient English immersion and support to ensure that learning of the "content" subjects takes place in optimal conditions.*

Afrikaans

English

siNdebele

sePedi

seSotho

siSwati

xiTsonga

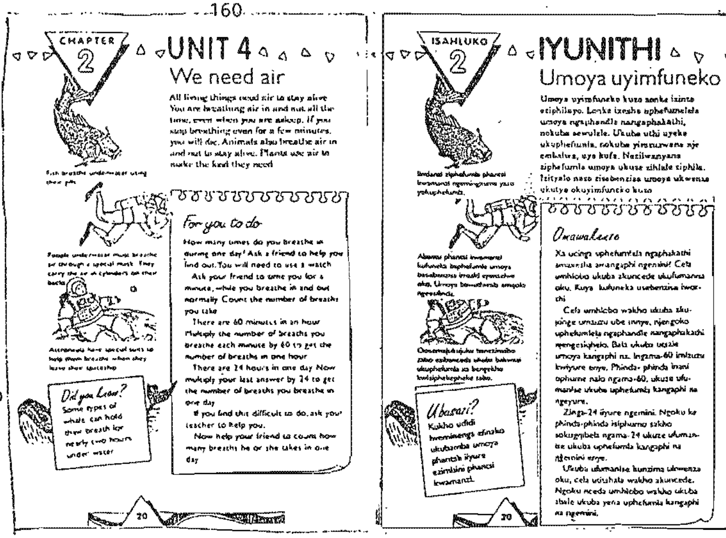
seTswana

luVenda

siXhosa

siZulu

Rough example - not accurate


CHAPTER 2

UNIT 4

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Astronauts have special suits to help them breathe when they leave their spaceship.

Did you know?

Some types of whale can hold their breath for nearly two hours under water

For you to do

How many times do you breathe in during one day? Ask a friend to help you find out. You will need to use a watch

Ask your friend to time you for a minute, while you breathe in and out normally. Count the number of breaths you take

There are 60 minutes in an hour Multiply the number of breaths you breathe each minute by 60 to get the number of breaths in one hour

There are 24 hours in one day Now multiply your last answer by 24 to get the number of breaths you breathe in one day

If you find this difficult to do, ask your teacher to help you.

Now help your friend to count how many breaths he or she takes in one day

20

ISAHLUKO 2

IYUNITHI

Umoya uyimfuneko

Umoya uyimfuneko kuzo zonke izinto eziphilayo. Lonke ixesha uphefumlela umoya ngaphandle nangaphakathi, nokuba uyalala. Ukuba uthi uyeke ukuphefumla, nokuba yimizuzwana nje embalwa, uya kufa. Nezilwanyana ziphefumla umoya ukuze zihlale ziphila. Izityalo nazo zisebenzisa umoya ukwenza ukutya okuyimfuneko kuzo

Umsebenzi?

Ubusazi?

Kukho udidi lwemingeni ezinako ukubamba umoya phantsi iiyure ezimbini phantsi kwamanzi.

Omawaleeto

Xa ucinga uphefumla ngaphakathi amaxesha amangaphi ngemini? Cela umhlobo ukuba akuncede ukufumanisa oku. Kuya kufuneka usebenzise iwotshi

Cela umhlobo wakho ukuba akulinganise umzuzu ube mnye, njengoko uphefumlela ngaphandle nangaphakathi ngendlela eqhelekileyo. Bala ukuba utsala umoya kangaphi na. Ingama-60 imizuzu kwiyure enye. Phinda-phinda inani ophume nalo ngama-60, ukuze ufumanise ukuba uphefumla kangaphi na ngeyure.

Zinga-24 iiyure ngemini. Ngoku ke phinda-phinda isiphumo sakho sokugqibela ngama-24 ukuze ufumanise ukuba uphefumla kangaphi na ngemini enye.

Ukuba ufumanisa kunzima ukwenza oku, cela utitshala wakho akuncede. Ngoku nceda umhlobo wakho ukuba abale ukuba yena uphefumla kangaphi na ngemini.

20

OPTION 2: <u>Instruction is wholly or partly through the medium of another language</u>

2.2 The bilingual parallel-text option

Implications for writers and publishers:

* Each book would contain a full translation of the target language, effectively doubling the extent of the book and increasing the price.

* A Std 2 Science book providing a full translation of the same content would consist of 288 pages:
  printrun of 5 000 copies = R26,58 retail price
  20 000 copies = R21,90 retail price

* 1 book in English for English-speakers would be required, i.e. level of greater competency in English, but would be half the extent and lower in price;
  10 books in English + African languages would be required (assuming that English is the target language of learning!)

* The "core" text, or content, could be written in one language and translated into other languages relatively mechanically, i.e. a subject specialist writes the core text, a translator translates, and an editor edits in the home language to ensure the text is at the appropriate language level.

* Careful attention would need to be given to writing, editing and design to ensure that equivalent pieces of text line up opposite one another, so that the translated text can be found easily. The differing lengths of the languages (sometimes up to 20% longer than English - see rough example above) would create some editing and design difficulties.

* Terminology, particularly that relating to classification, Science and Maths, differs from language to language. For example, there is no precise scientific equivalent of the word "reptile" in siZulu or in siXhosa: two dictionaries define the word respectively as "an animal that crawls on its stomach" and "a cold-blooded animal that lays eggs".
  One alternative is to use the English word, and then to give the definition in the African language (either in a "dictionary" box) or between brackets after the word (but young children don't always understand the use of brackets), i.e. to mix languages. Another alternative is not to use the terminology, but to use the phrase, i.e. the languages remain linguistically "pure".

* No books currently exist in this model, so new books would have to be developed for all subjects at all levels.

Afrikaans

English

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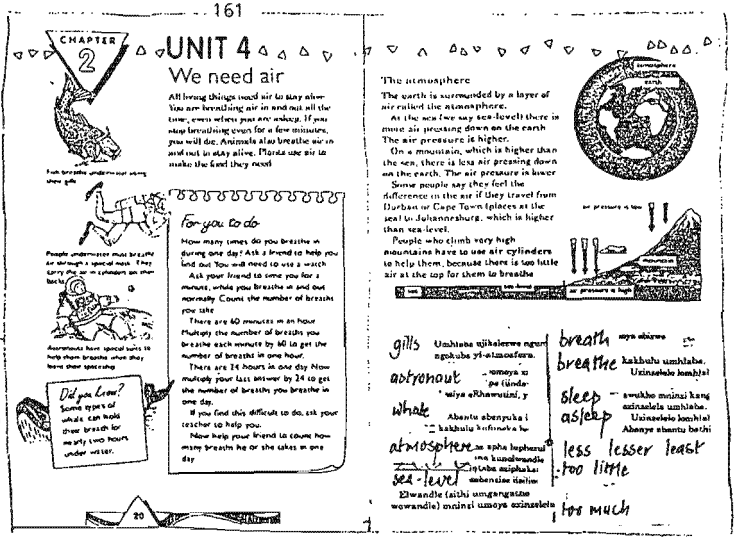
rough example - not accurate



OPTION 2: Instruction is wholly or partly through the medium of another language

2.3 The bilingual supportive-text option

Implications for writers and publishers:

* *Roughly 25% - 30% of each double-page spread would need to contain glosses of terminology/vocabulary in the home language and an amount of language support. This would increase the extent of the book and therefore the price, or the content of the syllabus could be reduced to keep the book at the same length.*

* *A Std 2 Science book of 144 pages (28 teaching weeks):*
  printrun of 5 000 copies = R16,95 retail price
  20 000 copies = R14,00 retail price
  OR if the book is lengthened to 216 pages:
  printrun of 5 000 copies = R23,37 retail price
  20 000 copies = R17,68 retail price

* *1 book in English for English-speakers would be required, i.e. level of greater competency in English, but would be half the extent and lower in price;*
  10 books in English + African languages would be required (assuming that English is the target language of learning!)
  OR 3 books could be produced: one for Nguni languages, one for Sotho and one for the rest, i.e. only three editions would be required, and the language support would take up half the book.

* *The "core" text, or content, would be written in English (if this is the target language) by a subject specialist and edited by an applied linguist to ensure the language level was appropriate. Material for the language support section would need to be specific to each language and therefore be original writing: it would need to be written by applied linguists in the various African languages.*

* *No books currently exist in this model, so new books would have to be developed for all subjects at all levels. Some books have experimented with multi-language glosses at the back of the book, which presupposes dictionary or indexing skills having been taught to the children.*

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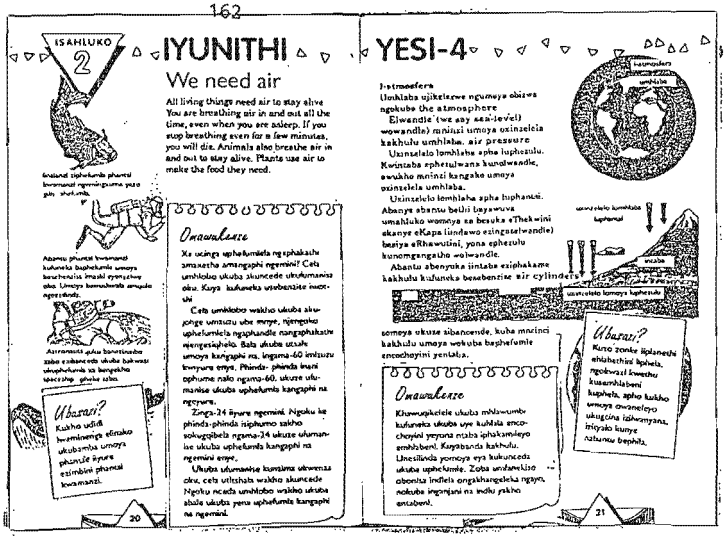
(rough example - not accurate)



OPTION 2: Instruction is wholly or partly through the medium of another language

2.4 *The bilingual integrated-text option (gradual transfer)*

Implications for writers and publishers:

* *The languages are mixed, with terminology, paragraphs or increasing amounts of text appearing in the target language. All explanations and linking text would be in the home language.*
  In this option the amount of content would remain much the same as in Option 1 (home language instruction), but the ratio of text in the home language to text in the target language would decrease with each year of school.

* *A Std 2 Science book would consist of 144 pages (28 teaching weeks):*
  printrun of 5 000 copies = R16,95 retail price
  20 000 copies = R14,00 retail price

* *1 book in English for English-speakers would be required, i.e. level of greater competency in English, but would be half the extent and lower in price;*
  10 books in English + African languages would be required (assuming that English is the target language of learning)

* *From a writing and a linguistics point of view, this is the most difficult material to write, since it would require either an applied linguist/writer with equal competence in both languages or close collaboration between a subject specialist, an applied linguist in the home language and an applied linguist in the target language. Different decisions would need to be made in each of the languages about which terminology to translate, and which text to have in the target language.*

* *No books currently exist in this model, so new books would have to be developed for all subjects at all levels.*

The range and permutations of materials

If all the policy options for the medium of instruction listed above are used in South Africa, then the following range of permutations at a single school level will be as follows:

For example, in Science for Std 2, one will have the following permutations across the 11 languages:

Option 1	(home language)	= 11 books
Option 2.1	(straight-for-English)	= 1 for English-speakers
		10 for non-English speakers
Option 2.2	(bilingual parallel text)	= 10 for non-English speakers
Option 2.3	(bilingual supportive text)	= 10 for non-English speakers
Option 2.4	(bilingual integrated text)	= 10 for non-English speakers
	Total	= 52 editions

Note: this assumes that there will be standard policies throughout the country on the timing of the transfer from the home language to the target language (for example, if all agree that at Std 1 level 25% of teaching of content subjects will be in the target language, at Std 2 level 50%, and so on), or on the subjects which are taught in the target language (for example, Maths and Science in the target language at Std 1 level, History at Std 5). Any variations will increase the number of permutations accordingly.

Applying this same range of editions to a minimum number of other content subjects at this level for which books are usually provided:

Mathematics
Science (or General Science)
History
Geography
Health Education

results in a total of 260 editions being available at Std 2 level in the content subjects. (See Appendix II for the list of subjects taught in Bophuthatswana schools.) Added to this should be 11 books teaching the

home language, and 11 books teaching another language as a second language, resulting in 282 editions at Std 2 level alone.

Clearly this is a supplier's nightmare, since publishers will have to find a way to indicate which edition is which, train sales staff to know the difference and offer advice accordingly, and teachers will need to know - and order correctly - the edition they wish to use.

Furthermore, as the simple costings indicate, the longer the printrun, the lower the unit cost and therefore the price of the book. Too many permutations will result in relatively short printruns at higher prices. What this situation highlights is one of the classic "creative tensions" in educational publishing - in this case, between the democratic right of choice and the need to reduce the costs of education.

While it may seem tempting to embark on centralised decision-making and state publishing as a means of ensuring uniformity and low cost to the state, in the long run this would be counterproductive to the very conditions of literacy and political stability the country requires. Firstly, the educational, linguistic and political needs of the population are too diverse to be catered for through uniformity, which, if it is imposed, will not only be contravening the principle of democratic right of choice, but will also be setting the stage for the disadvantaging of one or more groups, with consequent political reaction.

Secondly, since educational publishing forms an estimated 75% of publishing revenue in South Africa - the income from which supports ventures into other areas of publishing - state publishing, or any version of it such as tendering, would effectively destroy the publishing industry (and its related industry of book retailers) by establishing preferential relationships with a few. Monopolies are ultimately not competitive on quality or price, although initially the economies of scale which they offer appear attractive. Skills and capital would disappear, and the costs of entry for new publishers would be too great at a later stage, when a

diverse and flourishing industry would be required to supply books to satisfy the range of reading needs (for information, education, entertainment) generated by a book-hungry population.

Thirdly, high financial stakes go hand in hand with high levels of corruption.

In practice, the publishing industry will not be able to deliver the full range of 282 editions in the time available, and this is likely to limit the range of options for those not wishing to make their own material. (The inability to cater for the full range will occur because some of the options in certain languages are not economically viable, because of the lack of skilled writers, editors and applied linguists in many of the languages, and because of the sheer volume of work required in a limited period of time. To put the size of the publishing industry in perspective: I estimate that it employs 2 000 - 3 000 people [compare this with Pick 'n Pay's 27 000], and that its turnover is somewhere between 7% and 14% of Pick 'n Pay's.)

Provided there is adequate discussion, consultation and education on the implications of the various policy options prior to their being implemented, consensus on language policy is likely to emerge, particularly within each region - and between regions with historically close ties - with the result that the range of editions required will in all likelihood be reduced to a manageable number. In marketing terms, the market will remain a fragmented market, which will continue to support a diverse and lively publishing industry.

The financial implications

As shown earlier, the various linguistic and curriculum policies adopted will have an impact on the length and therefore the price of the books. (A book of 144 pages for 28 teaching weeks provides 4 - 5 pages of material

per week, allowing a number of pages for extra illustrations, the contents page and title page, etc.)

To summarise, using the example of the Std 2 Science book, the retail prices of the books of varying extents would be as follows:

	5 000 copies	20 000 copies
144 pp	R16,95	R14,00
216 pp	R23,37	R17,68
288 pp	R26,58	R21,90

Supplying each of the 944 075 children at Std 2 level with a new book would result in a cost to the state of between R13 217 050 and R25 093 513. (See Appendix II for the numbers of children at school, which do not include those of school-going age who are not at school.)

It follows that the cost of supplying seven new books at Std 2 level, for example, could be between R93 million and R176 million. Since I estimate that the current retail value of the educational book market in South Africa is ± R562 million per annum, changing the curriculum at one school level would cost approximately 16% of the total budget. (The present budget - with no curriculum reform at the moment - is strained under the policy of supplying one book per child per subject per level, with books theoretically being replaced only every 3 - 4 years: it does not include purchase of dictionaries (essential for language acquisition), atlases (essential for geographical skills), supplementary readers (essential for language acquisition), and other supplementary materials.) And it's well known that any new government will be able to deliver on education only if there is the economic growth to sustain its policies on expenditure.

These sorts of financial considerations lead naturally to issues such as the affordability of reform and the pace at which it can be implemented.

Implications for the pace of curriculum reform

In considering the pace of curriculum reform, one is faced yet again with one of the "creative tensions", this time between the interests of politics - which requires visible and rapid reform in the education system - and education - which requires longer leadtimes for thorough and long-lasting reform of the curricula and for the production of quality materials based on those curricula.

Of the two models which follow, the first is based on the present system of curriculum reform, as planned by all the education departments for the past two decades, while the second is my proposal for an alternative.

Some general points about the assumptions I've made:

* For the sake of convenience and simplicity, I have taken liberties with the nomenclature and number of subjects in the school curriculum: technical subjects have been omitted, and certain subjects collapsed into one another, since it is possible that present subject divisions may disappear or be re-drawn, or be named differently.

* While assessing the number of new books and therefore the expenditure required in each year, it's important to remember that existing subjects will have to be catered for it, as will the supply of dictionaries, atlases, readers, and other supplementary material. Top-up orders will also be necessary each year for increasing enrolments in the new syllabuses and the replacement of damaged books.

* I've used the word "book" loosely: at lower primary level the material may consist of worksheets, picture books, wallcharts, etc., but I've assumed that some form of material will be required, even if it's only a comprehensive teacher's guide.

Model 1

This model is based on the present pattern of an eight-year syllabus cycle, where the syllabus for each subject is revised every eight years. (The length of the cycle was premised on the life-cycle of the average textbook, which was expected to last four years, i.e. there would be two major purchases in a cycle, with top-up stock being ordered each year for increased enrolments or replacement of damaged stock.)

Although this model shows an eight-year cycle, most of the implementation would actually have to take place over seven years (1997 - 2003), since this would be the shortest possible timetable for the production of the first new textbooks based on the first new syllabuses. As can be seen from the timetable, there is intense pressure at all stages:

1994	Departments re-organised, decision-makers appointed, syllabus committees established. Syllabus revision complete by December 1994.
1995	Writing (6 months), editing, design, production to page proof stage (6 months) (note: no time for trialling)
1996	Submission and approval, printing (January - June); marketing and promotion to schools (July - September); ordering and supply (October - December 1996)
1997	First new books used in schools in January 1997 based on the first new syllabus.

This model also assumes that the pressure for rewriting of the syllabuses of the "high-profile" subjects such as History and Geography will be so great as to necessitate urgent implementation in 1996.

Model 1

	1996	1997	1998	1999	2000	2001	2002	2003
Home languages (one book per child)								
Afrikaans		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
English		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
siNdebele		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
sePedi		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
seSotho		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
siSwati		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
xiTsonga		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
seTswana		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
luVenda		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
siXhosa		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
siZulu		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
No. of new books		44	44	44				

(Model 1 continued)

	1996	1997	1998	1999	2000	2001	2002	2003
Second language								
Afrikaans		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
English		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
siNdebele		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
sePedi		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
seSotho		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
siSwati		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
xiTsonga		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
seTswana		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
luVenda		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
siXhosa		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
siZulu		Yr1	Yr2	Yr3				
		Yr4	Yr5	Yr6				
		Yr7	Yr8	Yr9				
		Yr10	Yr11	Yr12				
No. of new books		44	44	44				
C/F		88	88	88				

(Model 1 continued)	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Examinable subjects								
Mathematics					*Yr1*	*Yr2*	*Yr3*	
					Yr4	*Yr5*	*Yr6*	
					Yr7	*Yr8*	*Yr9*	
					Yr10	*Yr11*	*Yr12*	
Science					*Yr1*	*Yr2*	*Yr3*	
					Yr4	*Yr5*	*Yr6*	
					Yr7	*Yr8*	*Yr9*	
					Yr10	*Yr11*	*Yr12*	
Biology					*Yr10*	*Yr11*	*Yr12*	
History	*Yr4*	*Yr5*	*Yr6*					
	Yr7	*Yr8*	*Yr9*					
	Yr10	*Yr11*	*Yr12*					
Geography	*Yr4*	*Yr5*	*Yr6*					
	Yr7	*Yr8*	*Yr9*					
	Yr10	*Yr11*	*Yr12*					
Health Education						*Yr4*	*Yr5*	*Yr6*
Handwriting	*Yr1*							
Accounting						*Yr8*	*Yr9*	*Yr10*
							Yr11	*Yr12*
Economics						*Yr8*	*Yr9*	*Yr10*
							Yr11	*Yr12*
Shorthand						*Yr8*	*Yr9*	*Yr10*
							Yr11	*Yr12*
Typing						*Yr8*	*Yr9*	*Yr10*
							Yr11	*Yr12*
Woodwork						*Yr8*	*Yr9*	*Yr10*
							Yr11	*Yr12*
Home Economics						*Yr8*	*Yr9*	*Yr10*
							Yr11	*Yr12*
Biblical Studies						*Yr8*	*Yr9*	*Yr10*
							Yr11	*Yr12*
Art						*Yr8*	*Yr9*	*Yr10*
							Yr11	*Yr12*
Music						*Yr8*	*Yr9*	*Yr10*
							Yr11	*Yr12*
Non-examinable subjects								
Art					*?*			
Music					*?*			
Religion					*?*			
Guidance					*?*			
Physical Education					*?*			
No. of new books	*7*	*6*	*6*	*0*	*9*	*19*	*28*	*19*
TOTAL	*7*	*94*	*94*	*88*	*9*	*19*	*28*	*19*

Model 2

This model assumes that curriculum planning will be more integrated than in the previous model, where subjects are treated disparately, and that the curriculum will be reformed one year at a time, starting with the first year of school and working up. Since the first three years are closely integrated and usually require little in the way of textbooks, it should be possible to implement new syllabuses for this phase in one year. This would allow a ten-year syllabus cycle, with a more even and lower spread of expenditure.

A more realistic period for intensive reform of the curriculum has been anticipated:

1994	Re-organisation of education departments; appointment of decision-makers Start of syllabus reform for lower primary
1995	Completion of syllabus reform by December
1996	Writing (6 months), editing, design, production to page proof stage (6 months)
1997	Trialling
1998	Submission and approval (January - March), corrections / alterations (April), printing (May - June), marketing to schools (July - September), ordering and supply (October - December)
1999	First new books in schools in January 1999 on the first new syllabus.

The year 2000 would see the curriculum for Year 4 being implemented, 2001 Year 5, and so on, until the reform of the school-leaving year in 2008.

Model 2	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Yr1 Yr2 Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12
Home languages										
Afrikaans	x x x	x	x	x	x	x	x	x	x	x
English	x x x	x	x	x	x	x	x	x	x	x
siNdebele	x x x	x	x	x	x	x	x	x	x	x
sePedi	x x x	x	x	x	x	x	x	x	x	x
seSotho	x x x	x	x	x	x	x	x	x	x	x
siSwati	x x x	x	x	x	x	x	x	x	x	x
xiTsonga	x x x	x	x	x	x	x	x	x	x	x
seTswana	x x x	x	x	x	x	x	x	x	x	x
luVenda	x x x	x	x	x	x	x	x	x	x	x
siXhosa	x x x	x	x	x	x	x	x	x	x	x
siZulu	x x x	x	x	x	x	x	x	x	x	x
No. of books	33	11	11	11	11	11	11	11	11	11

(Model 2 continued)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Yr1 Yr2 Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12
Second lang.										
Afrikaans	x x x	x	x	x	x	x	x	x	x	x
English	x x x	x	x	x	x	x	x	x	x	x
siNdebele	x x x	x	x	x	x	x	x	x	x	x
sePedi	x x x	x	x	x	x	x	x	x	x	x
seSotho	x x x	x	x	x	x	x	x	x	x	x
siSwati	x x x	x	x	x	x	x	x	x	x	x
xiTsonga	x x x	x	x	x	x	x	x	x	x	x
seTswana	x x x	x	x	x	x	x	x	x	x	x
luVenda	x x x	x	x	x	x	x	x	x	x	x
siXhosa	x x x	x	x	x	x	x	x	x	x	x
siZulu	x x x	x	x	x	x	x	x	x	x	x
No. of books	33	11	11	11	11	11	11	11	11	11

(Model 2 continued)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Yr1 Yr2 Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12
Exam. subjects										
Mathematics	x x x	x	x	x	x	x	x	x	x	x
Science	-	x	x	x	x	x	x	x	x	x
Biology								x	x	x
History		x	x	x	x	x	x	x	x	x
Geography		x	x	x	x	x	x	x	x	x
Health Education		x	x	x						
Handwriting	x									
Accounting						x	x	x	x	x
Economics						x	x	x	x	x
Shorthand						x	x	x	x	x
Typing						x	x	x	x	x
Woodwork						x	x	x	x	x
Home Economics						x	x	x	x	x
Biblical Studies						x	x	x	x	x
Art						x	x	x	x	x
Music						-	-	-	-	-
TOTAL BOOKS	70	27	27	27	26	34	34	35	35	35

Apart from the assumptions about the timetable, which are variable, the advantages of Model 2 over Model 1 are the following:

* It permits and ensures greater integration of the curriculum, allowing language policy issues to shape the volume and pace of the "content" curriculum; it also allows a skills-based curriculum to be developed and implemented in an integrated way.
* The new book requirements for each year are more evenly spread in terms of expenditure, without the wild fluctuations of Model 1.
* The demands that will be made on a new book submission and approval system are evened out.
* It suggests that teacher-training on new curricula could be more manageable, with, for example, all Std 1/Year 3 teachers being trained in a single year. (Under Model 1, Std 1 teachers would have to be trained in every year when a new subject syllabus for Std 1 was introduced.)

Recommendations

Policy-makers and decision-makers need to make decisions now, about:

* the allocation of resources for and within education (facilities, teacher-training and textbooks), and
* therefore the feasible quality and quantity of reform over a pre-determined period of time,
* whether language policy will drive the curriculum, and how,
* how all this will be integrated with the aspirations and wishes of students, parents and teachers as well as the wider community in a form that is both visible and immediate.

The following steps are recommended:

1 The allocation of resources is established, and the limits of the resources available for new curricula (and therefore new books on those curricula) and for teacher-training (on the evaluation of books as well as on the curricula, but with particular emphasis on the application of the language policies).

2 The model of a 10-year syllabus cycle is adopted, aiming to reform the entire school curriculum over a period of 10 years, starting with the first years of school and working up.

3 Adequate time should be allowed for thorough planning and preparation, aiming therefore to have the first curricula ready for use in schools in 1999: this will allow
   * curriculum planners time to plan thoroughly
   * publishers time to produce and trial good material
   * time to establish a book-evaluation system
   * time to establish how teacher-training on a new curriculum

4 In the short-term, curriculum planners need to tackle the most visible and controversial section of the curriculum first - History. Either abandon the old syllabus and allow schools to use whatever books and material they choose, or establish a new syllabus as a matter of urgency, with a view to implementing it in January 1996.

5 Educationists and a new ministry of education should conduct a campaign of education aimed at parents and teachers on the implications of the various language options, with the goal of achieving an educationally sound policy that offers a reasonable degree of choice, but limits the options described above. It could be, for example:
   * home-language instruction up to Years 4 or 5 (practically, textbooks could look like the examples in either Option 1 or Option 2.4, or both)
   * bilingual supportive text from Year 1 (practically, this would look like Options 2.1 and 2.3).

6 Because it will take some time before new curricula and therefore new books are available, the issue of existing aproved book lists needs to be addressed. Since it is not physically feasible to set up a new evaluation body immediately to re-evaluate every book in the country at every level in every subject, in the interim I would recommend that all existing lists be combined into a global list - from which schools may elect to use any book - and that either priority be given to establishing a new evaluation system (or body) to evaluate new texts which can be added to the list, or that existing evaluation bodies continue to evaluate new material and add these to the global list.

Conclusion

Language policy, curriculum policy, the pace of educational reform, the financing of education and the political climate in which all of the above operate are too closely linked for a decision to be made on any one of these areas in isolation. It is of vital importance that they be considered holistically, and that the necessary balance of "creative tensions" is achieved before policy is implemented. This offers the best chance of success in reform of the educational system - considered, balanced, well thought out and implemented change instead of the crisis management that has existed in the past.

APPENDIX I

APPROXIMATE NUMBERS OF CHILDREN AT SCHOOL PRESENTLY

These figures are taken from the latest available departmental reports, ranging from 1987 to 1992, so they can only be considered approximate. They do not include the estimated 15 - 20% of children of school-going age who are not at school, and who would be drawn in by the policy of compulsory education.

Sub A	1 460 787
Sub B	1 098 070
Std 1	1 130 402
Std 2	944 075
Std 3	1 013 753
Std 4	817 024
Std 5	739 580
Std 6	761 116
Std 7	659 201
Std 8	529 471
Std 9	453 236
Std 10	412 546
Primary	7 203 691
Secondary	2 815 570
TOTAL	10 019 261

APPENDIX II

TYPICAL SUBJECTS OFFERED AT PRIMARY SCHOOL LEVEL

Below is a list of the subjects offered at Std 3 level by the Department of Education of Bophuthatswana, which is reasonably typical of the subjects offered at this level country-wide.

[Subjects for which books are usually provided]
Setswana
Afrikaans
English

Mathematics
General Science
Geography
History
Health
Agriculture

[Subjects for which books for pupils are not provided]
Art and Craft
Music
Needlework
Physical Education
Religious Education

(from Std 3: A Teacher's Handbook: PEUP, produced at the Institute of Education of UNIBO in consultation with the Department of Education of Bophuthatswana).