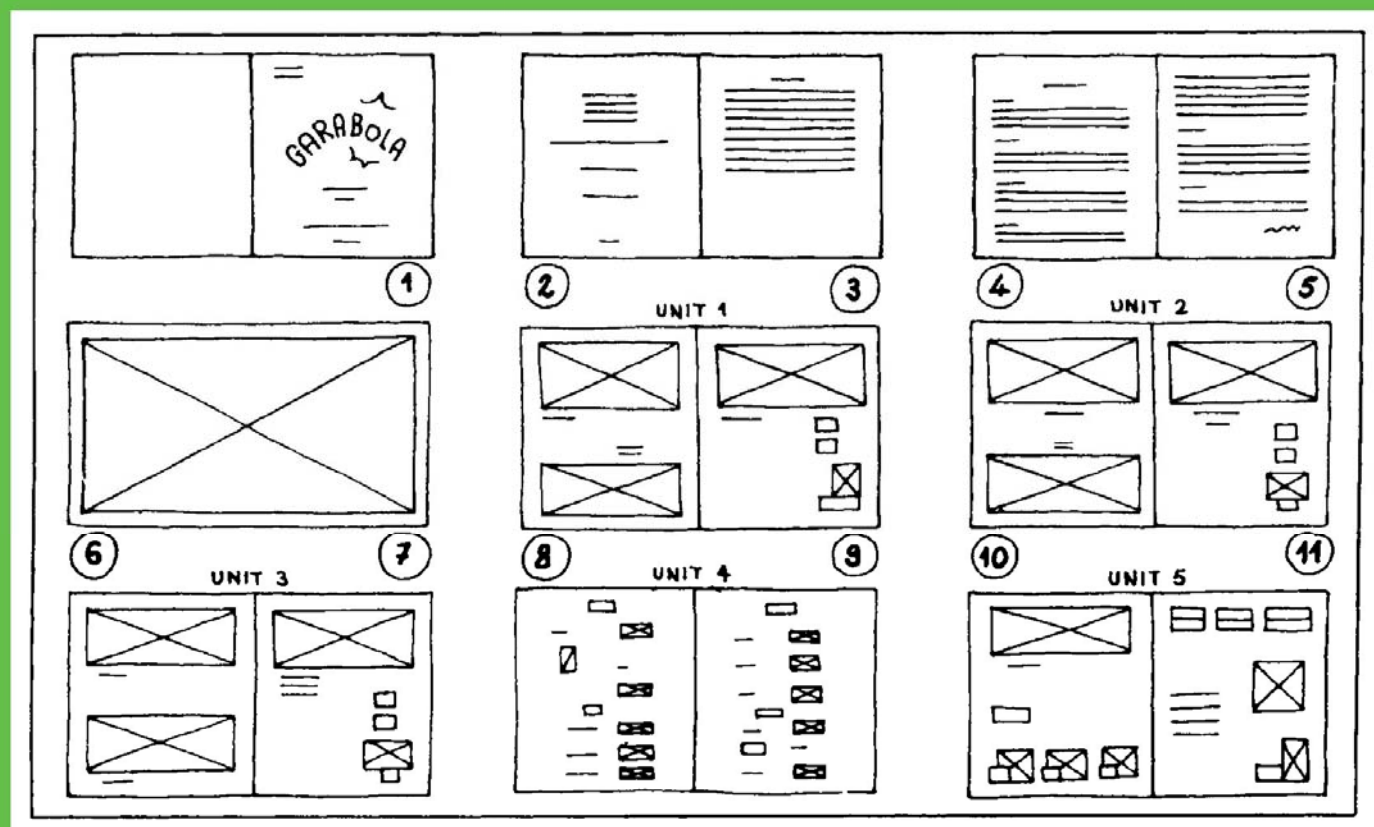


Tailor-Made Textbooks

A Practical Guide for
the Authors of Textbooks for
Primary Schools in Developing Countries

Marie Châtry-Komarek





CODE Europe
Oxford
1996

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Marie Châtry-Komarek
Antananarivo, April 1993

Introduction

Producing textbooks has proved to be the best way to boost the effectiveness of education at primary level in many developing countries.¹

Yet, the book situation has deteriorated steadily over the last fifteen years, to the point where today many pupils have no books at all. A recent study covering eight African countries² points to the situation in rural schools being the most serious: frequently only one or two copies of a book are available per class. The shortage of textbooks has become so severe that it is currently seen as the major obstacle to progress in primary education in sub-Saharan Africa³.

Naturally great efforts have been made to remedy the situation. Numerous governments have tried to obtain technical or financial assistance to enable them to provide their pupils with enough textbooks of a suitable quality⁴. But the results have often been disappointing; most education projects implemented to this end have run into difficulties of scale, the most common being

- the almost total absence of any national textbook policy which could be used to identify the main shortcomings in the supply of school books in each country, and which would contain precise recommendations on how to remedy these;
- the major deficiencies in the education system; in particular the upstream and downstream services, i.e. curriculum design and pre- and in-service service teacher training;
- the frequent shortage of national authors with the skills required to devise books that are specifically tailored to the needs and the possibilities of the country;
- a general lack of the national structures and/or the publishing capacity needed to ensure a regular and general supply of books;
- the lack of an overview of the publishing chain: in some cases, there is no serious preliminary needs analysis, while in others the difficulties of distributing materials to rural areas have not been taken into consideration.

The first reasons advanced to explain the current lack of textbooks tend to be social, economic and political in nature. Our attention is drawn to the explosion in enrolment after universal primary education was introduced in the 1960s, to the austerity which forced many governments to cut non-salary costs in the education sector in the 1980s and to the fact that the education budget is considered to be of only secondary importance in many developing countries and by the international aid community⁵.

We should add that there are also technical reasons. It is extremely difficult to devise a strategy and the pertinent activities which would guarantee a regular supply of quality textbooks nationwide, and ensure that teachers and pupils put these to the best possible use. The efforts of international and bilateral aid organisations illustrate this difficulty to some extent: some fifteen years ago, attributing the shortages of textbooks to the lack of production capacity, they set up printing houses here and there, which rarely work at full capacity, at least partly because there are so few manuscripts worth printing. Today, these aid agencies appear hesitant to decide between the two main priorities that face them: providing a short-term response to the urgent demand for textbooks by investing in existing human resources, primarily authors, or responding in the medium or long term by establishing a full publishing chain along the lines of the model which has proved its worth in industrialised countries, but which would often mean creating entirely new structures in developing countries.

The nature of available literature on textbooks in developing countries also reveals the complexity of the subject. We find analyses of the status quo, which are always instructive

and unanimous in their conclusion that there is an urgent and massive demand for books, particularly in sub-Saharan Africa. We also find interesting proposals as to how to remedy the situation, but these tend to intimidate the reader with their inflated expectations. The people who actually work in the field are conspicuously silent in contrast, despite the wealth of experience they must have in the production of textbooks⁶: there is little material which describes innovative experiences vis à vis textbooks, and even less on the process of designing these books.

This is a regrettable state of affairs. Firstly, teams of authors are too often forced to gain the same experience time after time, repeating the errors of those that have gone before them - reinventing the wheel as it were; analyses alone, however important they may be in order to remedy the textbook problem in developing countries, are not enough. It is imperative that they be supplemented by data collected on the spot, in practical textbook development work.

This publication is first and foremost a testimony which we hope will go some way to help fill the gap. It reflects our experience gained in the course of more than fifteen years working in GTZ⁷ education projects devoted to developing textbooks for primary schools. It lifts the curtain on two textbook workshops, the German-Peruvian Bilingual Education Project⁸, whose overall goal was to design didactic materials for all subjects and all classes at primary level for native Quechua and Aymara speakers (1977-1990) and the German-Malagasy Tef'Boky Project, which trained authors and devised textbooks in the national language for primary schools (1986-1994).

It should be noted that this book is not a case study. The specific experiences mentioned are used primarily to illustrate explanations which might otherwise be overly abstract. It is primarily a general interest publication for all those responsible for supplying high-quality textbooks to primary schools in developing countries. And above all it is a guide for authors of these books, all of whom should be able to find valuable information here, although it should be of most use to "apprentice authors" and those who have not had the benefit of an in-depth training in publishing. The points picked up in this book are those that in our experience constitute the commonest stumbling blocks. The contents can be broken down into two rough categories.

General Information

The first two chapters are dedicated to general information. Chapter 1 looks at work relating to the production of textbooks in industrialised countries and at recommendations for developing countries, to enable authors to identify the nature of the textbook production system within which they operate, and the duties which will fall to them.

Chapter 2 looks at the skills and attitudes required by authors, and at the tools which will allow them to preserve group dynamics while enhancing the quality of the individual contributions.

This is background knowledge which we consider indispensable for all those involved in the development of textbooks. We should point out that the information contained in these chapters cannot be harnessed directly by authors in their day-to-day work, unlike the other chapters which do give detailed instructions that can be put into practice immediately.

Detailed, Step-by-Step Description of How to Produce a Textbook

The rest of the guide covers the work involved in writing textbooks in developing countries, from the preliminary research to the preparation of a pilot version, ready to be printed.

What is unique about the approach taken here is that activities are described in chronological order. It is a sort of guide which takes authors through the process step by step, from forming a working group to submitting the final manuscript to the printer. In this we differ from other publications which look at this topic and then go on to analyse the various aspects of books, without aiming to follow every detail of the work of the authors⁹.

The topics tackled in the following chapters are numerous and sometimes complex. They should be relevant for the production of textbooks for primary level regardless of the subject or language in question, but authors of materials designed to teach reading and writing - particularly those working in a national language - will find information which specifically addresses them.

We would like to emphasise that, in spite of the number of points tackled, this work cannot be considered exhaustive, firstly because it is based on specific experience, which automatically makes it subjective and incomplete, secondly because it looks primarily at authors in developing countries and attempts to meet their particular needs¹⁰, and finally because the development of a textbook involves numerous different disciplines which cannot be dealt with extensively within the scope of any one publication. This work cannot thus be anything other than incomplete, and certain aspects have even been voluntarily omitted: we do not go into any details which refer too specifically to any one discipline, such as textbooks for a second language or foreign language, nor do we look at things which cannot under any circumstances be the duty of the authors, or those which cannot be considered a priority in the current crisis facing numerous developing countries. The voluntary omissions include

- 4-colour printing
- Planning and managing projects for the mass production of textbooks
- Distribution strategies
- Teacher training to enable teachers to put a new textbook to the best possible use.

It will probably not always be easy to read this guide. Some authors will be somewhat discouraged by the scope and complexity of the work described, others will begin to worry about the feasibility of the undertaking, while still others will be irritated by the inevitable gaps. We would like to encourage those feeling discouraged, doubtful or dissatisfied, and point out that this guide was written, edited and published in a developing country, using precisely the inputs generally at the disposal of textbook projects in developing countries¹¹. It can thus be considered a real life demonstration that the work described between these covers is indeed feasible. In terms of the outer appearance, this book cannot claim to compete with the remarkable publications on the same topic which have been published in industrialised countries. The contents, on the other hand, ought to be better adapted to the target group, even if they sometimes appear somewhat unorthodox to specialists from industrialised countries: the work described here is both necessary and sufficient to allow authors who do not yet have much experience to produce high-quality textbooks for and in developing countries.

This book cannot take the place of either practical experience or a long-term training course. We hope, nevertheless that the approach presented here, and the examples given will be instructive and useful. We equally hope that this testimony stimulates those working in the field, and encourages them to publish their own experience, which would be an invaluable contribution to the search for ways to overcome the current shortage of textbooks in developing countries.

Using this Guide

We entitled this book "A Practical Guide" because we intended it to be a genuine tool to assist textbook authors. To ensure that it is used as such, here are a few pointers which should help you find your way around the book and locate the information you need with ease.

Chapter Topics

The basic structure of every chapter is identical, i.e.

- A summary which puts the work in context and underlines the essentials
- A description of the work involved in this particular phase, as precise as possible and in chronological order as far as possible

- Illustration of the main body of the text, generally in the form of boxes referring to experience gained in producing reading and writing books in Malagasy within the framework of the German-Malagasy Tef'Boky Project already mentioned. For reasons of clarity we have decided to concentrate on *Garabola*, the first book to be produced in this series, which we will present in more detail below.
- Notes at the end of the chapter
- Some suggestions for further reading which can be followed up by anyone interested in going into the subject in more depth
- A systematic resume of the ground covered in the chapter.

Text Markers

Apart from the first two chapters, you should read every chapter bearing in mind the order in which work should be performed; a number of text markers will help you find your place, i.e.

- The chapter title at the top of each left-hand page serves as a rough guideline.
- A running head at the top of each right-hand page gives you your bearings more exactly.
- A telegram-style summary of the most important points can be found in bold at various points in the text.
- An index at the back of the book allows you to look up individual points, check information or rapidly find precisely the information you need.

How to Get the Most out of this Book

This guide can be said to pursue a two-fold goal: the first two chapters aim to give textbook authors the basic information they need to start work, i.e. to train them all be it in a very rudimentary fashion; the second part is designed as a guide for textbook production.

As a result of this dual goal - training and production - the guide comprises different sorts of texts. Firstly it presents general information which the reader should assimilate if possible. Secondly it gives detailed advice similar to a user's manual, which is far too compact to be memorised.

This explains why it is not advisable to try and read the book from cover to cover at one sitting. Neither, however should you merely dip into it from time to time. We recommend using the book as follows to ensure you get the most out of reading it:

- Read the first two chapters carefully, more than once if necessary, as an introduction to the problems of textbook production and to the layout of this guide.
- Read through chapters 3 to 7 rapidly. This is crucial to enable you to find the detailed information you need later.
- Consult the book throughout the process of producing a textbook as and when required to check information, or read in more detail about a specific point. You can only consult the book properly if you can put the specific information into the overall context.

These different approaches will help the reader extract a maximum of information from the book, and will help enhance the quality of the textbooks he or she is responsible for producing - and that is our aim.

Reference Material

In this book we will make frequent reference to the didactic materials produced by the German-Malagasy Tef'Boky Education Project; particular importance is attached to the *Garabola* set of materials designed to teach reading and writing in Malagasy.

For reasons of clarity, we will outline the main features of the pilot version and the revised version below.

Garabola, pilot version

Published in 1988

Authors:

- Narison Andriamialijaona
- Randimby Rafaralahy
- Stefanoela Rakotodrainy
- Jules Ranaivoarisoa

The set

- 3,000 copies of 1 reading book, printed in two colours, 80 pages, 240 x 170 mm, saddle stitched with two staples
- 3,000 copies of 1 writing book, printed in black, 240 x 170 mm, saddle stitched with two staples
- 100 copies of the teachers' guide, photocopied, 196 pages, 297 x 210 mm, spiral binding.

The reading book contains

- Three lessons on the vowels, **o**, **i** and **a**
- 18 lessons on the 16 consonants and the vowels **e** and **y**; every four lessons two pages to read to consolidate what has been learned
- 16 pages of supplementary reading.

The book was printed in two colours to make it of a comparable standard to a book for learning French as a foreign language which had just been published in 4-colour, and which was being distributed nationwide at the time.

The writing book contains

- 10 pages of preparations
- 3 pages of writing for each of the 21 letters of the alphabet, following the same order as the reading book
- 2 pages of revision, corresponding to the consolidation reading
- 3 times 2 pages of evaluation, which correspond to the Christmas, Easter and summer examinations.

The teachers' guide contains

- 20 pages of general information on the subject "Malagasy" and the material
- A 12-page first part, which corresponds to the work of the first two weeks of the school

year for the pupils in this class

- A 160-page second part, containing a real script for all elocution, reading and writing classes scheduled for the year
- One glossary of the principal technical terms used in the guide.

Garabola, revised version

Published in 1991

Authors:

- Narison Andriamialijaona
- Marie Châtry-Komarek
- Randimby Rafaralahy
- Jules Ranaivoarisoa

The set

- 450,000 copies of 1 reading and writing book, printed in black, 96 pages, 240 x 170 mm, saddle stitched with two staples
- 17,000 copies of the teachers' guide, printed, 212 pages, 297 x 210 mm, spiral binding.

As regards the essential pupils' materials, the main difference between the pilot version and the revised version of *Garabola* is that the separate writing book was dispensed with.

The final version of the book is thus intended as a tool for both reading and writing.

With the exception of the first three lessons, which focus on learning the vowels, the presentation of all chapters is identical:

- 2 pages for reading
- 2 pages for writing.

Although the basic layout of the revised teachers' guide is the same as the pilot version, i.e. detailed instructions for each of the speaking and listening, reading and writing lessons scheduled for the year, fundamental changes were made as regards visual presentation.

Notes

¹ Cf. Heyneman, S.P. et al *Textbooks and achievement. What we know*. Washington D.C.: World Bank, 1978.

² Cf. Buchan A. et al *Etudes sur le secteur du livre en Afrique*, p. 17. Washington D.C.: World Bank, 1991.

³ Cf. World Bank *Education in Sub-Saharan Africa*, p. 42. Washington D.C., 1988.

⁴ Between 1965 and 1983, for instance the World Bank helped finance 48 projects which tackled the preparation, supply and distribution of textbooks; the proportion of textbook projects, which accounted for 6% of all education projects in 1974, had risen to 43% of the total by 1983. Cf. Searle B. The provision of textbooks by the World Bank. In: Farrell, J.P. and Heyneman, S.P. *Textbooks in the Developing World*, p. 17. Washington D.C.: World Bank, 1989.

⁵ In 1989 only 23% of international aid went to the social sector, and only 7% of the aid pledged to the education sector went to primary education. Cf. United nations Development Programme. *Human Development Report*, p. 8. New York, 1991.

This percentage is all the more surprising since the importance of primary education and textbooks is recognised. The need to invest in author training and in the production of textbooks specially tailored to the needs and abilities of those concerned should long have been accepted as a self-evident fact and been elevated to a priority of international aid.

⁶ In 1985 86 languages were recorded as being used in instruction in African primary schools. Cf. UNESCO. *Les langues communautaires africaines et leur utilisation dans l'enseignement et l'alphabétisation*. Dakar, 1985. In spite of the absence of any systematic documentation of the teaching materials produced in each of these languages it is safe to assume that a not inconsiderable number have been produced over the last twenty years.

⁷ Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH (German Technical Cooperation).

⁸ The experience gained in this project as regards the production of reading and writing books in Quechua has been presented in a Spanish publication. Cf. Châtry-Komarek M. *Libros de lectura para niños de lengua vernácula*. Eschborn: GTZ, 1987.

⁹ At this point we should mention Richaudeau F. *Conception et production des manuels scolaires*. Paris: UNESCO, 1979 which we will refer to at several points in the course of this guide.

Although his method is not the same as ours, we would recommend this publication to all teams of authors of school materials in developing countries as one of the best works of reference currently available.

¹⁰ It would be unthinkable in a book aimed at a European or North American audience not to dedicate a significant amount of space to colour printing, but we consider this too expensive for most developing countries, and thus of only secondary interest.

¹¹ We refer to the first French version published in Madagascar in 1993.

Getting Down to Basics

Who decides to produce a new textbook? What steps must we take to produce it systematically? Who is responsible for preliminary research? Who produces the concept? How much time is needed from the finalisation of the concept until the finished book is distributed to schools? Who interfaces with the graphic artist? And with the printer?

These are a few of the questions facing first-time authors, and are probably the questions most likely to cause headaches for those of you who have already produced several books without having been specifically trained on the job. You may feel that you are unable to pinpoint the weaknesses of your own products, and thus improve them. To answer these questions, we will start by looking briefly at the various steps involved in producing a textbook, before going on to look at the respective responsibilities of the agencies and individuals involved in industrialised countries and in developing countries.

Why should we look at the various production systems, you may ask. Not to pronounce a value judgement, but to give you a framework of reference. Firstly we will look at the procedure adopted by major publishing houses to produce works that are competitive in terms of quality and price, and only then will we go on to identify the special nature of the production process in developing countries, and thus to deduce your responsibilities as authors.

This chapter, which contains general information and ideas, differs from the subsequent chapters which give precise descriptions of the steps involved in producing a textbook. We suggest nevertheless that you read it carefully since this will allow you to situate the various individual steps described later in the book within the context of the overall process.

Try to become familiar with the various steps in the publishing chain, since this will allow you to identify the special features of the production system within which you operate, and to pinpoint your own role within that system

A private publishing house accompanies its “baby” every step of the way, until it is in the hands of the user

1. A Textbook is Born

We term the collection of operations leading from the idea to the production and distribution of a book - in the case in hand from the textbook publication project to the pupil - the “publishing chain”.

While it is true to a degree that the steps in the publishing chain are always identical (every book is planned, designed, produced and distributed in that order), as we will see below the procedure adopted does vary, and the differences are important.

The Chain at Commercial Publishers

In industrialised countries, textbooks are generally produced by private publishing houses, which are guided by the profit motive; the various steps making up this commercial production style are systematically organised. Since it is important for you to have a thorough understanding of the work involved, we will firstly explain this work, then illustrate it and finally summarise what you have learned.

Preliminary Research

A market analysis is always conducted before work starts on a textbook. The publisher only decides to produce a book once he is certain that there is a demand for the product, i.e. once he has identified a shortage of textbooks in schools for a particular subject or when changes

to a curriculum mean that new books will be required.

The Concept

Having decided to go ahead and produce a textbook, the publisher moves on to the conceptual phase. He firstly defines his pedagogical, technical and financial criteria, and then decides on the sequence in which the content matter will be presented and on the physical and design features of the book (including the format, number of pages, number of illustrations and their format, and the layout of the text and illustrations on the page).

At the end of this phase the publisher will generally have produced a preliminary plan or “design” of the future book, which serves as a guide for authors and illustrators, and can be used to draw up an initial quotation.

Producing Texts and Illustrations

Authors and illustrators now enter the scene: the authors write their texts and devise exercises on the basis of findings identified during the conceptual phase; their work is subjected to various internal controls within the publishing house and sometimes to spot checks in one or more schools. The illustrators produce the graphics in line with the instructions they receive from the publisher and the authors. In general a final quotation can be drawn up at this stage.

Preparations for Printing

All the elements to be printed must be prepared: the manuscript has to be typeset, i.e. composed into pages suitable for printing; illustrations must be prepared in a photoengraving workshop. Composition and photoengraving work is done on films for offset printing.

The text and illustrations are then arranged on each page: the design drawn up during the conceptual phase is finalised and a model or “layout” produced, which is used as a sort of template for the future textbook.

Following the instructions given in the layout, the films produced for the text and illustrations are arranged for every page, and the pages are “mounted”, i.e. all the pages that are to be printed at the same time are stuck onto a transparent background.

This montage produces the forme which can then be used to print the book.

Printing and Finishing

The textbook is now ready to be printed. Large-format sheets are placed in the printing press. Several pages of the future textbook will be printed at once, as they have been mounted.

The sheets must then be put into the final form, which involves five steps: firstly they are folded in line with the number of pages printed per sheet and the type of folding planned, then they are put together to form the inside of the book; the book is then stitched, stapled or stuck together. All that then remains is to add the cover and trim the three open sides to give a neat finish - a new textbook is born.

Storage and Marketing

The textbook is stored at a distribution centre. A promotion campaign is run to present it to those responsible for purchasing textbooks, primarily school teachers and head teachers. A distribution network then ensures that the textbook can be supplied to book shops or directly to the schools.

Follow-Up

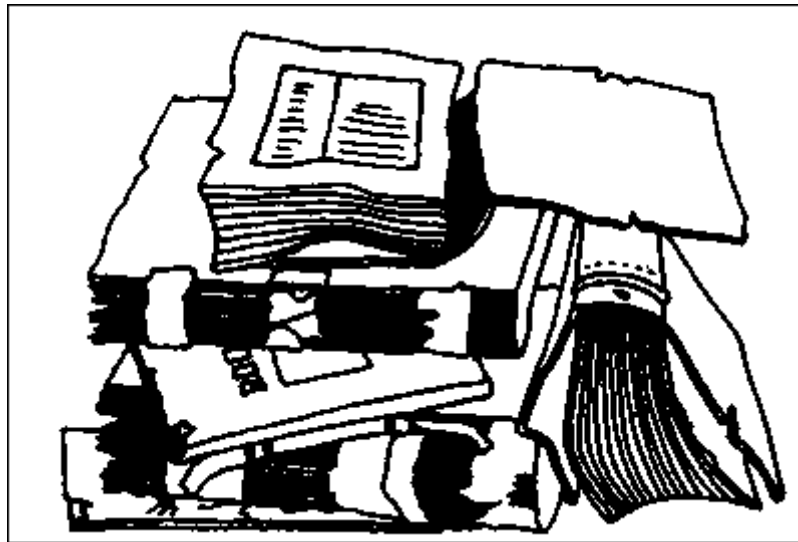
In the field, the publishing house monitors the performance of “its” book, with a

view to possible reprints

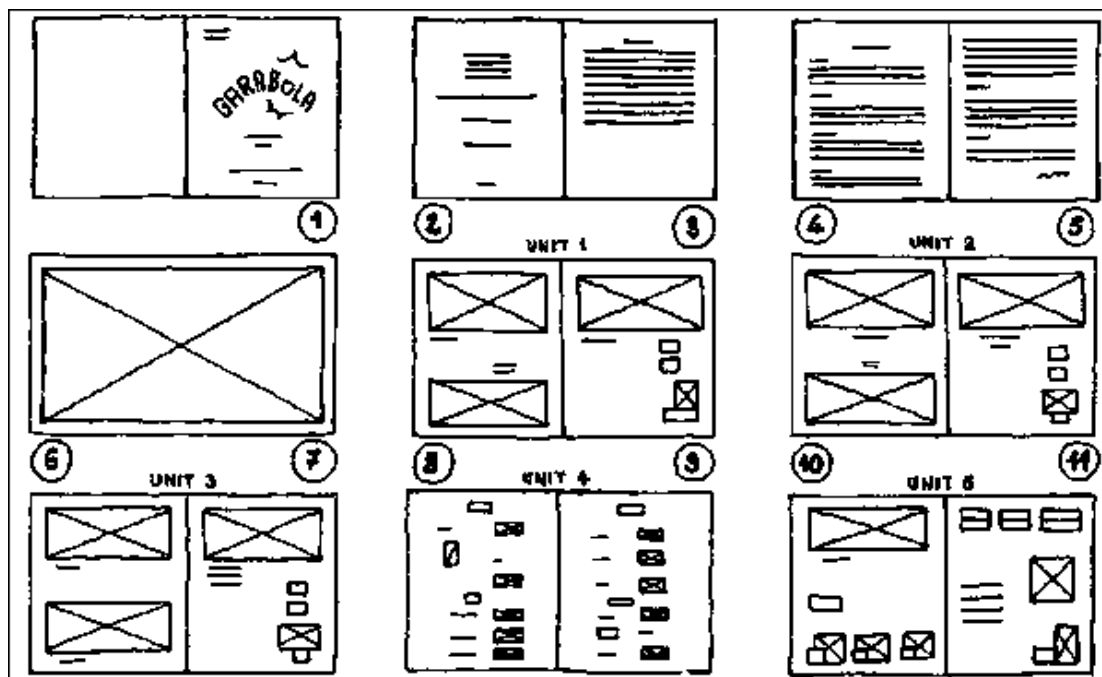
The use of the textbook is more or less strictly monitored; the publisher thus gathers data which would be important for any reprints.

If you do not yet have much experience in this field, this initial description of the production process has probably confused you a little. You probably did not realise that so much went into producing a textbook.

The technical terms, specially those from the world of printing, are bound to be new to you, and you will have no clear idea about what certain operations really involve. But we have refrained from going into detail about the individual technical operations, and we have not even mentioned every essential step in the production of a textbook.



1. Preliminary Research: The most common reasons for publishers to produce new textbooks are that the old ones are tattered and worn, have become unusable or have become obsolete as a result of major changes in the official curricula.



2. The Concept: Once the contents and the form of the textbook have been defined a design

can be drawn up. Thereafter the approximate visual arrangement of the texts and illustrations can be undertaken, double page by double page; this draft is known as the layout plan. The illustration below shows the first few pages of Garabola at this stage.

There are three reasons for this: firstly, if you are interested in discovering more about certain production techniques you will have no difficulty in satisfying your curiosity; at the end of each chapter we list a number of publications which deal with these points and illustrate them well; secondly, you should focus your attention primarily on those parts of the process which directly concern you as authors - the analysis of the subject matter, for instance - rather than getting bogged down with technical details; finally this brief presentation will be taken up again and dealt with in more detail in chronological order in later chapters, which will give you additional information and broaden the scope of this first brief introduction.



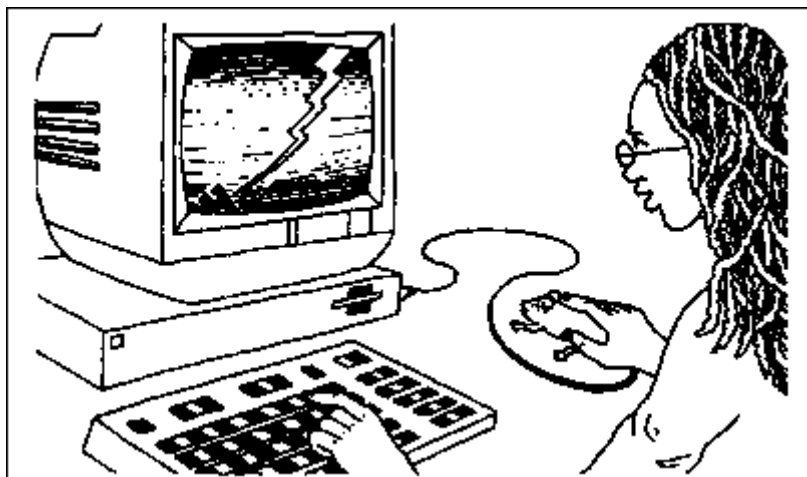
3. Producing Texts and Illustrations: The authors devise texts and exercises, while the illustrators produce the graphics, both working on the basis of the layout plan.

What should be grasped at this stage is the principal stages that make up the publishing chain on one hand, and the basic principles of certain tasks involved in producing a textbook on the other. To allow you to better assimilate this information, we have summarised the

essential points, and illustrated some of them.

As authors you should become familiar with the various links in the publishing chain

4. Preparations for Printing: You should be able to distinguish the various phases of work.



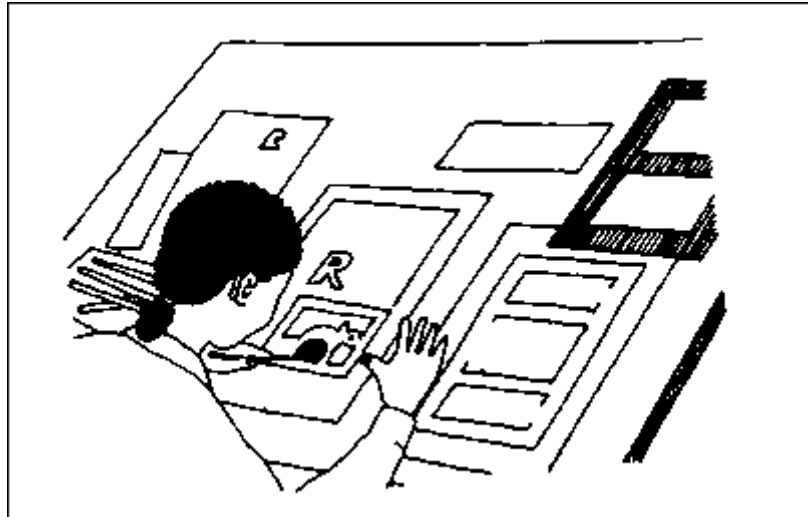
• The texts and exercises are typeset using a computer, the characters in the resultant copy are the correct shape and size.



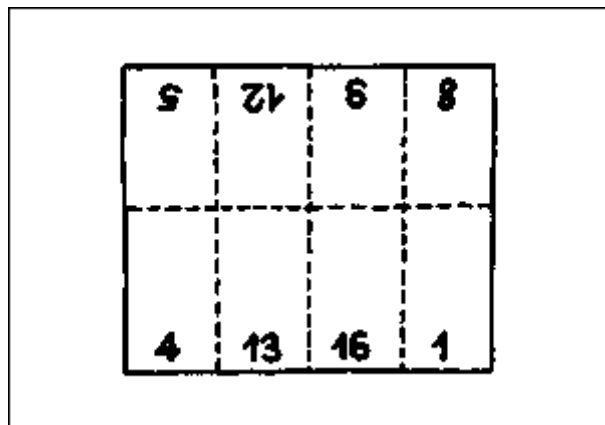
• The layout artist then makes a precise dummy make-up on paper, arranging texts and illustrations.

These explanations and the illustrations above will have helped you to familiarise yourself with the various steps that make up the chain, as practised by large publishing houses.

Given the fact that it is imperative for you to start to memorise the sequence of work involved, we will, however, come back to the production phases for a textbook one more time, summarising the main phases within the publishing chain and the results of each phase. Before you proceed to the next section, we would thus recommend that you look at Table 1.



- On the basis of this, the films made for the texts and illustrations for each page are mounted.

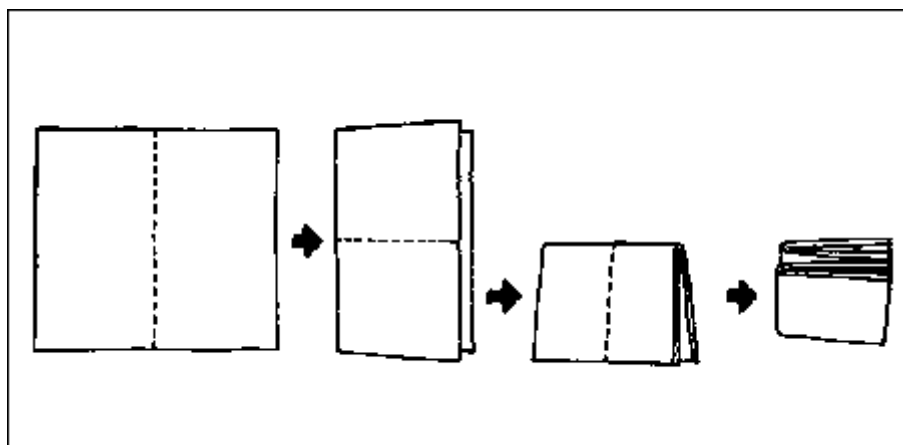


- Finally, the imposition is checked to ensure that the pages are arranged so that they will read consecutively when the printed sheet is folded. If eight pages are to be printed together, for instance, the layout would be as shown below.

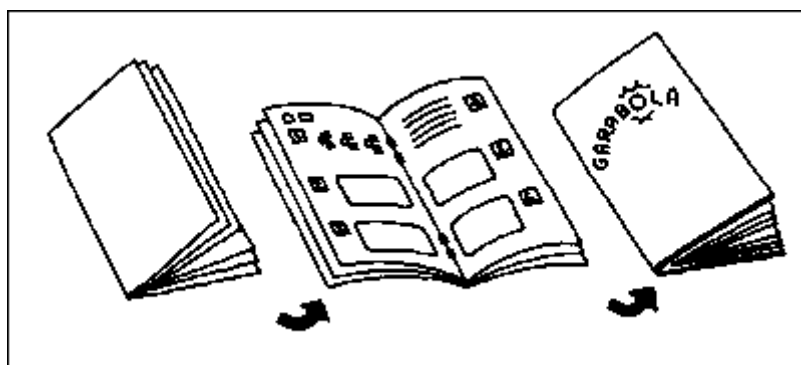
Production Cycle in Developing Countries

After this introduction to the steps involved in the commercial production of textbooks, let us now turn our attention to the procedure that should be adopted in developing countries.

5. Printing and Finishing Once again you must distinguish between various phases.



- Firstly the new textbook is printed on large sheets of paper which are folded several times to make what we call “signatures”, so that the pages are in the correct order.



- Then the book is finished: the signatures are put together to form the inside of the book; they are sewn, stuck or stapled together, and finally the cover is added.

At first glance, the publishing chain is similar, since in both cases the preliminary research always precedes the concept, after which comes the writing, illustrating and production of the textbook. But, while industrialised countries have a long history of textbook production, as well as the resources to guarantee the quality of their work, the situation is very different in developing countries, where often even the most essential data is unavailable, as are expertise and resources. It is not unusual for there to be no official figures for the school-age population or the teacher to pupil ratio, and frequently it is not known what timetable the schools follow. This is why the production of high-quality textbooks, already an extremely complicated undertaking in industrialised countries, is all the more complex in developing countries.

1. Main Stages in the Publishing Chain and Results	
Stages	Results
1. Preliminary analysis	Market study
2. The concept	
Pedagogical considerations	Plan and organisation of contents
Physical considerations	Definition of format, number of pages, dummy
Graphic considerations	Decision on type of illustration and printing, layout
Financial considerations	Provisional quotation
3. Producing texts and illustrations	
Texts	Manuscript
Illustrations	Graphics dossier (photos, drawings)
4. Preparations for printing	
Typesetting the text	Galley proofs
Processing illustrations	Films
Paging on paper	Imposition scheme
Make-up and imposition	Film
Report	Blueprint
5. Printing and Finishing	
Printing	Printed sheets
Folding	Printed signatures
Assembly	Inside of book (unbound)
Binding	Inside of book (bound)
Attaching the cover	Book with irregular edges
Trimming	Finished product

We will look again at the steps in the publishing chain we identified above, and see where the procedure adopted in developing countries differs from the above scheme. Let us also point out that we will not go into the process of translating or adapting textbooks, however justified

this may be under certain circumstances. What we describe here is how to produce an original textbook, what to do when one cannot adapt or translate existing books¹.

The publishing chain cannot be merely mechanically transferred to developing countries

The first unique feature of textbook production in developing countries: the feasibility study must look not only at the demand for textbooks, but also at the conditions under which they can be written and illustrated, manufactured and distributed

Preparations for an Education Project

Study of demand, available resources and conditions under which the books can be produced (1 year).

In industrialised countries, it is enough to identify a demand for a textbook, since the production and distribution techniques and facilities already exist. In developing countries on the other hand the production of a textbook depends on education policy, textbook policy, financial considerations, technical considerations such as the supply of paper and printing capacity, human resources, distribution and storage capacities, etc.² To ignore any one of these considerations may sometimes suffice to jeopardise the entire textbook project.

A period of several years may elapse before the textbook project can be launched, for, even with the support of an international or bilateral organisation, projects of this nature generally involve recruiting staff, finding premises and procuring the necessary materials.

Preliminary Research

Analysis of the context within which the textbook is to be used (6 months-1 year).

Let us once again compare the situation in industrialised and developing countries. In the former case the publisher is already fairly familiar with the target group, since he usually specialises in one subject and one specific level. In developing countries, however, the publisher often knows little about the target group, and the reference material available tends to be fairly unreliable and inadequate. It is thus crucial to conduct field studies to collect detailed data on teaching and learning conditions.

The second unique feature: preliminary research must look at teaching and learning conditions

Pilot Textbook

Devising, writing, illustrating, paging, printing and finishing the textbook (1 year).

The description and sequence of the tasks that make up this phase of the production work do not differ significantly from those undertaken in industrialised countries, even if textbook projects often lack the resources that a commercial publisher would have.

The result, however, is different in that it cannot be considered a final product. It can only be a pilot textbook.

Testing and Evaluation

Distribution of the textbook to selected schools and presentation to teachers at these schools, testing and evaluation (1 year).

In industrialised countries, given the degree of uniformity that exists from one school to another it is often enough to test one or two units of the new textbook at a few schools before moving on to produce a final version. In developing countries, given the lack of basic data,

and given above all the great heterogeneity of teaching and learning conditions often found, the textbook must be tested in its entirety at a representative sample of schools for a minimum of one academic year before it is evaluated.

Producing a Revised Version

Revision of the pilot textbook, official check, printing the revised version (1-2 years).

The results of the evaluation phase allow us to revise the book before printing a large run. The length of this phase can vary; it depends first and foremost on the scope of changes felt to be necessary and the willingness of the authors to modify a product with which they still identify closely; it will also depend on the authority and provisions of the official body responsible for approving the final version, and on the various factors involved in printing a large run of textbooks (size of the run, terms of financing, country where the books are to be printed, etc.).

Nationwide Introduction

Devising and realising a distribution strategy for all schools concerned, in-service training and monitoring for teachers (2-4 years)

Let us once again compare the situation in industrialised countries with that in developing countries; in the former the new textbook is brought to the pupils without any major difficulty via book shops or schools, whereas in developing countries it is difficult to reach rural schools and rare to find an effective distribution network. Also, in industrialised countries teachers are in a position to use the new book without additional training, while in developing countries the new textbook must be systematically presented to ensure that it is put to the best possible use.

In developing countries the universal introduction phase thus demands skills, huge technical and financial resources and a great deal of time. However many schools must be served, and however many teachers must be trained, these two activities are always large-scale projects in their own right.

To sum up, then, the following tasks are needed in addition to the links of the commercial publishing chain to ensure that the textbooks produced in developing countries are suitably adapted to local needs:

- Preliminary feasibility study
- Field studies of the teaching and learning conditions
- Testing the new book at a representative sample of schools for a minimum of one academic year, and then evaluating the results
- Systematic revision of the pilot version of the textbook
- Development of a national distribution strategy
- Presentation of the new book to the teachers who will have to use it.

Textbook Projects

You will have realised by now that the systematic production of textbooks in developing countries would overtax any single department or unit. How, you may ask, can didactic material be devised and produced taking into account all the relevant aspects of the system? Who has the human, technical and financial resources to undertake a task of this scope?

Some developing countries can meet their textbook requirements using their own skills and funds - but these are the exceptions. More often projects, generally funded by international or

bilateral technical or financial cooperation, are charged with the systematic production of textbooks.

We think that it is instructive for those of you who are still relative newcomers to the field of textbook production to realise that projects of this sort can generally manage to perform the work described above. By way of example we will describe below the main phases of production for the very first textbook devised, developed and produced within the scope of one such education project, the Tef'Boky Project³.

<p>2. A Textbook Emerges Step by Step</p> <p>At the end of 1986 an education project, the Tef'Boky Project, was launched in Madagascar. It aimed to train a group of authors and to develop textbooks in the national language for primary school pupils. To pursue the two-fold goal of training and production, the group of authors responsible for the subjects Malagasy and mathematics produced the materials step-by-step in a way which may be considered fairly exemplary. This table shows the chronology of <i>Garabola</i>, the first reading and writing book to be produced in Malagasy.</p>
<p>1. Feasibility Study</p> <p>In 1984 a study committee noted a general shortage of textbooks in Malagasy for primary school pupils. The committee recommended that authors be trained to fill this gap.</p>
<p>2. Preliminary Research</p> <p>In 1986 the Tef'Boky Project was launched; in October, the authors responsible for Malagasy started work. They prepared and undertook preliminary research in the field, and at the end of 1987 presented the results in a document which served both as the principal frame of reference for the materials to be developed and as a report for the education authorities.</p>
<p>3. Producing a Version for Testing</p> <p>In 1988 this working group devised and develop a set of learning materials for reading and writing Malagasy. 3,000 copies of <i>Garabola</i> were printed ready for the start of the academic year 1988-89.</p>
<p>4. Testing and Evaluation</p> <p>The didactic material was tested for one academic year at forty schools and the level of attainment tested at the end of the year; the results were presented officially to the ministry.</p>
<p>5. Producing the Revised Version</p> <p>In 1990, the material was revised on the basis of the results of the evaluation phase and was selected for nationwide use: thanks to a World Bank loan 450,000 copies of the new textbook and 17,000 copies of the teachers' guide were printed; slates introduced to replace exercise books were also financed.</p>
<p>6. Universal Introduction</p> <p>The structure set up with the help of the World Bank⁴ is currently in charge; it is responsible for working out the nationwide distribution plan. <i>Garabola</i> should be used throughout the country as from the academic year 1993-94. Some ten years have thus elapsed since the feasibility study.</p>

Writing and Production

Test your book systematically and evaluate the results before printing a large run
Plan the entire series of textbooks from the outset

If you do not yet have experience in the field of textbook production, you may think that, once the appropriate funds have been approved, the revised version of a textbook can be rapidly distributed to all schools in a country. Nothing could be further from the truth, however. If you look carefully at Table 2, you will see that no less than three years elapsed before the textbook was finally distributed (in 1993), although the finished version was completed and the funds available in 1990.

It is important to know that the authors can only influence the rate of progress on the work for which they are directly responsible. Where your textbook is to be printed in large numbers you have no control over the printing or the distribution; your "product" slips completely out of your hands and there will be delays and break-down which you will almost inevitably feel are out of

all proportion given the long, complex development work, particularly if you attacked your part of the work with great gusto.

Table 3 gives you an idea of the imbalances that can occur between the development phase and the production phase. This table follows the progress of *Garabola*, indicating a few crucial times in the printing and distribution of the 450,000 books.

3. Garabola is Born										
Activities	84	85	86	87	88	89	90	91	92	93
Feasibility study	■									
Preliminary study			■	■	■					
Development and production of first version				■	■	■				
Testing						■	■			
Evaluation							■			
Revision and production of revised version								■		
<i>Garabola</i> selected for nationwide use									■	
International tendering									■	
450,000 copies printed										■
Delivery to capital										■
Packaging, labelling										■
Planned arrival at schools										■

Textbook projects should always incorporate author training

Producing a Series of Textbooks

As you have just read, the process of providing a large number of systematically produced textbooks can be long and difficult, but it is possible with the requisite technical and financial back-up.

Nevertheless you will also have noted that, even given a favourable framework, i.e. once the technical and financial problems have been solved, the production of a first textbook takes years - no less than ten in fact⁵! How can we possibly produce two books then within a reasonable time-scale and without any drop in quality? And an entire series?

Throughout the industrialised world, the production of textbooks follows a rigid scheme, spanning several years; in developing countries no other procedure should ever be adopted. Yet the planning is always most difficult in this part of the world, where the publishing chain is longer and more complex. When we aim to produce a series, we must coordinate the activities needed for several different textbooks at once; to put it more clearly, while the first textbook is being tested and revised, plans must be made for the development of the second, such that the books in the series are printed without "losing" any academic years, and without missing the start of the academic year.

To illustrate this, Table 4 shows the actual time schedule used in the Tef'Boky Project to produce the pilot and revised versions of the first two reading and writing books produced in Malagasy, *Garabola* and *Tongavola*⁶.

4. Time-Frame for Work on Garabola and Tongavola										
Work	84	85	86	87	88	89	90	91	92	93
Garabola (first version)										
Preliminary research			■	■	■					
Concept, development and production				■	■	■				
Testing and evaluation						■	■	■		
Garabola (revised version)										
Revision								■	■	
Printing									■	■
Tongavola (first version)										
Concept, development and production					■	■	■			
Testing and evaluation							■	■	■	
Tongavola (revised version)										
Revision									■	■
Printing										

2. Those Responsible

The duties described and illustrated above should have given you a basic understanding of how textbooks are produced.

This information is undoubtedly of capital importance to you, but it is still far from being adequate to allow you to start work, far less to plan your work. Indeed until you are aware of the many actors involved in the chain and their respective tasks, you will find it difficult to define your own. You should also note in this context that it is just as important for a new author to acquire an understanding of the technical side of production as to analyse and fully understand the production system within which he finds himself.

Bearing this in mind, we now propose to look at the duties of the various units and entities which are involved in producing textbooks.

Once again, we will firstly turn our attention to the system generally adopted in industrialised countries, to allow us to better gauge the special features of those used in developing countries.

As authors you can only define your own task once you are familiar with those of all the other actors involved in the publishing chain

In the commercial publishing chain we find three entities each with its own well-defined role

Private Contractors in Industrialised Countries

In spite of certain differences it is true to say that there is only one real textbook production system in industrialised countries.

As a general rule, three entities are involved in the commercial publishing chain - the Ministry of Education⁷, a publishing house and a printer, the latter two always being private enterprises. The duties of each of the three have been clearly established for some time.

Each of these three can, naturally, sub-contract certain operations to another enterprise. It is, for instance, common practice for ministries to contract a research institute to modify curricula or to evaluate didactic materials; the publishing house may contract educational consultants

to define the contents of the new textbook; and finally the printer does not as a rule perform every stage of the production work himself, and may well farm out the stitching or binding work.

In Table 5 we have only indicated which of the three entities is responsible for each task, regardless of whether they perform the work themselves or delegate it.

You will see that “evaluation”, so important in developing countries, is not even mentioned in the table. There are two main reasons for this.

- Firstly a rigorous external control is often conducted before a new textbook is granted the official authorisation, compulsory in some countries, where the publisher must have every book produced approved by the Ministry of Education. This procedure ensures that the products submitted by the publisher for approval are of a high quality.
- Secondly, where no official approval is required the publisher bases his decision on whether or not to order a reprint firstly on commercial considerations (sales figures), while head teachers, members of textbook examination committees and teachers play a not insignificant part in that they select the books, and thus help ensure certain quality.

5. Principal Duties of Those Responsible for the Textbook	
Entity	Duty
Ministry	
	Defines national education policy
	Develops or adapts curricula
	Officially approves textbooks ⁸
	Evaluates levels of attainment
Publishing House	
	Decides whether or not to publish a textbook
	Defines the pedagogical considerations
	Identifies the physical and graphical form of the book
	Has a quotation drawn up
	Selects and contracts authors
	Selects and contracts illustrators/photographers
	Supervises and controls editorial work
	Organises the reviewing of texts
	Supervises and controls illustration work
	Designs the layout
	Performs / checks the typesetting
	Ensures that galley proofs are proofread
	Performs / checks photoengraving work
	Defines provisional layout in more detail
	Prepares the dummy make-up
	Prepares the file to submit to the ministry for the imprimatur
	Decides how to print and finish the book
	Selects a printer
	Has a final quotation drawn up for printing and finishing
	Selects and orders the desired paper from the printer
	Submits the job to the printer for printing
	Checks mounting work and gives the printer the go-ahead
	Pays for printing and finishing
	Is in charge of marketing the finished product
	Prepares and ensures the monitoring of the book in the field
Printer	
	Draws up the quotation for printing and finishing work
	Mounts text and illustrations
	Prepares the type forme
	Procures paper and other inputs
	Prints, finishes and delivers the textbook to the publisher as instructed

In either case it is the private publishing house that is really in charge of the production of textbooks: as you will see from the Table 5, it decides whether or not to produce a book and has complete control over production, monitoring and management. It monitors the textbook right up to the reception it is given by pupils and observes the use of the book to make any preparations for reprinting as early as possible.

Production Systems in Developing Countries

In developing countries we find several production systems which differ to a greater or lesser degree from the model described above. The most commonly found types are described below.

National Commercial Production

This system has many similarities with that found in industrialised countries: the ministry stipulates the content matter and may define textbook requirements; then private publishers publish and market these. There is generally no preliminary testing, neither are the textbooks presented to teachers. Thus, as in industrialised countries, it is the market which decides when several different textbooks are available for the same target group.

This system can be found in varying degrees in countries which have managed to establish private publishing capacities, such as Kenya and Nigeria.

State-Run Production

The ministry is in sole charge of textbook production, defining the subject matter to be covered by the education system, identifying textbook requirements and meeting these requirements. Often the ministry entrusts the writing and publishing work to civil servants, while the production and distribution is delegated to parastatals.

In this system too, it is rare for the textbooks to be tested and systematically presented to teachers; they tend to be placed at the disposal of teachers or imposed from above. The textbooks produced in this way are generally cheap, but very often the quality is poor, especially in terms of the graphics (illustrations and layout).

This system has been used in Tanzania, Madagascar and other African states.

National and/or Foreign Commercial Production

The ministry turns to other countries to provide the textbooks it needs to attain pre-determined objectives. There are two possible scenarios: either the publishers contacted produce the textbooks with national support; the manuscript is often produced by a team of local civil servants while the layout, illustrations and printing are executed outside the country; or the publisher simply imports its own textbooks and markets these. These are almost always attractive books, but they are also expensive, and the contents, particularly the graphics, are not always very well adapted to the country in question.

The large English and French publishers can thus be found to a greater or lesser degree in many African countries.

Several systems may co-exist: we may find private national production of text-books in European languages alongside state production of national-language books, where the financial rewards are not attractive enough for private publishers.

Each of these systems has its own shortcomings, but some specialists recommend moving towards the first of these; they claim that competition must be honed and the private sector encouraged to take part in the textbook sector, wherever possible⁹. It is true that the production of textbooks demands creativity, profitability and functionality which a civil service can rarely provide, but at the same time commercially produced textbooks, whether they are

produced in the country or abroad, primarily address the well-off urban classes, with purchasing power and easily accessible without a complicated distribution network; poor pupils who represent the majority of the target group, or those living in rural areas which may be very isolated, are thus *de facto* discounted.

Let us for the moment just note that although authors naturally cannot modify the system within which they operate, it is imperative for them to understand the features of that system. This will allow them to understand the respective tasks of the entities involved in textbook production, and thus to define their own role.

3. Publishing Specialists

Let us sum up what we have learned so far: we have analysed the technical steps involved in producing textbooks and the various production systems currently in use. Nevertheless, before they can identify their own role, authors must be familiar with the actors involved in the publishing chain. They must know who is responsible and who performs which work, who plans, directs and controls each stage and who performs the hands-on work.

So, let us then look at the role of publishing specialists, again making a distinction between common practice in large commercial publishing houses and in developing countries.

A very few developing countries use the private sector to meet their national needs. Most of them rely on state or parastatal structures, or call on foreign assistance

The quality of textbooks in industrialised countries is first and foremost a reflection of the way publishing houses are organised

Organisation of a Commercial Publishing House

As you have seen it is the publisher who directs the writing and production of textbooks in industrialised countries. To meet his many-fold responsibilities, he needs managers who are responsible for various aspects of the process and technicians to perform the work required. Let us look in more detail at these two groups and their respective duties.

Managers

The publisher firstly surrounds himself with a team of managers, the main duties of whom are listed in Table 6.

6. Main Duties of Managers within a Publishing House	
Manager	Duties
Publishing Manager	
	Identifies textbook production project
	Defines contents and how they are to be arranged
	Selects authors and contracts them
	Supervises and reviews authors' contributions
	Analyses the way the book is used in schools
Art Director	
	Decides on the graphics for the textbook
	Selects illustrators and photographers
	Supervises and reviews the illustrators' and photographers' contributions
	Designs and manages the layout
	Selects typographic characteristics
Production Manager	
	Defines physical features of the textbook
	Estimates the production costs
	Plans and monitors production
	Obtains quotations from production companies
	Monitors typesetting and photoengraving work
	Monitors printing and finishing work
Commercial Manager	
	Performs market analysis
	Calculates approximate price of finished book
	Runs promotion campaigns
	Organises storage, distribution, marketing

Book Technicians

When a publisher first decides to publish a book it is not only these four people who swing into action; to perform the necessary work, they mobilise a veritable army of specialists, both within and outside the publishing house.

One does not always find the same technicians in every publishing house of course, but in general it is fair to say that the four managers whose tasks we have just described delegate some of their work to specialists; the form this collaboration takes is illustrated in Table 7.

7. Main Duties of Technicians within a Publishing House	
Technicians	Duties
Working with the Publishing Manager	
Educational consultants	Help specify pedagogical features of textbook
Authors	Write and take stock of manuscript; run preliminary tests; read proofs
Proof readers	Correct manuscript; read proofs
Publisher's secretary	Prepares manuscript
Working with the Art Director	
Authors	Help with the graphic concept
Illustrators / photographers	Help design graphics, produce illustrations and check the quality of photoengraving
Documentation expert	Researches the necessary illustrated documents
Layout artist	Visualises the design, finalises layout; produces make-up
Graphic artist	Decides on typographic characteristics of text
Working with the Production Manager	
Publisher's secretary	Prepares elements to be printed, texts and illustrations
	Monitors ongoing activities (quotations, planning, contacts with type-setter, photoengraver and printer)
Working with the Commercial Manager	
Promotion Manager	Designs and realises the promotion and marketing campaign for the textbook
Sales Manager	Ensures that the textbook is available to readers
Distribution Manager	Ships textbooks to points of sale

Publishing Specialists in Developing Countries

Let us now look at the situation in developing countries. The first difference is in the number of actors involved; generally textbook production teams are very much smaller in developing countries. Yet, if we leave aside the few countries with well developed private-sector publishing capacities, the main difference between the two systems is the absence of the publisher or the failure to appreciate the importance of his role, and the inevitable redistribution of the duties that would otherwise be assumed by the publisher among the other actors involved, in particular the authors and the printer: the former often do a great deal more than devising the concept and writing textbooks and the latter, whose role should be limited to the actual printing, is frequently forced to take on some of the publisher's duties too.

In some countries, it is fair to say that there is no national publishing capacity, in either the state or the private sector. In others private publishers address only that part of the population that constitutes a potentially interesting market, even if this is a tiny minority of the population: this was true in Peru, for instance, where, at the start of the 1980s private publishing houses were geared only to Spanish-language publications, and were not interested in local languages. In still other countries the role of the publisher is not understood or is not known: often the ministry is not properly informed about the role of the publisher, while authors do not readily accept him, seeing him as one more irritating control between them and the printer, which only swings into action once the manuscript is finished.

The lack of understanding of the publishing chain, the wariness of the authors vis à vis the publishing unit, the lack of technical know-how of insufficiently trained publishing managers and the difficulties of coordinating the work of different departments can thus lead to an astonishing redistribution of responsibility: as we will see, the authors, and even the printer frequently see themselves forced to take on responsibility for considerably more than their traditional tasks.

Redefining the Traditional Role of Publishing Specialists

In those countries where textbook production is in the hands of a public-sector publishing house or a publishing unit within the Ministry of Education, the roles and responsibilities of the various actors are not always clearly defined.

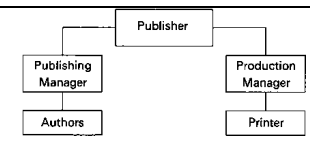
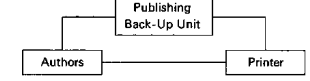
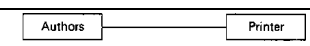
There are two common scenarios. In the first case the officials, often with no well-founded publishing skills, approach the printer directly with only a manuscript, i.e. a text rather than an imposition scheme including the final layout and illustrations - and expect him not only to print the textbook, but also to take on responsibility for publishing, or to contract this work out. The traditional publishing chain is thus reversed, since the publisher, rather than supervising work from the start, is only consulted at the end, if at all.

In the second scenario the officials entrust the authors with the overall responsibility; without realising the enormity of their demands, they expect the authors to produce a product which can be handed to the printer, and printed immediately. The authors have no choice but to assume some or all of the work of the publisher, without necessarily being up to the task.

To allow you to pinpoint the duties of the publisher, the author and the printer in industrialised countries and those characteristic of the production system within which you operate we have summed them up in visual form in Table 8. The illustration indicates how the traditional roles can be modified and the repercussions this has on the work of the various actors.

Rough Orientation of Textbook Projects

It is interesting to see how donors who have specialised in textbook production react to a situation of this sort, or to put it more succinctly, how they organise their large-scale textbook projects. Their current efforts seem to pursue two objectives on different time-scales.

8. Main Duties of Principal Actors in the Publishing Chain	
In industrialised countries textbook authors are at hands-on level. Their duties are limited and well defined; they have no contact with the printer.	 <pre> graph TD Publisher --> PM[Publishing Manager] Publisher --> Pm[Production Manager] PM --> Authors Pm --> Printer </pre>
Where there is a publishing unit its duties are sometimes ill defined or little understood; in this set up the publisher, authors and printer may be in contact with one another without any clear definition of their respective duties.	 <pre> graph TD PBU[Publishing Back-Up Unit] --> Authors PBU --> Printer </pre>
In some developing countries which have no publishing capacity, the authors must assume some publishing responsibility and as such have direct contact to the printer, with whom they share responsibility for publishing.	 <pre> graph TD Authors --- Printer </pre>

In developing countries the traditional roles of the publisher, the authors and the printer are re-allocated

It is just as urgent to set up a publishing unit as to train authors

Those who give precedence to a short-term strategy, aim firstly to respond to urgent needs, in some cases the total absence of textbooks in schools. To this end they focus first on the authors who they train in basic publishing techniques, wherever there is no publishing capacity in the country in question, to allow them to produce didactic materials against the odds. They generally manage, and the quality of the materials produced is acceptable, if not always excellent. We should, however, specify that when the projects come to an end, having trained authors and given the country the textbooks it needs, the authors cannot continue their work within a strong publishing structure and the know-how generally vanishes rapidly. When new textbooks are needed, generally about five years down the line, the whole process starts from scratch.

By contrast, those who accord priority to a medium- or long-term solution attempt to establish a sound publishing system, and there can be no doubt that this is what we ought to aim for; they focus on providing training for technicians and the various other book-related occupations, rather than on producing textbooks immediately. This formula too has its risks, of course, the two main ones being staff changes, with the result that individuals are given several years of training as technicians and then leave before they have ever worked productively, and the lack of competent authors on whom trained publishers can rely. In other words there is a risk of producing well trained publishers - who then have nothing to publish.

We would like to stress that, in view of the sheer scale of the demand for textbooks on the one hand, and the general lack of publishing skills on the other, these apparently divergent efforts should always be considered as complementary approaches, and pursued energetically without delay in many developing countries.

Responsibilities of Authors in Developing Countries

Your responsibilities as authors will depend on the production system within which you work

Some of you may think that the previous section is more relevant for decision-makers at national level and international donors than for authors, in view of the fact that it is difficult if not impossible for the latter to modify the textbook production system. But you will not be able to define your own duties until you have a firm grasp of the stages involved in producing a textbook - and this is the *sine qua non* for you to commence and indeed one day finish your work.

The tasks of textbook authors in developing countries are not always identical in every country. In some cases you will be working within a structure which allows you to concentrate on writing a manuscript on the basis of a pre-defined concept; in others you will have to perform certain publishing work in addition to this, perhaps even all the publishing work. In other words your tasks will always be defined in terms of the publishing support at hand: the less efficient the publishing unit, the more you will have to do, to the point that in some cases you could justifiably be termed "publisher-authors"¹⁰.

Let us take stock at this point. Try to call to mind the various stages involved in the production of a textbook, and the entities and specialists needed to perform the relevant work. Then identify the support that you can expect in your work. In this way you can define what the officials implicitly expect of you most of the time, gauge the scope and complexity of the work, accept it and, in the ideal situation, optimise it.

Supervision and Training

But how, you will ask, can we as authors or future authors of textbooks measure up to responsibilities of this magnitude? How can we become the "publisher-authors" that the country needs, when we are at best "apprentice authors"? If, as is generally the case, you are former teachers, pedagogical advisers or even school inspectors you will only be able to meet your commitments if you have technical supervision, or if you have had pertinent training.

We feel that several years of on-the-job experience, plus technical supervision, perhaps in conjunction with internships together make for the best training.

This was, in any case, our experience during the first few years of the Tef'Boky Project. To mitigate the shortages of textbooks the authors in the project learned their craft on the job, producing textbooks with the assistance of specialists; they were then able to systematise their knowledge with the help of short training courses in Madagascar and overseas¹¹.

4. In Conclusion

Beyond the Textbook

Whatever the system within which they operate, i.e. whatever the tasks expected of them, groups of authors in developing countries always play a crucial part in ensuring a supply of high-quality textbooks, as we have seen in this chapter. But, however heavy this workload alone, their responsibility is rarely limited to producing textbooks; in fact it is generally the authors who must prepare the way so that their product is well received by teachers and parents.

Information and awareness measures must always be handled by a ministerial department specialised in this field, which will mean that it has the equipment it required. When the textbooks reflect curricular changes, for instance if a national language has replaced a European language as the language of instruction, these activities go well beyond the scope of a small group of authors who already have more work than they can handle. Nevertheless they are often left with the responsibility. The authors then find themselves faced with the choice of concentrating all their energy on writing and not preparing people for the launch of the new material, thus running the risk that the finished product will be rejected by insufficiently well informed users, or of adding one more string to their bow and running the risk of producing mediocre and superficial books¹².

Before you start work on the textbook we thus suggest that you analyse the school situation and gauge the textbook's chances of being accepted without further action; this will enable you to make provision, if necessary, for information and awareness measures, without which your heavy workload as authors may be pointless.

Make preparations for the launch of your textbook from the very start of the project

Notes

¹ See Seguin R. *L'élaboration des manuels scolaires*, p. 15-19. Paris: UNESCO, 1989 for information on the translation and adaptation of textbooks. It should be noted that textbooks for the primary level can rarely be translated, especially reading books in the national language; the rest of this guide should explain why.

² Cf. Read A. *A guide to textbook project design and preparation*. Washington D.C.: World Bank, 1986 for information on the preparation of textbook projects.

³ "Tetik'asa famolavolana boky malagasy ho an'ny sekoly" (Tef'Boky) can be roughly translated as the "Malagasy Textbook Workshop".

⁴ The Unité d'Etude et de Recherche Pédagogique (UERP) (Pedagogical Research and Study Unit) within the Ministry of Education.

⁵ "A minimum of six years is required to write a manuscript, print, publish and distribute the finished book, and it is reasonable to plan an overall period of some ten years, given the time required for preliminary studies, planning, recruitment and, in many cases, training". In: Seguin R., op. cit. p. 6.

⁶ The date of printing a large run of *Tongavola* is not indicated; it was delayed for several years again for reasons which are neither technical - the final version has been ready to print since 1991 - nor financial - the funds required have been pledged - in nature. This situation is unfortunately by no means exceptional. Even when technical and financial preconditions are met, there is no guarantee that the work will be published, far less than this will happen within the planned time-scale.

⁷ We should specify that the Ministry of Education is not always responsible for the tasks described hereafter; in very decentralised systems, these may be delegated to a body at

regional level, or to research institutes. To simplify the issue though, we will not take these cases into account here.

⁸ The situation varies from one country to another. In Germany, for instance, publishers complain that they have to submit their textbooks to the relevant ministry for approval at regular intervals, in some cases every two years (In: Institut für Bildungsmedien. *Die kleine Schulbuchschule*. Frankfurt am Main, 1989). In France on the other hand “there are no official textbooks any more than there are textbooks that are recommended or approved by the Ministry of Education” (A. Savary. In: Huot H. *Dans la jungle des manuels scolaires*, p. 145. Paris: Seuil, 1989).

⁹ Buchan A. et al *Etudes sur le secteur du livre en Afrique*, op. cit. p. 13.

¹⁰ As we noted at several points during the Tef'Boky Project this lack of transparency often worries authors, who find it difficult to pinpoint their own part within the system as a result of their poorly defined publishing responsibilities.

¹¹ A separate publication, scheduled to be printed in 1995, deals with the experience gained in the Tef'Boky Project regarding training authors in developing countries who are responsible for producing textbooks for the primary level.

¹² The Tef'Boky Project managed to undertake some information and awareness measures (producing posters, calendars, supplementary reading materials and even a film), but this increased the workload of the authors, although they were only indirectly involved, such that they were pushed to the absolute limit.

Recommended Reading

Textbook Production in Industrialised Countries

BERTHELOT, J. *Petit guide à l'usage des auteurs débutants et de quelques autres*. Paris: Hachette, 1991

BERTHELOT, J. *Edition et techniques éditoriales*. Paris: Hachette Supérieur, 1992

FINELSC, G. AND SASSIER, D. *Un livre, des hommes. De l'auteur au lecteur*. Paris: Nathan, 1988

GREENFELD, H. *Bücher wachsen nicht auf Bäumen*. Munich: Ellerman, 1979

GROUPE DE LA CITE INTERNATIONALE *Le livre. Sa conception, sa réalisation. Documentation*. Paris, undated

HUOT, H. *Dans la jungle des manuels scolaires*. Paris: Seuil, 1989

LAPOINTE, C. *Le livre du livre*. Paris: Gallimard, 1987

Textbook Production in Developing Countries

ALTBACH, P.G. et al *Textbooks in the Third World. Policy, content and context*. New York: Garland, 1988

BUCHAN, A., DENNING, C. AND READ, T. *Etudes sur le secteur du livre en Afrique*. Washington D.C.: World Bank, 1991

CHATRY-KOMAREK, M. *Libros de lectura para niños de lengua vernácula. A partir de una experiencia en el Altiplano peruano*. Eschborn: GTZ Schriftenreihe No. 193, 1987

FARRELL, J.P. AND HEYNEMAN, S.P. (Ed.) *Textbooks in the Developing World*. Washington D.C.: World Bank, 1989

GUDSCHINSKY, S. *Manual de alfabetización para pueblos prealfabetas*. Mexico: SEP/ Setentas, 1984

RICHAUDEAU, F. *Conception et production des manuels scolaires. Guide pratique*. Paris: UNESCO, 1979

SEGUIN, R. *L'élaboration des manuels scolaires. Guide méthodologique*. Paris: UNESCO, 1989

To Sum Up

In industrialised countries textbooks constitute an important market. Private-sector publishers write, produce and market them. The laws of the market force them to act professionally; the textbooks are produced by highly-qualified specialists who stick exactly to the various steps in the publishing chain. As a result the purchaser can choose any one of a number of textbooks which are comparable in terms of quality and price.

In developing countries, the demand for textbooks is enormous, but textbook publishers are rarely able to produce enough books of a suitable quality as rapidly as needed. The central problem appears to be that we have not yet managed to adapt the publishing chain, which has proved so valuable in industrialised countries, to an environment which either fails to appreciate the importance of this chain, or lacks the human, financial and technical resources to put it properly into practice.

This guide addresses novice authors, who have been instructed to produce textbooks that are adapted to the teaching and learning conditions in their own country, at relatively short notice. We aim to strengthen their skills as authors, by giving them a basic understanding of the publishing process. The first chapter introduced the steps involved in systematic textbook production, to allow them to identify, by contrast, the steps needed to produce textbooks that are specially tailored to the needs and resources of their own country. We then looked at the organisation of large publishing houses and the responsibility of the professionals involved in textbook production, to help them pinpoint their own place within the system, and thus allow them to develop and react accordingly.

We believe that this is vital prior knowledge for all teams expected to produce textbooks in developing countries, if they are to bring their work to a successful conclusion.



The Authors

Once the feasibility study has been performed, work can start on producing the textbook; the first stage involves examining the context within which the book is to be used.

This field work marks the start of the work which, in most instances, will fall to you. You thus enter the scene and can expect to be there for a long time before the curtain falls. Given the length and importance of the work awaiting you, we feel that it is crucial to look at how you can best prepare yourself intellectually and in terms of materials, before going on to describe this work.

Please note that we will not be describing in detail the infrastructure you will need to do your work properly. Some of you will find a four-wheel-drive vehicle vital to undertake your preliminary research work, and later for the testing and evaluation of your material; it will be important for all of you to have a room where you can meet and access to a computer.

But, while recognising the importance of this infrastructure, we will not dwell on it, partly because the working conditions vary enormously from one team to another and your scope to influence your own working conditions is limited, and partly because the infrastructure alone is never responsible for the quality or mediocrity of a textbook¹. What is decisive is the profile of the authors and their working methods, two factors to which this short chapter is dedicated.

Another general information chapter with no immediate application, some of you will think, impatient to find the “recipes”. If this applies to you, try and force yourself to read this chapter nevertheless; as you will have realised after reading the first chapter, the responsibility that you will have to assume demands special preparations.

1. Profile

Whether they write for primary or secondary level, textbook authors are not given specialised training, but those writing for primary level appear to be the least well prepared: they often have only the skills they have acquired on the job, in front of a class².

Yet, as you will have realised after reading the first chapter, all authors have a great responsibility which ought to preclude any amateurism. Those whose duties go beyond writing and touch on publishing work in particular should never improvise. They must be professionals, well prepared for the unique nature of their work and fully aware of the skills and behaviour they will need to adopt if they are to perform their work satisfactorily.

Before looking at the preliminary research phase then, let us examine the profile of the textbook author, which will allow you to identify the skills and attitudes so essential in your situation.

Basic Know-How

The essential know-how for all textbook authors regardless of the level and the subject they write for, and the system within which they operate are as follows:

- Well-founded knowledge of their subject; this may be mathematics, science, linguistics or any other subject;
- Skills in adapting didactic material to suit the profile of future users;
- The ability to write texts addressing both children and adults on a pre-defined topic within the space allocated;

- The ability to devise good exercises; exercises where the subject matter corresponds to both the attainment targets and to the demands of the layout;
- A basic understanding of the publishing chain; in particular as regards the essentials and possibilities open to various agents involved in the course of textbook production.

Indispensable Attitudes and Behaviour

Where there are recognised publishing facilities the above know-how will generally suffice to ensure that a textbook is produced: it will allow authors to prepare a manuscript of good enough quality to be published by the relevant unit, then printed and finished.

For authors without the back-up of a good publishing team, on the other hand, this know-how alone may well not be enough to allow them to meet all their commitments; if they are to take on the numerous and complex duties they will then be expected to perform, they will also have to acquire certain attitudes and behaviour, the most important of which are described below.

Know-how and attitudes are more important for an author than a highly developed infrastructure

Step One - Learn to work in a group

Ability to Work in a Group

It has become indispensable for everybody to learn to work in a group, since the trend is for more and more books to be written by a team of authors rather than by an individual.

But when the publishing unit is weak, and the authors bear most of the responsibility for the textbook, genuine team work is vital given the sheer scope of the work to be performed - and it is not easy to organise: agreement on even hotly contested points must be hammered out by the team, among equals as it were, without having recourse to a higher-level arbiter in the person of the publisher.

If you find yourself in this situation, where the responsibility of the publishing unit is limited to word processing, you must learn to create an atmosphere of tolerance and openness which will allow all team members to optimise their inputs. To this end, you will have to learn to formulate criticism or at least reservations, to argue a point, to listen to observations of others and take them into account, and finally to identify fully with the common decision.

Otherwise your work runs the risk of being slowed down or even paralysed well before the book ever goes to press.

Multi-Sectoral Attitude

Decisions regarding didactic material always demand a cross-sectoral approach, whether they concern the publishing side or the domain of the authors.

If, for instance you wish to define the sort of materials needed to learn to write, you should look not only at the pedagogical and didactic factors (What is the best aid for learning to write? What is the best one for teaching writing? Exercise book or slate?), but also at the financial considerations (How much does an individual exercise book cost? And a slate? How many parents will be willing to pay this amount?), the logistics (Will it be possible to supply the schools with exercise books in time every year?), the working conditions (Are classrooms suitably furnished to allow pupils to write in exercise books? Would a slate which is rigid and can thus be used by pupils working without tables or desks, not be more practical?), the production considerations (Can slates be produced on the spot?), etc.

The less effective the publishing unit, the more you will have to take into account factors other

than the purely pedagogical and didactic. If you were to refuse to look beyond the confines of your own subject-specific knowledge you would be failing in your duties, and you would run the risk of either paralysing production or producing didactic materials that are poorly adapted to the actual environment in which they are to be used.

You should thus be prepared to look beyond your subject and become familiar with new fields, to look at a subject from several different aspects and compare these before taking an appropriate decision. You do not have to learn everything and know everything, but you should be attentive and well informed enough to react in time, and you should know who to turn to when you need assistance.

Step Two - Look beyond the narrow confines of your subject and examine the environment within which the book is to be used

Openness to Innovation

The ability and willingness to innovate will be every bit as important for you as the skills laid out above.

If you intend to produce textbooks that are in line with the demands and the resources of the country you will often have to go your own way: you will not find many valuable discussion partners in large publishing houses which have different options and face their own problems; equally it will be difficult to find contacts in developing countries, where it is rare to find individuals who have sought out new paths and devised original solutions to specific problems. Indeed, authors of textbooks in developing countries tend to base their work more or less openly on foreign models³.

You must thus be open to new ideas: you should devise specially tailored answers to specific problems rather than looking for tried and tested recipes. You will have to fight against preconceived ideas, make your own hypotheses, and verify, check and analyse these. In fact you will have to become a researcher more than anything else. Otherwise what you produce will not be adapted to the needs of your country; it will be but a pale copy of existing materials.

Be open to new ideas and look for appropriate solutions as a group

Accepting the Constraints

Finally, you will have to know how to accept major constraints and make the most of the leeway you have.

The single most important constraint will be the financial one; as textbook authors you must always distinguish between what is desirable and what is feasible for your country, and must decide on the didactic material without losing sight of the financial implications for those concerned.

If necessary, you must thus accept that your book be printed in two colours, or even in monochrome; or you must refuse to write a textbook if the country cannot finance it, concentrating instead on a teachers' guide, if this helps achieve pre-defined goals. There is no place in a group of authors in a developing country for anyone who refuses to accept constraints, or who imposes unreasonable financial burdens on others in the name of artistic freedom⁴.

If we have dwelt on the attitudes and behaviour demanded of textbook authors in developing countries it is because the importance of these factors is almost always underestimated, not only by education authorities, but also by those concerned. It is felt that a good teacher will automatically be a good author, for instance, ignoring the fact that the skills demanded of a teacher are quite different to those demanded of a writer or a publisher. We are astonished when otherwise brilliant specialists produce mediocre textbooks, poorly adapted to the target group, and when authors prove unable to properly identify the root cause of this mediocrity,

which would allow them to remedy it.

These considerations aim to help you gear your work from the very start to the production system within which you operate. Do not let them discourage you, use them, even if they only help you to analyse the tensions which will inevitably arise in your group, and to remedy these more easily.

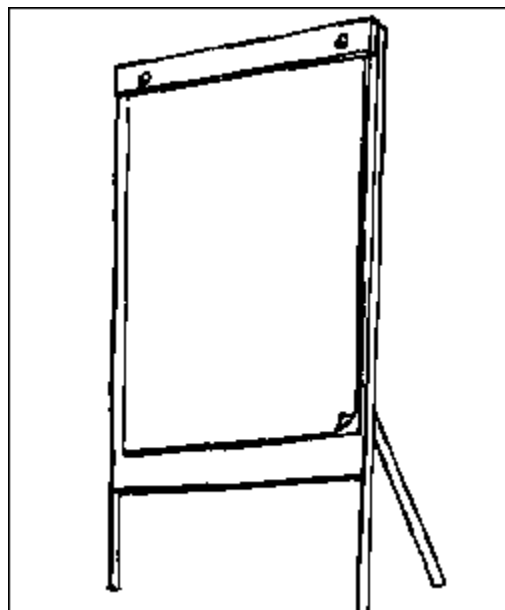
2. Tools of the Trade

The skills and knowledge described above are not always in themselves enough to allow authors to perform their work satisfactorily.

They will rapidly realise that it is not easy to work in a group, and that it becomes more and more cumbersome to consult the accumulated mountain of notes, references, decisions, texts and exercises when they need to. Paper and pencils are not enough: they need a high-performance tool, which will allow them to optimise the inputs and participation of each team member and to manage the data properly; an instrument which both enhances group dynamics and boosts the quality of the group's work.

Having practised it ourselves for several years, we recommend that you get used to a system of visualising your contributions. This is a working method which is inexpensive and easy to understand - if not always to use in practice. In our experience, displaying your work visually from the research phase to the preparation of the printer's copy is a much better guarantee of quality than any super de luxe electronic equipment.

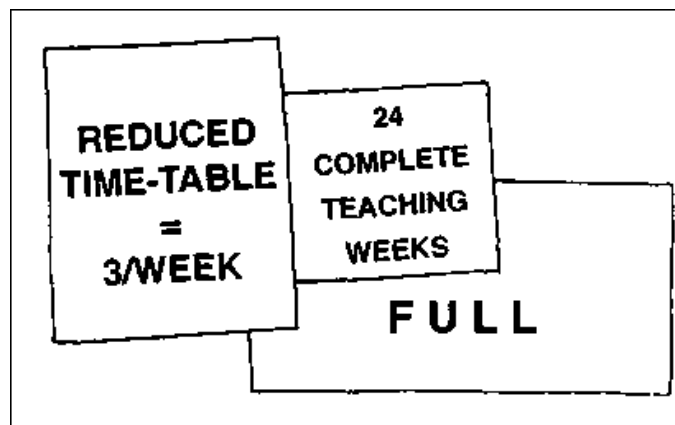
Here are the tools you will need and the various steps involved in the procedure explained in a few words and several illustrations.



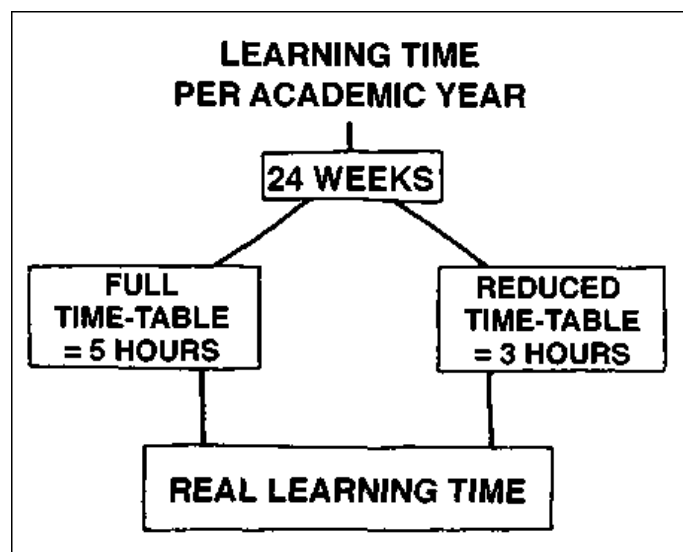
1. Preparing your tools: You should obtain a pin board made of porous material if possible, as well as several boxes of round-headed pins, a large number of cardboard strips or packing paper, the size of which will depend on the type of contributions. You will also need some marker pens and biros.



2. Identifying the topic: The topic you wish to work on should be defined verbally by the complete group. This way you avoid having to explain to those who have just arrived what has been decided on.



3. Initial brainstorming: Now you can start the written work. Allow about ten minutes for each participant to write cards without attempting to structure his or her contributions: contributions should be printed legibly, taking one card per idea and expressing it in a telegram style using no more than a dozen words.



4. Pinning up provisional contributions: One participant gathers up all the cards one by one

and reads them aloud. He pins them on the pinboard, arranging them in a provisional order. He does not comment on them at this stage, to allow all participants to re-read the cards for themselves. The cards are then taken one by one, corrected, and arranged definitively.

3. In Conclusion

Notes

¹ To convince yourself of the relative importance of the infrastructure for your work, look at books produced some thirty years ago; the quality of some is quite remarkable, and they were produced without much in the way of mechanical aids, and certainly without computers.

What authors at that time managed to do with paper, pencils, scissors, a ruler and some glue, you can manage today. Do not let yourself be discouraged by a lack of materials or tools. They are important, but not essential.

² This does not only apply to authors in developing countries, but also to some in industrialised countries; H. Huot notes that in France, the textbooks for lower secondary schools and primary schools, "are written by authors, most of whom have no specific qualifications in the subject for which they claim to speak, who are often not even aware of the most accessible specialised works, and who are incapable of gauging the risk or possible consequences of certain presentations or explanations." In: *Dans la jungle des manuels scolaires*, op cit. p. 60-61.

³ Cf. Le Thanh Khoi: *L'enseignement en Afrique et le modèle européen*. In: Coquery-Vildrovitch C. and Forest A. (Ed). *Décolonisation et nouvelle dépendance*. Lille: Presses Universitaires de Lille.

⁴ The vanity and desire of some authors to produce a splendid-looking book explain some wrong decisions, such as opting for extremely expensive 4-colour printing where there is no real reason for this, or the production of a pupils' book which is sometimes thought to offer greater prestige than a teachers' guide, although the latter would have served the pedagogical purpose and would have been considerably less expensive to produce.

Although these mistakes, which are easy to understand, are not fatal in a rich country, which can afford certain luxuries, they are dangerous in poorer countries, which cannot afford to make a mistake in this field, so every effort must be made to avoid them.

Recommended Reading

BERGER, G. AND BRUNSWIC, E. *L'éducateur et l'approche systémique*. Paris: UNESCO, 1984

CROZIER, M. AND FRIEDBERG, E. *L'acteur et le système*. Paris: Seuil, 1977

FERRY, G. *La pratique du travail en groupe*. Paris: Bordas, 1985

ZALTMAN, G., DUNCAN, R. AND HOLBEK, J. *Innovations and organizations*. New York: Wiley, 1973

To Sum Up

In industrialised countries the responsibilities of textbook authors are well-defined and relatively limited; in developing countries, they tend to be greater, even if they are not always well defined.

This is why authors in developing countries must prepare themselves particularly well for the work ahead.

Firstly it is, of course, vital for them to have certain basic know-how: there can be no question of planning to produce learning materials for mathematics, for instance, if the group cannot count on the support of a specialist in this subject.

Authors will also need certain attitudes, the most important being the ability to work in a group, a cross-sectoral attitude, an openness to new ideas and the ability to work within the given constraints. These are the attitudes which will enable authors to design, write and produce high-quality textbooks, that are genuinely adapted to the needs and resources of the country in question. They are all important, but we would like to stress the need for every textbook author in developing countries to be open to new ideas. In these countries a good textbook author cannot avoid being a researcher, looking for original answers to unique problems, where there are no cut and dried solutions.

Certain tools can be a great help to ensure the systematic development of textbooks; the methodical visual display of team members' contributions and of the main decisions made at the end of each session improves group dynamics and enhances the quality of the team's work.



Preliminary Research

Your first task if you have just been made responsible for producing textbooks is to conduct preliminary research. You will not be able to throw yourself into the conceptual phase without first identifying the actual needs and possibilities of the future users.

Preliminary research work must always be rigorous and meticulous, for the results will be of capital importance for the textbook in the making. If we compare our textbook to a building, the first phase is equivalent to the foundations; the data that you collect not only on the process of teaching and learning at classroom level and on the relevant subject matter, but also on the school environment as a whole ought to give you a solid base on which to build your book. The research work will almost invariably be complex and wide-ranging, and will generally require at least one year. It is thus quite impossible to describe this work exhaustively here; we will give you only a few pointers which you can adapt to your own situation.

To avoid discouraging you in any way, we would like to point out from the outset that the research work described here is only possible with special technical and financial inputs: you should analyse the recommendations, use them as best you can, and continue to push forward, even if you are forced to admit that it is impossible to apply the model in the form presented here. You should also note that this work is only essential for the first book in a series: the data thus gathered are generally sufficient to allow you to produce the following books, verifying only individual points on the ground.

First task of the author - Analyse teaching and learning conditions

Get to know everybody involved in the textbook to ensure that the finished product will be appropriate

1. The Need for Research

Is it really essential to undertake preliminary research, some of you will ask. Does it have to be so complex and so wide-ranging in view of the urgent need for new textbooks?

Before you can conduct optimum research work, you must first be convinced that it is absolutely vital. You must understand that the textbook is part of a complex environment, that it affects groups which must be examined if the finished textbook is to be in line with their needs and possibilities.

To convince yourself of the need for preliminary research look firstly at the list of those involved in the main stages of the publishing chain in a state production system, for instance.

9. The textbook and its environment	
Stages	Main individuals/groups involved
Decision to produce textbook	
	Education authorities
	Curriculum unit
	Publishing unit
Writing and illustrating	
	Authors
	Illustrators
	Publishing unit
Production	
	Printer

Distribution
Distribution unit
Modalities of textbook utilisation
Parents
Education authorities
Presentation to users
Training unit
Authors
Utilisation of finished textbook
Teachers
Pupils
Inspectors and educational advisers

Field research work demands human resources, time and technical and financial inputs

2. General Overview

Highly developed planning and organisation are needed to gather data on the school environment. For a period of several months you will have to manage relatively extensive human, technical and financial resources.

Given the complexity and scope of this work, we will start with a general overview, which will enable you to evaluate the extent and nature of the research work and the ways and means of conducting it. This will give you a frame of reference to allow you to put the more detailed explanations which follow within the overall context.

To this end, we will summarise the approach taken in the Tef'Boky Project, the main phases of work and the duration of each phase. These are listed in Table 10.

10. Field Study in Madagascar
In November 1986 the German-Malagasy Tef'Boky Project started the work that was to allow it to produce appropriate didactic material for reading and writing in Malagasy. Given the dearth of information available on primary schools in Madagascar and the lack of any evaluation of the few existing textbooks in Malagasy that did previously exist, the project saw itself forced to prepare a field study, select a representative area in order to analyse conditions in the country's schools, develop the materials on this basis, and be able to test it at these schools at a later date. Here is a brief summary of the work involved and an outline of how it was performed.
Listing factors to be examined (2 months)
The newly formed working group had to learn how to work as a group, become familiar with an alien form of visualisation and tackle a relatively new field of research all at once.
By way of introduction, the apprentice authors identified the factors and criteria they felt were important to determine the quality of a textbook in general; this was a sort of introduction to the field of textbook production.
Then they listed the factors that it was imperative to analyse in the Malagasy context to ensure that the new materials were in line with the needs and possibilities of the future users.
Devising research instruments (2 months)
Among the factors to be analysed the team checked information already available and planned the analysis thereof.
The team then devised and developed research instruments for missing data which would have to be gathered in the field, primarily in rural schools and villages: these mostly took the form of questionnaires and interview guides for adults (animateurs, teachers and parents), tests and guidelines for recording pupils' responses.
These instruments were pre-tested at several schools in a peri-urban zone before being used in the field.

Identifying a test zone (1 month)
Based on a number of criteria, the apprentice authors selected a representative sample of schools which fairly reflected teaching and learning conditions in the country.
The sample involved 40 schools in one educational district. Preliminary research for the textbooks to be produced was conducted at these schools and the pilot version of the books was later tested and evaluated there.
Gathering data (2 months)
The entire team of apprentice authors and the three animateurs working in the test zone helped gather data in schools and villages. After one week of familiarising themselves with the research instruments, each member of the team was able to work independently examining one school per week.
Processing and interpreting data (4 months)
The data thus collected was processed, systematised and interpreted; the authors performed some of this work and delegated the rest to students and teachers (transcription of all recordings, counting the graphemes in the language, identifying words most frequently used by children, etc.).
Publishing data (3 months)
The authors prepared a fairly complete preliminary working paper to allow them to proceed with the conceptual phase without further delay.
Parallel to the conceptual work, a final document was drawn up and submitted to the education authorities for their information.

3. Taking Stock

Having looked at this overview of what preliminary research can, and often does, entail within the scope of textbook production projects, let us return to the beginning. The first step must be to identify the factors that must be examined, evaluated or quantified before you can devise a systematic concept for new didactic materials.

It is important that you adopt a methodical approach, to guarantee that the information you compile is as complete as possible. There are two reasons for this: firstly, this is the best way to ensure that you do not have to come back to this phase later, interrupting the conceptual phase which is long and complex enough without these irritations, and secondly any omissions and oversights you make at this stage may spawn serious errors in the concept, development and production of the textbook.

The factors to be analysed will not, logically, be the same in every case. To avoid major omissions, we suggest a two-stage approach. Firstly, identify the factors which are always important, i.e. factors related to the teaching and learning conditions. Secondly look at the supplementary factors, which are pertinent for the case in hand.

Conditions in the Schools

Start by identifying the factors to be analysed

Whatever the class and the subject for which the textbook is intended, the authors must examine in detail the conditions under which the teaching and learning process takes place.

This analysis must go beyond the narrow confines of the school itself, and look at the educational environment as a whole. We would recommend that you first collect data on the political and educational framework in the country, before looking at the way education is organised, i.e. the day-to-day life of teachers and pupils. Finally you should round off this information by analysing the various target groups affected by the new materials, which will include not only the educational authorities, (primarily inspectors and educational advisers) but also the teachers, pupils and parents.

Having seen ourselves how one automatically tends to devise voluminous instruments that are not sufficiently well-targeted, we recommend that you systematically eliminate all factors

that are not relevant for the material to be produced.

Table 11 shows the factors that should generally be examined before designing didactic material for primary level. To allow you to gauge the importance of these factors we have outlined the main reasons for including them in the analysis, and the repercussions they are likely to have on the new material.

11. Main factors to analyse regarding conditions in schools		
Field	Factor	Relevance for new materials
Political and educational framework		
Educational legislation		General direction, e.g. language of instruction
	Curriculum ¹	Learning targets
	Official guidelines	Officially recommended learning methods
	Organisational set-up of ministry	Chances of having innovative material approved
How education is organised		
	Length of academic year	Volume of subject matter that can be covered
	Length of school week	Ditto
	Physical framework	
	Storage space, furnishings	Quantity and type of materials available
	Lighting	Level of legibility required in textbook
	Blackboard	Blackboard-based learning activities
	Ratio of teachers-pupils	Group and individual learning activities
	No. of pupils per class	Ditto
	No. of classes per teacher	Didactic pointers in the teachers' guide
	Teachers' working conditions	
	Administrative responsibilities	Adaptation of material to availability of teacher
	Didactic back-up materials	Preparing teachers to accept innovative ideas
	Pupils' working conditions	
	Location of school	Suitable format for pupil to carry to and from school
	Ratio tables-chairs to pupils	Format of material, composition of set
	No. of textbooks available	Pertinence of textbook production project
	Other teaching materials	Attitudes of parents to school
	Individual equipment	Identification of suitable writing tools
Target Groups		
	Educational advisers	
	Professional training	Level of innovation of material to be defined
	Official duties	in terms of educational advisers' ability and
	Supplementary duties	capacity to train teachers
	Means of performing work (e.g. transport)	
	Teachers	
	Level of education	Degree of complexity innovation of material
	Professional training	Contents and presentation of teachers' guide
	Social background	Ditto
	Integration in community	Ditto
	Linguistic skills	Ditto
	Motivation	Degree of innovation of materials
	Pupils	
	Social background	Topics contained in pupils' material
	Focus of interest	Ditto
	Linguistic skills	Linguistic contents of book, instructions to teacher
	Previous knowledge, results in subject	Level and complexity of content matter
	Economic duties	Topic-related and pedagogical contents
	Parents	
	Socio-linguistic features	Language taught/language of instruction
	Level of education	Active support for children's education
	Economic resources	Cost of material
	Attitude to school	Planning information/awareness activities

Textbook Projects

Ideally in an educational project, the authors will be able to rely on a complete and reliable feasibility study; where this is the case they will be able to devise material appropriate for the needs and resources of the country on the basis of an examination of pre-defined factors. But authors may be called upon to produce a textbook on the basis of a less than perfect feasibility study, or where no real study has been conducted. In these cases they must also examine the project environment to avoid the pitfall of producing inappropriate material. Often this will not involve performing or repeating an entire feasibility study, but merely checking certain factors.

Table 12 lists some of the factors and aspects which we think are relevant in most cases, along with some essential questions which should be answered. Once again do not let this list discourage you; identify the factors that are important in your own specific case and, if you feel that a really exhaustive procedure is called for, consult the literature on the preparation of textbook projects that you will find listed at the end of this chapter.

Take a methodical approach: you can use the results of research based on this table as the foundation of your textbook

Schools and National Languages

As we mentioned above², in 1985, 86 local languages were used as languages of instruction in sub-Saharan Africa. There are thus many textbook authors on the African continent working with a national language.

If this applies to you, it is vital that your preliminary analysis of the situation includes a linguistic component. You will have to find ways of solving the problems of using languages which are for the most part still little standardised in the classroom.

Again, the situation will vary from one case to another. Some languages, like Malagasy whose alphabet has existed in its present form for more than 150 years, have had an adequate system of transcription for many years, while others use several different alphabets, none of which is really adapted to the needs of primary schools. Other still have not yet been written.

Let us look at the steps to take if one of these languages is to be the language of instruction and/or the language taught.

Fundamental linguistic analyses

When we are dealing with a national language that has not yet been written, UNESCO³ recommends that work be structured in Table 13 (page 52).

- Conduct a phonemic analysis which will be used as the basis for a scientific alphabet
- Conduct a grammatical analysis
- Prepare a preliminary lexicon.

12. Factors regarding the environment of a textbook project	
Factors	Aspects
Writing Conditions	
Capacities of the curriculum unit	Will the unit undertake any revision of the curriculum, or will you be officially charged with this work?
Capacities of the publishing unit	Can the publishing unit perform all the tasks expected of it? What is the quality of its services?
Responsibilities of the group of authors	Which of the many activities presented in the first chapter are to be entrusted to the authors? Are any other bodies involved in producing textbooks for primary level?
Legal aspects	How are royalties and copyright regulated?
Production Conditions	
Identification of sources of funding	Is the financing of the pilot version guaranteed? Is financing guaranteed or are there prospects of obtaining finance for the final version?
Size of the market	Are there reliable statistics on the number of schools and the number of pupils per class? Are there forecasts of the growth in school rolls? Has any research been performed on the financial status of parents?
Definition of conditions of use	Do you plan to produce one textbook for two or three pupils, or one per pupil? Will the books be bought or borrowed? Do you intend to set up a revolving fund?
Capacity and quality of preparations for printing	Does the printer have the capacity for typesetting? Photoengraving?
Capacity and quality of printing	Is the printer's equipment suitable for textbook printing? Is it suitable for printing large runs while maintaining high quality? Are the technicians properly trained? Can the printer operate competitively?
Inputs	Are all inputs required available on the spot? What is the quality like? Must paper be imported? Ink? Printing plates? etc.
Finishing	Is the printer equipped to finish books? In particular, what type of binding can he produce? Can the printer cope with a large run? Can he pack the books properly?
Distribution Conditions	
National statistics	Does the unit in charge of distribution have reliable information on the school roll by school and region?
Precise information on transport routes	Are the precise itineraries known for the points to be served?
Organisational capacities	Does the unit have the ability to devise a distribution strategy? And to put it into practice?
Technical and financial resources	Does it have the means of transport to ensure distribution and/or the financial resources to have the materials distributed?
Teacher Training	
Capacities of the teacher training unit	Who is to plan the necessary training activities to accompany the introduction of the revised material? Who is to conduct the training?
Capacities of future trainers	What is the level of training, experience and motivation of those in charge of teacher training?
Technical and financial resources	What technical back-up resources and what budget does the teacher training unit have at its disposal?

For this work you will need qualified staff and a great deal of time; it can take up to five years to devise an alphabet⁴. That is why this work must never be part of a textbook project; it is an indispensable prerequisite for launching projects in this field.

Preliminary linguistic work

Although it is out of the question for you as authors to transcribe a language, every time you use a local language you should examine the linguistic and socio-linguistic factors that are likely to have an impact on the teaching and learning process. On the following pages you will find a list of factors which you should pay attention to during this preliminary research phase, whatever the degree of standardisation of the local language you intend to use in your textbook⁵.

Once again, you should adapt our suggestions to the case in hand; try to identify the factors of vital importance which must be examined without delay and those which are neither really urgent nor so important. You should realise that at this stage of your work, it is less a question of making immediate decisions regarding writing or vocabulary than of gathering data which will allow you to make the relevant decisions at a later date, in particular during the writing phase when you will periodically come up against linguistic difficulties.

No research work is an island: every issue will have immediately applicable consequences for your textbook

In the absence of a feasibility study, you must also examine the environment in which the textbook will be used

Examine the writing, production and distribution conditions particularly closely

13. Textbooks in a National Language
Political Preconditions
Language of instruction
Is the national language in question officially recognised as a/the language of instruction for native speakers?
Languages taught
Which language or languages are taught? Will the national language be used purely as a medium of instruction, or will it also be one of the languages taught? Will primary school pupils also learn a world language? If so, as from which class and in what way?
Making the alphabet official
Is the alphabet of the national language you intend to use officially recognised? Is it accepted as such by users of the language? Do other alphabets co-exist with this one, and are they also known and used?
Promotion of the national language
Is there a clear political will to support work in the national language, and your work in particular? Are there any political activities to support national languages that go beyond mere declarations of intent?
Scientific Factors
Ensuring a pertinent and suitable alphabet
Does the alphabet selected for use in textbooks correspond to a scientific analysis of the language?
Functionality of the alphabet
Is the method of writing selected suitable for school-level learning or is it more in line with the needs of researchers?
Respecting variants
Have dialect variants been identified? Can the alphabet respond satisfactorily to their special features? What line do you intend to take in textbooks destined for nationwide use?
Conformity to other alphabets
Does the alphabet used for the national language in question differ from those used for any other national languages without good reason? Does it differ from the world language used in the country?
Spelling
Are there conventions for hyphenation? For contractions? For spelling loan words taken from a world language?

Punctuation
Has any work been done on standardising punctuation? Do the punctuation rules differ from those used by the world language used in the country for no good reason?
Institutional Factors
Training teachers
Does the training of primary school teachers include the study of the national language in question?
On-the-job training for teachers
Are there in-service training programmes to prepare teachers to teach in the national language in question?
Reference works
Is there a research institute responsible for producing reference books concerning the national language in question, in particular, grammar books and basic dictionaries?
Terminology
Is a unit or a body responsible for enriching the language, and in particular, for creating the technical and scientific terms that are vital for consistent, diversified, precise instruction? Are efforts being made to standardise these new terms?
Standardisation
Is a unit or a body responsible for standardising the national language, in particular, for proposing punctuation rules corresponding to the superstructure of the language?
Practical aspects
Characters
Can the characters used to write the national language in question be found on a standard keyboard?

4. Planning

The preceding phase will have enabled you to identify those factors which will have to be examined before you start writing your material.

You are thus now in a position to plan research activities; you should start by setting the deadlines, even if it is difficult to gauge the time that will be needed for certain activities, such as selecting a representative sample, and you may be forced to adjust your schedule at a later date.

To avoid getting bogged down in poorly prepared work or work that is not in line with your needs and your possibilities, you should concentrate on compiling as exact a schedule as possible, taking the following factors into account.

If you work in a local language, analyse the linguistic environment of the textbook

Base planning on practical options rather than wishful thinking

Institutional Priorities

The first textbook will require the greatest amount of research work, but it is also the book that will be most impatiently awaited. It is thus not unheard of for the institutions concerned, the Ministry of Education, and sometimes the donor to exert pressure on the authors to accelerate the preliminary research phase and complete the long awaited textbook rapidly.

It is not uncommon for an insufficiently standardised language to become the language of instruction, and for the scope of linguistic work to be underestimated by the education authorities - who nevertheless intend to meet their political commitments at any price.

You should of course plan your activities taking into account these pressures, but we have seen time and time again that ill-considered haste never pays off: the speed at which the work was performed is quickly forgotten, and all that remains are the shortcomings of the finished

book. You should then consider carefully to what extent and how you are prepared to take into account institutional pressure, to ensure that the quality of your research work is not jeopardised.

Human Resources

You must also take into account the people involved when you plan activities.

The Authors

Field research will have to be performed by all the members of your team; even those who consider themselves well enough informed about the school situation must take part.

In this way you will ensure that all team members expand, deepen and update their knowledge, and that the group begins to come together, before going on to devise the material on the basis of a uniform level of information. If you do not harmonise points of view in the field you risk running into serious disagreements afterwards, particularly when you come to devise your material.

All authors without exception should be involved in field research work

Short-term consultants

It is rare for a group of authors to have the necessary skills to perform all preliminary research work independently. You should thus identify the aspects requiring skills only available outside your team.

In line with your needs you should make provisions for the sporadic help of a linguist if you are going to have to write textbooks in a national language which has still not been sufficiently standardised, of a sociologist to prepare the field research work, of amateurs who are familiar with the test area where you aim to gather data or of a statistician who will help you to process and interpret certain results.

It is up to you to identify the areas where you will need occasional assistance from other professionals. You must then contact the latter and ensure that they will be available when required.

Technical and Financial Resources

The research work always demands a minimum of technical and financial resources. You should thus evaluate the costs of the operation and not start planning until you are sure that you have the resources you need. In most cases you will need office supplies, a four-wheel-drive vehicle, enough funds to cover the costs of the mission and the fees for short-term experts.

Scope of Data to be Collected

When the schedule is drawn up for your activities, you will see the scope. One often tends to underestimate the time needed to process the data collected in the field, particularly when recordings have to be transcribed.

If you have to work in a national language which is still not commonly written, and you intend to record information, plan the recordings with a view to the follow-up work, i.e.

Transcription

Under these circumstances you had better calculate one hour to transcribe five minutes of recorded speech. If you delegate this work to individuals whose only qualification is verbal mastery of the language you must also think about approaching an experienced linguist to revise the transcriptions.

Analysis

The recordings, thus transcribed, will then be analysed in various ways. If you aim to produce a reading book you will have to pinpoint the words most frequently used by children, classify these words by length, origin (from a dialect variant, loan words, etc.), among other things. If you are unable to do this by computer, you will have to perform the work manually which will take some time.

Data Processing

All the data will have to be typed so that the authors can use it, before they start work on devising didactic material; this is a long and exacting secretarial task, the scope of which is often underestimated by authors.

You should bear in mind, when you draw up a schedule for your activities, that you will have to correct all the data that you collect. There is no point in conducting extensive research in the field if you cannot use the information you gather. You should thus always distinguish between what is possible, and what is desirable but unrealistic. Identify the research work which you cannot reasonably conduct and the work which can be postponed without any major impacts on your first didactic materials⁶.

At the end of this phase you will have two schedules, the first of which will be a short-term schedule for the research phase. It will indicate the main research activities, the deadlines, the persons responsible and the evaluation of costs.

The second, medium-term schedule will concern the actual writing and production of the materials.

It is important to gear your work from the outset to the start of a specific academic year. You should decide on the first year of introduction and make absolutely certain that you do not miss it, and perhaps the date of publication for any second set of materials. You should then inform the education authorities as soon as possible.

Refer back to the first chapter and look at Table 3 (the birth of the *Garabola* textbook) as a yardstick to help you gauge how much time you should allow.

5. Instruments

The objective of the current phase is to develop the research tools which will allow you to examine, quantify or verify the data required.

The approach taken in the field of social sciences to define an analytical model is discussed in several specialised publications; if concepts, hypotheses and indicators are completely new ground for you, it would certainly be a good idea to consult a sociologist or to refer to the literature on this subject listed at the end of this chapter.

But you should not forget that research in the field should never be an end in itself, it is merely a means to an end - which is the production of textbooks that are in line with the needs and resources of the country. You should thus attempt to surround yourselves with the skills which will prevent you as far as possible falling into the traps of woolliness or arbitrariness during your research, but do not lose sight of the fact that you are above all authors of textbooks. Your primary target group is the pupils who are waiting for their books, while university researchers must be relegated to second place if they appear at all on your list. Let us retain our pragmatic approach and again make the distinction between what is desirable - a piece of work which is scientifically unassailable and will require a lot of time and experienced staff - and what is possible under the given circumstances. It is up to you to make the best of the situation, even if your resources are minimal (e.g. novice researchers, or the fact that you are

not given all the professional back-up you would like).

Within the scope of this guide, we will introduce you to a relatively simple way to identify research tools which you can use in most cases.

**Prepare functional and well-targeted tools
Consult specialised books to find out about tools**

Data to be Verified in the Office and in the Field

You should start by differentiating between the data available in the office and those you will have to verify in the field, before going on to define the activities needed to analyse each of these.

14. Initial Break-Down of Tasks to be Performed
Data to be verified in the office - Activities
Education Policy
Analyse official guidelines ⁷
1985 Official Curricula
Analyse the subject "Malagasy"
Analyse the targets for the first grade
Analyse the profile of the pupil at the end of primary education
Textbooks Used
Identify the main textbooks used
Define criteria to evaluate these
Analyse the most widely used in class
Pedagogical Directives
Inventorise, collect, exploit

Table 14 was drawn up to this end by the Tef'Boky Project. It could be useful to you for reference purposes.

Hypotheses, Indicators and Instruments

The above list still tells you nothing about how to study each element. You should proceed as follows to determine how to approach the matter, i.e. how to identify the sort of instrument you will need.

Firstly you should draw up your hypotheses; these are sort of provisional answers, formulated in a relatively summary fashion, which you propose for each element to be studied, and which will later have to be verified in the field.

Secondly, you should define the indicators which will allow you to verify these hypotheses; indicators should be factors which are easily observable, verifiable or quantifiable.

Thirdly, and lastly, you should select the instruments which will allow you to verify the indicators you have just identified.

Let us take an example to better illustrate the links between hypotheses, indicators and instruments. Let us assume that you are required to verify that the pupils achieve the attainment target for handwriting at the end of the first grade, i.e. that they are able to copy a sentence on the basis of a model in cursive style, forming the letters legibly and understanding the meaning of what they write. You could then devise the following table.

Developing Instruments

You have identified the research instruments you need - now you can develop these.

Adapt the instruments for the case in hand

15. Identification of Instruments
Hypothesis: Pupils achieve the official attainment targets for handwriting at the end of their first year of schooling.
Indicators Instruments
Time allocated for handwriting in the official time-table
Analysis of official curriculum
Importance attached to handwriting by teacher
Examination of pupils' exercise books
Questionnaires
Interviews with teachers
Classroom observations
Importance attached to handwriting by parents
Inventory of equipment purchased by parents and available in classroom
Quality of handwriting
Tests involving copying a text
Spelling of certain common words
Tests involving dictation of words
Comprehension of texts copied by pupils
Tests involving the comprehension of a text

If you have little experience in the subject we recommend that you seek the support of a specialist. It is not easy to prepare instruments that are both appropriate for the survey conditions and targeted so as to give you the information you require.

Within the scope of this publication we will limit ourselves to giving a few practical hints and some examples taken from the work of the Tef'Boky Project.

Research Conditions

Instruments should firstly be designed with the investigators in mind. Sometimes you will have to involve teachers or educational advisers in your work, particularly as regards interviewing parents. You must thus design instruments on the assumption that however willing they are, they are novices when it comes to investigating, and will need tailor-made instruments, especially if you expect them to work relatively independently.

The instruments must, of course, also be tailored to the needs of those interviewed. It is up to you to identify instruments which will neither shock nor intimidate adults and children who are not familiar with investigations.

Finally you must take into account the conditions surrounding your research work, and take a pragmatic approach. If you have to be on the move for weeks on end, for instance, use only instruments that you can transport - no vast packages of tests and questionnaires. Sometimes you will not be able to use recordings because the logistics preclude this. To illustrate this, we have reproduced below a few pages taken from the investigation conducted in 1986-1987 by the Tef'Boky Project. Examine them carefully and identify the precautions taken at that time to ensure a minimum of uniformity of investigation conditions and to guarantee precise results - and see how you can adapt these to suit your own circumstances⁸.

**Do not underestimate the importance of physical and logistical considerations
Nothing is too self-evident to ensure that the instruments are properly used**

Preliminary Testing

You now have research instruments, but no guarantee that they are precise enough or suitably tailored to your investigators and to the people investigated to give you the data you need.

For this reason you should organise a preliminary test run with the instruments, especially those aiming to evaluate school attainment levels. We recommend a test run in at least two schools offering teaching and learning conditions that can be considered representative for the country as a whole, which will usually mean moving away from urban areas.

To ensure that your instruments really work as intended, you may have to modify them, and then organise a second test run. This may prove impossible however. In our experience every expedition demands time, human resources, funds and organisation, and it is rare for projects to have the free time and the resources for a second test run.

Select a sample for your investigations

The Final Instruments

You are now ready for the final step in preparing your instruments. Modify them on the basis of the preliminary test runs and prepare a sufficient quantity for the number of villages and/or schools which you should now identify. It is generally a good idea to put together all the instruments to be used at any one location in one file; this will prevent the investigator misplacing documents or wasting time looking for them in front of those he wishes to interview - an embarrassing situation which can happen to even experienced investigators, and is bound to happen to novices unless you give them proper back-up.

Take great care with attainment tests; the education authorities are always particularly interested in these results

1. List instruments which will guide the investigator.

File No. 2

Instruments for Field Research Work

Investigation conducted by.....

Period: from to.....

List of Instruments

To give you an overview tick the relevant box after each instrument has been used

- | | | |
|-----|---|-----------------------|
| 1. | Instrument Group 1 | |
| | Collecting data at CIRESB | <input type="radio"/> |
| 2. | Instrument Group 2 | |
| | Collecting data from animateurs in the area | <input type="radio"/> |
| 3. | Identification sheet | |
| | The village / the school | <input type="radio"/> |
| 4. | Instrument Group 3 | |
| | Target Group: Grade-one teachers | <input type="radio"/> |
| 5. | Instrument Group 4 | |
| | Target Group: All teachers | <input type="radio"/> |
| 6. | Instrument Group 5 | |
| | Target Group: Parents | <input type="radio"/> |
| 7. | Instrument Group 6 | |
| | Classroom observations (grade one) | <input type="radio"/> |
| 8. | Instrument Group 7 | |
| | Cultural features - inventory | <input type="radio"/> |
| 9. | Instrument Group 8 | |
| | Linguistic, cultural, etc., profile | <input type="radio"/> |
| 10. | Instrument Group 9 | |
| | Aptitude test | <input type="radio"/> |
| 11. | Instrument 10 | |
| | Test-decoding graphic representation | <input type="radio"/> |
| 12. | Instrument 11 | |
| | Reading test | <input type="radio"/> |

- 13. Instrument 12
Concerns and interests of pupils
- 14. Instrument 13
Writing test
- 15. Instrument Group 14
Physical working conditions at the school

2. Recall the hypotheses to be verified on each file

File No. 2

Instruments for Field Research Work

INSTRUMENT GROUP 5
Target Group: Parents
Method: Interview based on questionnaire

QUESTIONNAIRE NO. 1

Objective:

Verify the hypothesis: Parents have low incomes.

Instructions:

1. Take one family per economic stratum (and one form per family)

rich average poor

2. Select families on the basis of information given by teachers, community workers and VIP

1. Family situation

Sex	Number	Members of Family	Dependent Children	
			At School	Not at School
Male				
Female				

Comments:

.....

2. Income-generating activities

Importance	Activity	Agriculture	Animal Production	Crafts	Fishing	Commerce	Miscellaneous
Main activity							
Secondary							
Tertiary							

Comments:

.....

3. Formulate questions precisely and give enough space for answers

File No. 2

Instruments for Field Research Work

- 3.1.4. Course of lesson:
Did the teacher revise subject matter?
Yes No
What did he take as the starting point?
Real-life experience

- Text
- Engraving
- Short story
- Observation
- What phases did he then go through?
- Expression
- Exploitation
- Application
- 3.1.5. Method
- The teacher called on pupils' experience
- The teacher guided pupils
- The teacher developed the subject alone
- A dialogue emerged between teacher and pupils
- between pupils
- 3.1.6. Behaviour and attitude of pupils
- Most pupils participated
- Some pupils participated
- No pupils participated
- Pupils reacted in the following ways
- They wanted to speak come what may
- They waited to be asked
- They responded spontaneously
- They responded hesitantly
- They repeated what the teacher said

Comments:

.....

.....

4. Allow enough space for comments which do not apply to any of the individual questions

SUPPLEMENTARY QUESTION No. 3

Ask the teacher how he goes about solving the major difficulties encountered by pupils learning to read.

.....

.....

.....

.....

IN THIS CONTEXT NOTE THE FEATURES THAT STRUCK YOU MOST IN THE COURSE OF THE READING LESSON, WHICH YOU CONSIDER INTERESTING BUT DID NOT FIT INTO ANY OF THE OTHER QUESTIONS

5. Give investigators written detailed instructions

File No. 2

Instruments for Field Research Work

INSTRUMENT No. 12 Target Group: First-grade pupils Type of Instrument: Test

Objective:

Verification of the hypothesis:

Children in rural areas have specific concerns and interests (2213)

Guide:

1. *Materials:*
Sheets of paper
Pencil
2. *Instructions:*
 - 2.1. Separate children as far as possible to avoid copying
 - 2.2. Hand out per pupil
1 sheet of paper
1 pencil
 - 2.3. Ask the children to draw
 - their favourite *person*: WAIT 10 min.
 - their favourite *animal*: WAIT 10 min.
 - their favourite *thing*: WAIT 10 min.
 - 2.4. At the end go and see *every* child
 - Ask him/her to explain *each* drawing to you.
 - Record the explanation on the sheet of paper (e.g. grand-father, pig, flower)
 - Add the age of the pupil.
 - Collect papers

6. Prepare forms as a record of documents

File No. 2

Instruments for Field Research Work

RECORDING RECORD SHEET

Label your cassettes!

List them in this record sheet and fill in the relevant information!!!

Place	Cassette No.	Date	Child Recorded			Subject
			Male	Female	Age	

16. Testing Attainment Levels
Among your instruments you are bound to have some tests to evaluate the attainment levels of schools. You will test the level of the class for which the new material is to be produced, to determine whether or not the pupils have achieved the official targets in the relevant subject so that the new textbook can be designed to bridge as many of the gaps thus identified as possible and/or to improve existing skills. Design these tests with care, and ensure that they are systematically applied and rigorously interpreted. Since evaluation tests are the focus of an expanding field of research, the suggestions below cannot be considered exhaustive. We will merely look at ten aspects concerning the contents, the mechanism and the interpretation thereof, which we feel are of particular importance.
1. Congruence with objectives
All tests taken together must allow us to determine whether or not the pupil has achieved the attainment targets, as laid down in the official curriculum for the subject and the class concerned.
2. Pertinence of tests
Each test should correspond to one specific, clearly formulated objective which will, in its turn allow you to determine whether or not the general target has been achieved.
3. Reflecting the pupil's world
The tests should only involve elements with which the pupils are familiar, or which are at least known to them.
You should thus naturally avoid tests concerning the arrangement of seats in an aircraft, or the keyboard of a computer, but also other objects which may still not be common in certain places, such as showers or calculators.
4. Interpreting illustrations
Illustrations must be unequivocally understood by pupils. They must correspond to the cultural and psychological perception of the children. Pay special attention to the use of techniques such as movement or perspective which could be wrongly interpreted.
5. Duration
The duration of the tests should take into account the pupils' concentration span.
For instance, 20 - 30 minutes should be allowed for all reading or writing tests in grade one of primary schools, interspersed with short breaks.
6. Preparing the investigators
All investigators should conduct the tests in as similar a way as possible.
There are two ways of preparing investigators; call a meeting of all investigators before leaving to perform the field work, at which the procedure to be followed is repeated once again; and print the instructions on how to conduct each test at the top of each set of tests.
7. Preparing the class
The investigators must be able to create an atmosphere of trust which will allow the pupils to sit the tests in relatively satisfactory conditions.
They must then be fluent in the pupils' native language, and be able to explain clearly to the teacher and then to the pupils what they are expected to do, and encourage them without putting an answer in their mouths; if so decided in advance, they will be able to instruct the teacher such that he can conduct the tests, while the investigators merely observe.
8. Explaining the exercises
Each type of exercise will be introduced on the blackboard, while every pupils should solve it in writing.
To distinguish between understanding the mechanism and the knowledge or skills of the pupil, all exercises should be presented systematically on the blackboard, even where the mechanism appears to be self-evident. The investigators should always check to ensure that they do not present any particular comprehension difficulties.
9. Pupil profile
An individual information slip will give the information needed to interpret the results.
Remember to note the age and sex of the pupil, whether he or she is repeating the year, attendance rate at the school, and if appropriate language skills.
10. Systematic collation and interpretation
To allow you to organise and interpret the results a points system should be drawn up, not when you come to process and interpret the results but when the tests themselves are devised. This system, and the interpretation of the results must be simple and clear enough for the education authorities, who do not necessarily have any statistical training, to understand them.

6. The Sample

Now your instruments are ready, and you can identify a sample of schools in which to use them.

Why do you need a sample? Firstly, of course because it would not be feasible to gather information from every school in the country, and secondly to ensure that the information you obtain is representative for the country as a whole. Certain sample selection techniques will enable you to identify a zone where you can gather reliable data which will reflect the situation throughout the land. Finally, a sample will enable you to count on the long-term support of those concerned; you will need a representative group not only for the preliminary tests, but also to test the materials you produce one after the other. You can only create a good feedback system if the sample selected does not change significantly over a period of several years.

We suggest that you select your sample in two stages, as follows.

Defining Selection Criteria

Select your sample with care; you will have to work there over a period of several years

When you come to select zones and schools as part of your sample, you should firstly define your selection criteria. You must proceed with great care since this sample is going to be your laboratory not only for the research work at this stage, but also for testing the pilot textbooks at a later date.

Again, try to make the best possible use of our hints; look for feasibility, representativeness, sustainability, and the support of those concerned, each of which we will look at in more detail below, and decide which are the most important criteria for you.

A good author is also a good organiser: what is the point in preparing good instruments if you don't know how to manage the application?

Feasibility

A good sample should not overtax the available resources and possibilities of the textbook production project.

Look at

- the geographical proximity of the test zone: the distance between the test zone and the project headquarters should be such that the authors, and perhaps also the animateurs and some teachers can easily commute between the two on a regular basis.
- the ease of access to all the schools selected: you should only select schools which you can reach in one day without major transport problems.
- the size of the sample: the number of schools selected must be limited to allow relatively regular monitoring of each one of them over a period of several years.

Representativeness

A good sample must allow you to gain a global impression similar to that you would have obtained had you been able to look at every individual school in the country. Look at

- the teaching and learning conditions: the teacher to pupil ratio, the number of pupils per class and the number of classes per teacher, as well as the status of the schools (private

or state for instance), must correspond to the national statistics, or where there are none, to the conditions observed in at least two other regions of the country.

- language and culture: the linguistic and cultural practices of the sample must reflect those found at national level. This may be a thorny issue if the global target population is spread over a large area which tends to encourage cultural and linguistic variations.
- the professional and economic profile: the professional occupations and income of those observed within the sample must reflect those of the majority of parents throughout the country.
- experience of scientific work: if the test zone is a preferred area for research and testing, the inhabitants may have adopted certain mechanisms which do not reflect the situation of the population as a whole; if it was the test zone for a failed education project, it would be preferable to select another zone.

Sustainability

To ensure that the sample remains representative over a period of several years you should try to guarantee:

- a sufficiently large initial sample: in the course of time, some villages or some schools will, for various reasons have to be dropped; in some cases the villagers will demand that they are dropped to avoid official visits, in others the sudden and prolonged absence of a teacher or the closure of a school will force you to take this step. To allow for these defections, it is imperative that the initial sample be relatively large.

Agreement and support

Finally, to allow you to conduct your work, you must have the active support of teachers and parents, without which no cooperation is possible, or at least no good cooperation.

Determining your Sample

On the basis of your selection criteria, you should identify a few zones which could be taken as a sample.

You should make your final selection in the field, once you are certain that your choice is a good one and that you have the active support of the education authorities, teachers and parents.

From the outset, you should bear in mind the fact that you stand on the threshold of cooperation between your working group on the one hand and the village and its school on the other, which is likely to last several years. You must thus make an effort to create an appropriate climate of respect and trust.

7. Gathering Data

The quality of your work in the field will naturally depend to a great extent on the quality of your instruments. But, if you ignore the logistical and material aspects of the mission, your instruments, however perfectly honed, may be ineffective.

We would thus suggest that you plan your field trip meticulously and that you evaluate it periodically, in the following way.

Preparing Materials and Logistics

Think of your field research work as a project. To ensure success, the project must be

prepared and implemented systematically; you must plan everything from the daily visit schedule for each investigator down to the last detail that every team member will need if they are to go and live and conduct investigations in a village for several days at a stretch. One oversight may cause serious delays in your already busy schedule.

Field Monitoring

As far as possible you should organise regular visits to check that things are running smoothly for each investigator; they may be faced with surprises, a school may be closed or villagers may be hostile when confronted with an outsider, for instance, which may make it necessary for the investigator to leave the village rapidly.

Regular Comparing of Notes

Regular meetings should be held to discuss progress. A weekly report before returning to the field, for instance, allows the team members to swap the most important information and, if necessary, modify the way some instruments are applied, add more instruments or drop some.

8. Results

You must now process and interpret the results of the data your team have collected in the field. This is a relatively long phase - it took some 4 months in the Tef'Boky Project - and must be conducted rigorously and meticulously if all the work to date is not to be nullified.

Some teams will call on the services of specialists to help them interpret the statistics, or guide them in their linguistic work, for instance. Be this as it may, you should think of the data you have collected as being at once extremely precious and far from complete.

Major Indications

The results that you will obtain will undoubtedly give you relevant information on the school situation. This makes them vitally important and you will find them useful not only for one textbook but for an entire textbook production project.

But you must not fall into the trap of thinking of them as complete and irrefutable. The situation will rarely allow you to do so. For example, let us assume that you have evaluated school attainment levels; your battery of tests may be appropriate and your results differentiated (girls/boys; school-age children/ significantly older pupils; pupils repeating the year/pupils enrolled for the first time; pupils who have lived in the area for some time / pupils who have recently moved to the area; pupils whose mother tongue is the language of the tests/ pupils who are learning the language, etc.) but the population tested will not necessarily remain the same (different pupils sitting different tests, etc.), and neither will the school environment (prolonged absence of the teacher, school closed periodically, etc.).

Since the results you obtain will not give you an image which corresponds exactly with the reality, you will constantly be trying to enrich your data and make them more precise.

You should thus consider your research work in the field as the foundations for the new didactic material, but take care not to stem the flow of information.

During the conceptual phase and after the writing phase you should call on animateurs and some teachers who you will have identified during the field work, to confirm or refute certain results. Afterwards, when the material is tested, you should conduct classroom observation, talk to teachers about using the new material, and finally, of course evaluate the functionality of the material with the help of evaluation tests.

Thus, step by step, you will complete the mosaic of which the field research was the first piece.

The results of the investigation must be complete and precise

9. In Conclusion

A Reference Document

The results of field research work are rarely published; so as not to waste time, the authors generally make do with a preliminary version, on which they base the conceptual work.

Yet, the results should always be documented in the form of a particularly carefully put together publication. Field research work often provides information which is new or which those in authority prefer to overlook in the capital, where major decisions are made. The findings may have repercussion for certain parts of the school system. For instance, the discovery that the actual learning time is half the official learning time could lead the authors to propose a revision of the official attainment targets, a decision which the education authorities would be reluctant to make.

The report on field work here becomes a piece of evidence which the authors can use to explain, justify and even defend some of their proposals; it is a vital document which cannot be replaced by verbal explanations or the raw and uncollated results of research.

It is thus often a good idea to end this phase by publishing a document which should be accepted by the education authorities: having been prepared and implemented with care, the research work must be presented in this document with the necessary professionalism.

Document your research

Notes

¹ According to Landsheere, "A curriculum is a collection of planned activities for instruction, comprising the definition of teaching targets, the content matter, the methods (including evaluation), materials (including textbooks) and the arrangements for suitable training of teaching staff. In *Dictionnaire de l'évaluation et de la recherche en éducation*, p. 65. Paris: PUF.

² Cf. Introduction.

³ Cf. Sow, A.I. *Langues et politique de langues en Afrique Noire*, p. 46. Paris: Nubia/UNESCO, 1977.

⁴ "Some five years are needed to fully describe all the sounds in a language that has never been written." *Langues et politique de langues en Afrique Noire*, op. cit. p. 39.

⁵ In this context the work performed by the German-Peruvian Bilingual Education Project from 1979-1989 provides interesting practical information; cf. Châtry-Komarek M. *Linguistische Faktoren bei der Erstellung von Schulfilmen in Vernakularsprachen*, Osnabrück: Osnabrücker Beiträge zur Sprachtheorie 31, 1985 and Intentos de codificación del quechua en libros escolares. In: Lopez, L.E. and Moya, R. (Ed.) *Pueblos indios, estados y educación*, Lima, 1989.

⁶ In the German-Peruvian Project mentioned above, the authors of the reading books in Quechua would have liked to conduct research to identify punctuation responding to the supra-segmental characteristics of the language, which had not yet been sufficiently standardised. However, because of the lack of resources and time available, they were forced to write the textbooks for the first three grades of primary school without the assistance of this important research.

⁷ The Charter of the Malagasy Socialist Revolution, published in 1975 in Madagascar, advocates democratisation, decentralisation and Malagasisation in education, for instance.

⁸ These instruments prepared in 1986-87, were reproduced in their entirety in the third book of the *Garabola* series, entitled *Les Dossiers I*.

Recommended Reading

Preliminary Work for Textbook Production

AFOLAYAN, A. The Six-Year Primary Project in Nigeria. In: BAMGBOSE, A. *Mother tongue education*. London: Hodder and Stoughton and Paris: The UNESCO Press, 1976

FARREL, J.P. AND HEYNEMAN, S.P. (Ed.) *Textbooks in the Developing World*. Washington D.C.: The World Bank, EDI Seminar Series, 1989

KOMAREK, K. (Ed.) *Les dossiers I*. Eschborn, Antananarivo: GTZ, 1993 READ, A. *A guide to textbook project design and preparation*. Washington D.C.: The World Bank, 1986

RIEDMILLER et al *Diagnóstico sociolingüístico del área quechua del departamento de Puno*. Lima, Peru: Instituto Nacional de Investigación y Desarrollo de la Educación, 1979

Linguistic Research

CALVET, L.J. *La guerre des langues et les politiques linguistiques*. Paris: Payot, 1987

COULMAS, F. *Linguistic minorities and literacy: language policy issues in developing countries*. Berlin: Mouton Publishers, 1984

COULMAS, F. *Sprache und Staat. Studien zur Sprachplanung*. Berlin: W. de Gruyter, 1985

RUBIN, J. Textbook writers and language planning. In: *Language planning*. Rubin J. et al (Ed.) The Hague: Mouton Publishers, 1977

SOW, A.I. *Langues et politique de langues en Afrique Noire*. UNESCO/Nubia, 1977

UNESCO *L'emploi des langues vernaculaires dans l'enseignement*. Paris, 1953

Research Instruments

BOUDON, R. *Les méthodes en sociologie*. Paris: PUF, Coll. "Que sais-je?", 1969

GRAWITZ, M. *Méthode des sciences sociales*. Paris: Dalloz, 1984

QUIVY, R. AND CAMPENHOUDT, L.V. *Manuel de recherche en sciences sociales*. Paris: Bordas, 1988

Preparations for Investigative Work in the Field

CHAMBERS, R. *Développement rural. La pauvreté cachée*. Paris: Karthala, 1990

To Sum Up

When the education authorities of a developing country decide to produce a textbook for primary level, they turn to a group of individuals, generally inspectors and educational advisers, and often expect them to produce a high-quality product within a few months.

Mission impossible. The team which has just been set up, is never able to start the conceptual work immediately. Indeed, this newly born entity will have to conduct a long and difficult mission, the need for which has not generally occurred to the education authorities,

involving the following.

Firstly a genuine working group must be set up, without which no textbook, no matter how mediocre, will see the light of day; this presupposes that the authors identify the mechanisms which will allow every individual to contribute his and her best to the team throughout the several years of in-depth cooperation.

Then, although the authors are almost always recruited from the ranks of the teaching profession, they cannot have the in-depth, complete and systematic knowledge of the target group of the textbook that they will need. They will have to devise, plan and manage research on the lesser known aspects of day-to-day school life, collate these in a systematic form and interpret the results.

Finally, although no decision should ever be taken to produce a textbook before a serious feasibility study has been conducted, and before ensuring that certain preconditions are met - things often look different in practice. The feasibility study is not complete, sometimes no study has been conducted; it is the authors who often have to bridge these gaps.

In the best case scenario, the authors will need one full year to complete their research, the quality of which will largely determine the quality of the book produced, in particular the degree to which it is in line with the needs and possibilities of subsequent users. The sheer scope of this work explains why some teams of authors take only the unprocessed results and race on to the conceptual phase without further delay. But, the results of the research should be scrupulously documented and presented to the education authorities to enable them to understand the pedagogical choices reflected in the textbooks.



The Contents

The conceptual phase is often welcomed as a deliverance by groups of textbook authors: after all these months of research, they believe that they can develop the materials relatively rapidly. More often than not they are disappointed, for months of hard work are needed to produce a textbook or a teachers' guide, as you will see in this chapter.

For didactic reasons, we will break down the conceptual phase into two parts and deal with each part in two separate chapters. The first will look at the contents, while the second focuses on the form, as though the two were not related. In fact the final form and contents of a book emerge from the very interaction between these two fields. Also for didactic reasons we have decided to present the work involved in a more or less logical sequence. Textbook teams generally take a "spiral" approach which allows them to lay down the rough structure of the material progressively. This approach involves taking one step back at regular intervals to ensure that every important factor has been taken into account, to re-analyse these factors, weigh them up again and then make the appropriate decision.

You should read this chapter without losing sight of the fact that the order in which the work is presented will never be followed to the letter in practice.

Take a "spiral" approach to determining the contents of your textbook, always going back to re-examine your decisions and ensure they were correct

1. Time Management

Time is the first aspect you should examine in the conceptual phase. The objective of this phase is to draw up a precise frame of reference for the time effectively allocated to the subject in hand.

Why, you may ask, should our first step be to analyse the time available rather than the contents of the materials we aim to produce? Firstly, because you will not generally have detailed data on the effective learning time dedicated to the subject for which you are producing new materials, and secondly because it would be imprudent to launch yourselves head over heels into an analysis of the contents of the material without first defining the general framework, and in particular the time available for the teaching of the subject in question per academic year and per week.

Consider the following aspects which will allow you to identify the time frame, step by step.

The first element to look at when deciding on the contents of your book - the time factor

The Academic Year

You should start by counting the number of teaching weeks available for the new material. To this end, consult the official curriculum which will probably state the official number of teaching weeks.

This figure is often more a recommendation than an absolute prescription, however. It may not take into account even official interruptions such as exams or once-a-term upgrading meetings for teachers.

To identify the effective length of the academic year you will also have to look at the statistics of the Ministry of Education regarding pupil attendance, and to analyse the data you gathered yourself in the field. There may be a wide discrepancy between the official number of teaching weeks and the number actually observed in the schools. You must then decide on the figure on which you wish to base your textbook.

At this stage you should be aware of the fact that any decision to base your work on the “shortened” school year may have serious repercussions: a reduction in the number of teaching weeks may entail a radical modification of the attainment targets for the entire primary cycle¹.

You should also consider the “legality” of your decisions. Even if you are involved in a pilot project, which by its very nature needs a certain scope for action, you should check to what extent you are required to move within the confines of the official remit and to what extent the education authorities will allow you to work outside an official framework, even if it is considered outmoded or erroneous.

If you feel that you should introduce innovations, try to analyse the situation so that you can decide when to inform the education authorities of the changes introduced in your material: sometimes it may be prudent to keep them informed of your intentions, while under other circumstances new ideas may have a better chance of being accepted if you remain silent until the pilot material is presented. This is a vitally important consideration which applies not only to defining the time-frame, but to the entire conceptual phase of your work.

Time-Table

Having decided on the number of teaching weeks you wish to take into account in your new textbook, you should examine how schools manage this time at present.

In many industrialised countries all pupils follow the same officially prescribed time-table, which has not been substantially altered for several decades; textbook authors do not then generally have to worry much about the time aspect. The situation is often different in developing countries, where pupils do not necessarily all follow the same time-table, and where the official time-table or time-tables is or are not always observed in schools. In some countries, for instance, one group of pupils follows a so-called “full” time-table (5 hours a day), while another group follows the so-called “short” time-table (3 hours a day), and a third group follows an even more seriously slashed time-table with only one or two hours instruction a day².

Sometimes this practice is officially sanctioned, but the existence of several different time-tables rarely has any impact on the level of attainment targets. To avoid any form of discrimination, the education authorities set the same targets for all groups.

Make the distinction between official guidelines and practice in the field

This situation directly affects your work as textbook authors; you will be tacitly expected to produce materials which will allow different target groups to achieve the same targets at the same time.

At this stage you should concentrate on a thorough examination of the official guidelines and the general practice in schools to allow you to decide which timetable or time-tables you wish to take into account in your material. Do not take this decision lightly. If you discover that the majority of your target group follows a short time-table, and you wish to take this into account in the material you produce, you will be opting for a drop in the volume of knowledge to be acquired, which will in turn have repercussions at the level of the education authorities, the teachers, parents and pupils. Do not hesitate then to take one step backwards and check that your decisions are correct, if not legal, correcting them if necessary. You still have time.

Breaking Down the Time-Table

This is the third aspect you will need to bear in mind when determining the contents of your materials and the sequence in which you aim to present them.

Not all official curricula follow the same procedure here; some indicate only the overall time allocated to each subject, while others lay down the time allocated to every component of

every sub-topic, i.e. for the subject “mother tongue” the latter would not only stipulate the time to be allowed for reading, writing and speaking and listening, but would also break down the time reserved for writing into the time earmarked for handwriting, vocabulary, grammar, spelling, conjugation and creative writing. We recommend that you analyse the type of break-down found in your official curriculum.

Sometimes the break-down may surprise you, since it does not correspond to the methodological approach you had intended to take. Let us take an example. If you are to produce reading and writing materials for grade one, would you leave “handwriting” in the field of “art” as prescribed in some countries, or would you integrate it into your textbook, thus saving valuable time? You must of course specify the methodological approach you intend to take, but at this stage it is vital to know which subject “handwriting” is deemed to be part of before you can tackle the issue of the total time allocated for your subject.

These considerations may appear pointless to you if it is only a question of adding half an hour per week to the total time allocation for the subject; they may indeed be of secondary importance when the academic year comprises 35 weeks with a 27-hour school week, but they are anything but superfluous when the pupils spend no more than 15 hours a week at school and the school year is no longer than 24 weeks. Thus, again, take great care making your decision.

We should add that the approach you take must again be tailored to the circumstances. Sometimes you will have to consult with your colleagues who are responsible for producing textbooks for other subjects and/or with the curriculum development unit. Sometimes you will be unable to engage them in a real dialogue and your efforts to harmonise the procedure adopted for various subjects will be doomed to failure such that, to avoid paralysis, you may choose to confront the others with a *fait accompli*³.

Number and Length of Lessons

Now you know the time-table to be respected and the overall time to be taken into account for your material. Would it then be appropriate at this stage to determine the exact number and length of lessons per week reserved for your subject, and to draw up a sort of time-table?

This sort of break-down is generally useful. If the subject in question is the “Mother tongue”, which is traditionally made up of speaking and listening, reading and writing, which tend to overlap, it becomes indispensable. Before you can define the content matter to be learned in each of these sub-topics, you will need a detailed framework. If you are also addressing pupils following different time-tables you will not be able to progress in a coherent manner without determining the number of sessions within each of the time-tables to be taken into account.

Table 17 should help you better understand the importance of our recommendation. It shows how to break down two different time-tables so as to produce a single textbook for all pupils⁴.

Official Teaching Time

This is the last analysis you will have to perform regarding time management in schools⁵.

It is indispensable to know how the teacher officially breaks down his classroom teaching time. To calculate this you must know the number of pupils and classes he is in charge of, and if appropriate the amount of administrative work he has to perform. To this end you should once again consult the official statistics and compare them with your observations in the field.

Check the legality of your decisions regarding the time to be taken into account for your textbook

Write a textbook that addresses all pupils in the grade whatever time-table they follow

17. One Textbook for Two Different Time-Tables

In Madagascar, the official 1985 curricula refer to a short time-table of 3 hours a day and a full time-table of 5 hours a day. It follows that the length of time dedicated to each subject depends on the working conditions: in grade two of primary schools 10 hours and 50 minutes a week are reserved in the full time-table for learning the mother tongue whereas only 5 are available for pupils following the short time-table.

When materials were devised for this grade the authors of the Tef'Boky Project decided to design a "common core" of texts to read, and speaking, listening and writing exercises for all pupils, with supplementary activities for those following the full time-table.

To this end they analysed the time officially allocated to speaking and listening, reading and writing in the two time-tables and drew up two plans so as to allow for at least one lesson of more or less identical length per day for each of these sub-topics, to be followed by all pupils. The temporal framework for the new materials to be produced was as follows:

Sub-topic	Full Time-Table	Short Time-Table
Speaking and listening	5 x 20 min. 5 x 10 min.	5 x 15 min.
Reading	10 x 25 min.	5 x 20 min.
Writing	10 x 25 min.	5 x 25 min.

On the basis of this table the team produced an initial break-down of the subject matter to be taught and learned, i.e.

- in the textbook: for each of the 24 weekly modules, two pages for reading and two pages for writing, each corresponding to five 20-minute lessons, i.e. applicable for all pupils no matter what time-table they follow.
- in the teachers' guide: on the one hand the instructions for exercises common to all pupils, and on the other hand additional speaking and listening, reading and writing activities addressing primarily pupils following the full time-table.

We should underline the fact that it is less the average class size which is important for your textbook than the average number of classes per teacher. Your approach will not change significantly whether there are 30 or 70 pupils in one classroom provided they belong to the same class. On the other hand, if the majority of teachers are in charge of more than one class at once, you must take into account the fact that they will have to teach these classes parallel to one another, which will mean eliminating or strictly limiting certain activities such as exercises or practical work out of doors. You will have to encourage more independent learning from the very start, and give the teachers very detailed instructions on how to manage the class in the teachers' guide. If one-teacher schools make up the majority of your target group this is the only way to take this fact into account.

By the end of this phase you will have identified the temporal framework within which your material will be used; we recommend that you record your results in the way suggested in the second chapter. This will allow you to refer back to them at a glance.

Use the pinboard for all conceptual work

2. Methodological Approach

The aim of this phase is to identify the methodological approach which you intend to adopt.

Why, some of you will ask, should we once again delay looking at the content matter, and look first at the methodology. Before you can rationally decide on the contents, you must lay down the approach, for this can have major repercussions on the volume of knowledge to be acquired.

To illustrate this let us take the example of first-grade mathematics: you must decide whether to accord priority to calculating rather than counting, i.e. if your aim is to teach pupils to find solutions to problems rather than merely to count. This decision will have a direct impact on the subject matter, which you will define in the course of the following phase: in the latter case

the child will have to learn to count to 100, while in the former he will probably only be able to count to 20, or 50 at the limit.

We will not go any deeper into subject-specific considerations here, but we will comment briefly on the points that you should analyse when selecting a methodological approach no matter which subject you are tackling.

Practice in the Schools

Your preliminary field research should have provided you with information about practice in the schools.

You should look at the preferences of teachers of the subject, any weaknesses in the methods generally employed and the principal difficulties encountered on the one hand; on the other you should analyse the level of training of teacher trainers, educational advisers and animateurs and their working conditions, in particular as regards the budget and the material inputs allocated to them for training activities. As we will see later, this information will have a significant impact on your choice of an approach.

Subject-Specific Research

You should not be satisfied with merely adopting the methods currently advocated by teachers, and will thus have to undertake some research into the main trends in international research in the relevant subject. You should consult not only specialised literature, but also textbooks recently published in other countries if possible.

Level of Innovation

Analyse the level of innovation that is likely to be accepted by teachers as regards methodology - the level that they will accept and understand. To this end you will have to be able to bring the scientific findings for your subject into line with the current practices in the schools.

Sometimes you will have to opt for a relatively low level of innovation. If the teachers are poorly trained, and badly paid and if only limited funds have been budgeted for training, the approach you select must be familiar enough to teachers for the textbook to be accepted immediately, and used without a systematic introduction. Any complete break with current practices, which would require a great deal of additional effort on the part of the teachers, is unlikely to be accepted under these circumstances.

We cannot stress the importance of this enough; remember how reading books adopting an overly analytical method, or materials for maths using the theory of sets have failed when introduced to poorly trained teachers, largely as a result of the high level of innovation in terms of methodology.

You should preferably select a traditional methodological approach with a limited level of innovation

3. Defining Content Matter

Having defined the temporal framework and the methodological approach you can now go on to the next phase, which will aim to stipulate the volume of knowledge to be acquired for the subject and grade in question given the practical options and limitations of existing schools on the one hand, and the expectations of those involved on the other.

There are several different aspects which you will need to look at to help you identify the subject matter progressively.

Current Curricula

You should start by analysing the subject matter laid down in the current official curricula.

Don't modify the contents of the official curriculum without first checking how much leeway you have

In industrialised countries authors merely adopt the contents of these curricula without checking whether or not they are relevant. Indeed one of the first criteria applied when evaluating their products is the extent to which it corresponds to these official directions.

In developing countries, however, the situation is not always so clear. It is not unusual to find that the contents of official curricula do not tally with the actual learning conditions for a variety of reasons, such as the country's colonial past. The official learning time, for instance, may be at odds with the actual time available in practice. Where this is the case it is preferable to propose that the official curriculum be modified. Some specialists even recommend that textbook projects should be more or less systematically preceded by a full-scale overhaul of the national curriculum where needed, which can be expected to take some two years⁶.

As textbook authors you are not normally responsible for curricular revision; generally the ministry delegates this task to a special unit. But, experience shows that this is not always the case. Indeed relatively often in developing countries textbook authors find curricula that are hopelessly out of step with the reality of the education system in their country, and the curriculum unit declares itself unable to modify them⁷. Where this is the case, the authors themselves must revise the relevant curricula on a pilot basis to avoid producing textbooks that are inappropriate before they have even been published.

Be that as it may, analyse the situation thoroughly. It is now more important than ever before to gauge the leeway you have and, if you see yourself forced to reduce the volume of content matter covered gird your loins for major repercussions in the classrooms and negative reactions outside - as described below.

Temporal Framework and Learning

If the time effectively available is significantly less than that stipulated in the current curricula, you will doubtless intend to reduce the subject matter to be covered correspondingly. You should, however, bear in mind that a decision of this sort will have major repercussions on the teaching and learning process which we will now look at in more detail.

Do you intend to opt for progression in step with pupils' progress, which is difficult to reconcile with a rigorous learning programme?

The shorter the time effectively available for learning, the more rigorous your planning must be to guarantee that pupils acquire a minimum of knowledge, without which the school would not be meeting its commitments. This inevitable strict planning of learning time does have its advantages: it allows you to produce a detailed methodological guide for teachers, for instance, a sort of script which is bound to be a valuable aid to teachers who are often poorly trained.

This planning does, however, also have one major drawback: the teacher becomes a prisoner of the clock. He cannot take more time or repeat a lesson, without running the risk of jeopardising the entire course. He thus cannot adopt a "mastery" approach, according to which "generally a learning unit should be mastered before progressing to the next unit"⁸. This does not, naturally, mean that he should allow pupils to carry on learning without evaluating their progress. But, after the evaluation he is forced to carry on immediately with the next step, rather like traditional written examinations⁹.

In many developing countries, the rate of absence of pupils is high, primarily as a result of sickness, agricultural work and bad weather; inevitably pupils who have been absent drop

behind and represent a real case of conscience for a teacher hemmed in by a tight schedule: either he proceeds according to the time-table so that the school is worthy of its name, or he deviates from it to focus on pupils who have missed a lot. And how can a teacher confronted by this dilemma be evaluated?

Before you lay down the learning contents, you should then re-examine the temporal frame that you have drawn up; remember that the less time available, the more the teacher is likely to be straight-jacketed by the materials you are going to produce, and act accordingly.

Attitudes of Groups Concerned

When determining the content matter for your textbook you should also take into account the attitudes of the education authorities, teachers and parents. It is not always easy to identify these; in our experience parents and even education authorities are often only able to express their wishes once they have the book in their hands. Nevertheless, if you intend to cut the volume of subject matter covered you can expect the following sorts of reactions:

Education Authorities

- A systematic refusal to accept any significant change to the volume of subject matter
- Spontaneous rejection of “bargain basement education” as compared to neighbouring countries and especially as compared to the curricula of the former colonial master
- Fear of incurring the wrath of parents.

Teachers

- Vague fear of innovation which will inevitably mean curricular change
- Fear of having to deal with angry parents

Parents

- Categorical refusal to accept mass education for their own children.

Curricula in Other Countries

To allow you to have all the information at your fingertips before you make a decision it might be a good idea to compare the content matter you plan to incorporate in your textbook with that found in foreign curricula in both developing countries and industrialised states.

Analysing these documents, looking in particular at the time-frame reserved for teaching and learning, you will often help you become more aware of your own position. Thus, if you are faced with the criticism that you are proposing “bargain basement education”, as you may be if you suggest cutting the volume of knowledge to be acquired, a reference to experience in other countries can help confirm that your decision is correct and help you argue your case in front of hesitant and poorly informed education authorities.

If you consider it vital to reduce the volume of material, you should proceed with caution, and agree to a compromise if necessary. Let us take an example: in grade one at primary school, the figure 100 is often considered a symbol of mathematical knowledge, held dear by teachers and parents alike. If this is the case, and you have limited the subject matter to be covered such that children are expected only to be able to count to 20, you can summarily present the figure 100 at the end of the year. A compromise of this sort may be enough to break down serious resistance to your textbook, resistance which will not always be technical in nature.

4. Fine Tuning

The relevance of a textbook production project should have been verified twice already, once by the feasibility study and once during your field research work.

If you wish to be absolutely certain that it is worthwhile continuing your work, check again at this stage that it is relevant. Some of you will consider this unrealistic in view of the advanced state of the work, but they should bear in mind that it is not necessarily the people who make the textbook who have performed the preliminary research, and they may still not have all the information they need. They should, however, have enough information to allow them to decide whether or not the decision taken by others to produce a textbook is genuinely justified.

If you are in this position, refer to the results of the preliminary investigation and re-examine the following options.

Adoption of an Existing Textbook

Check once more whether there is not already a textbook in your country or another country which has the features you have stipulated, i.e. which covers the relevant volume of material and adopts the methodological approach you have selected.

The production of new didactic material is always so expensive for a country, that you cannot justify starting work until you are absolutely certain that it is indispensable.

Adaptation or Translation

You should also check whether there are not already books which could be adapted or translated. If the negotiation of reproduction or translation rights is not a major problem, this can be a satisfactory compromise, especially if the conditions for writing and producing new material are less than ideal.

If you conclude, having explored these options, that the production of new didactic material really is indispensable, you should pursue your work, laying down attainment targets in line with the volume of knowledge to be acquired, which you have already defined.

Take your inspiration from curricula in other countries, but don't simply adopt these lock, stock and barrel

5. Attainment Targets

During this phase of your work you will draw up the attainment targets for your new material, which will correspond to the contents you have already specified in functional terms.

You may encounter one of two situations here. Either you decide only to clarify and supplement the objectives laid down in the official curricula, without moving far from these, or you will see yourself forced to define objectives that are quite new in full or in part.

Lay down clear attainment targets to allow you to define the contents of your textbook

In either case you should consider that you will be touching on an area where you are probably not experts; if you can, you should thus call on the services of a specialist or at least consult the relevant literature, such as the books listed at the end of this chapter.

For our part we will merely illustrate, in Table 18, the difficulties that can arise when objectives are not properly formulated, and why it is important to remedy these.

6. Set of Materials

You have now defined the content matter that is relevant for you and formulated it as targets. It is time for you to move on to identify the nature of the materials and the number of these materials you are going to produce.

Decide on the composition of the set after careful consideration

You may find this superfluous, since you think you know the answer and will thus be tempted to start work immediately. Beware - the most obvious solution is not always the best one and the choice of the type of materials is always complex and has many consequences. If, for instance, you are attempting to produce reading and writing material for the first grade of the primary cycle, you should not necessarily produce a reading and writing book and a teachers' guide. It may be more appropriate to produce a writing exercise book or complementary pedagogical tools such as letter cards, word cards or pictures.

18. Vague and Incomplete Attainment Targets
In 1987, the authors of the Tef'Boky Project, who were responsible for devising didactic materials for learning to write in grade one of primary school analysed the existing curriculum, which made a distinction between handwriting and written expression. The target for handwriting in the first year was defined as "Knowledge of lower case letters", which was then further explained as: "Knowledge of cursive lower case characters: • Vowels, consonants, figures • Letters and figures of different sizes". During the analysis these directions proved to be so vague that it was not necessary to contravene them, but too imprecise to be translated into didactic materials without the authors making additional decisions. The main questions facing the authors were as follows.
The term "knowledge"
Firstly what exactly is to be achieved? Must pupils be able to form the characters as perfectly as the model? Or is it enough if their writing can be deciphered? What are the conditions needed to achieve this? Have pupils achieved the objective if they write without an example or need they only be able to copy an example they are given? If the latter is the case, is the model also in joined-up writing, or must the pupil be able to translate a printed model into cursive style?
The term "letters"
What exactly is to be achieved? Do we mean initially the 21 letters of the Malagasy alphabet or also the 13 complex graphemes in the language? Are pupils expected to write individual letters, or put them together to form words and sentences? A fundamental point, because the difficulty of joined-up writing is putting the letter together to make a word. In the latter case will pupils have achieved the target if they forget elements or add extra elements, i.e. if they make a spelling error? Or must they write without error? And so on.
To allow them to devise their material, the authors thus added the following details to the original targets: "By the end of grade one the pupils can copy simple, short sentences in Malagasy in joined-up letters on the basis of a model in either joined-up or printed characters; the sentences should be written in lower case characters only and involve only the letters of the alphabet. The pupils should write legibly without errors" (<i>Garabola teachers' guide</i> , 1988, p. 4)

Analyse the situation before deciding which materials would be most suitable. We suggest that you look in particular at the following aspects.

Pedagogical and Didactic Aspects

You should first identify the materials that would be desirable to ensure high quality learning and teaching. The preliminary research should have given you precise information as to the level of training and experience of teachers, which will allow you to identify the tools that

teachers will need to teach the subject in question as well as possible. This research should also enable you to pinpoint the materials that pupils need to raise the level of attainment significantly, given the conditions that you yourself observed in the field.

Financial Aspects

Refer again to the results of your preliminary research, paying particular attention to the following points:

- the number of textbooks which each pupil in the class must purchase and the price of these books;
- the amount that parents are able and willing to pay for their children's school materials;
- the way individual school materials are bought or lent at present, or which are likely to be accepted;
- the way the teachers' materials are acquired;
- the way any large-scale reprints of the new materials will be funded.

You may reconsider your initial decisions in the light of these facts. You may, for instance decide to do without any expendable material, and to dispense with tools except the textbook and the teachers' guide.

We should point out that a textbook is, of course, still the best way to learn to read, but it is not imperative in other subjects. If you are producing materials for mathematics, for instance or, better still, science, you should explore the possibility of producing only a detailed teachers' guide, at least for the first two years of the primary cycle.

A teachers' guide is not, anyway necessarily a dull tome as many first-time authors seem to think; to convince you that it can be interesting look at the two examples below of teachers' guides for mathematics and science. They are designed for primary level, and were produced within the scope of the German-Peruvian Bilingual Education Project and the German-Malagasy Tef'Boky Project respectively.

**In some subjects a teachers' guide is more important than pupils' material
Interchangeable, individual material is always a luxury**

Practical Aspects

Before you decide on the composition of your set of materials, look at the working conditions in schools as you observed them during your preliminary research. Even if it were possible to finance everything planned, it must be possible to use the material and store it in the schools. You should then consider the average number of pupils working at one table, the storage facilities and the existence of a desk where the teacher can open his guide, consulting it at his leisure during the lesson.

In our experience, the lack of storage facilities in the schools is a serious constraint to the production of pedagogical tools which would be very useful. If we take word cards, for instance, they should certainly not be produced as an integral part of learning to read if schools have no cupboard or safe, for they are almost bound to vanish rapidly.

7

Problemas de Matemáticas : Operaciones, medidas, unidades, y conversiones.
 Identificar el peso como una propiedad de los
 objetos, relacionarlo de la forma de unidades de la
 libra.

¿Tukey haytashani hukllatachur unayashanku? (¿Cuán lejos se puede ir al mismo tiempo?)

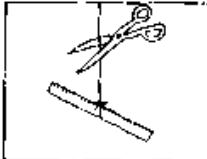
Materiales

Objetos de medida, plásticos, pluma, hojas,
 lana blanca, agujero, regla, cordón, etc.

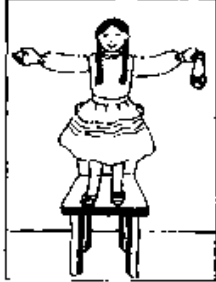
Procedimiento para el desarrollo de la actividad

1. Atar una regla a un cordón y dejar colgar a
 un extremo.

2. ¿Cómo podemos hacer que cuando el objeto
 sea más pesado? ¿Cómo podemos hacer
 que sea más ligero? ¿Cómo podemos hacer
 que sea más pesado? ¿Cómo podemos hacer
 que sea más ligero? ¿Cómo podemos hacer
 que sea más pesado? ¿Cómo podemos hacer
 que sea más ligero?



3. Con estos datos se pueden hacer un gráfico de barras
 y explicar los datos y una tabla con los
 datos.



esto es lo mismo. Luego se puede hacer un
 gráfico de barras.

Discusión

¿Cómo podemos hacer que cuando el objeto
 sea más pesado?

Los niños pueden alargar el cordón o
 cambiar el peso. Pueden hacer, cambiar,
 etc.

Resumen:

Con estos datos se puede hacer un gráfico
 de barras y explicar los datos y una
 tabla con los datos.

FIN ..

Kawsayninchis Fifth-Grade Science Lima-Puno, 1987

No se debe leer este libro sin el consentimiento de los autores.

77-107-11-10

Tanjona

Muestro mis conocimientos sobre los números y operaciones con los números y los gráficos de barras.

Fizotry ny poho

Fizotry ny poho

• ¿Cómo podemos hacer que cuando el objeto sea más pesado? ¿Cómo podemos hacer que sea más ligero? ¿Cómo podemos hacer que sea más pesado? ¿Cómo podemos hacer que sea más ligero?

Las tablas de datos

• ¿Cómo podemos hacer que cuando el objeto sea más pesado? ¿Cómo podemos hacer que sea más ligero? ¿Cómo podemos hacer que sea más pesado? ¿Cómo podemos hacer que sea más ligero?

• ¿Cómo podemos hacer que cuando el objeto sea más pesado? ¿Cómo podemos hacer que sea más ligero? ¿Cómo podemos hacer que sea más pesado? ¿Cómo podemos hacer que sea más ligero?

Las tablas de datos

• ¿Cómo podemos hacer que cuando el objeto sea más pesado? ¿Cómo podemos hacer que sea más ligero? ¿Cómo podemos hacer que sea más pesado? ¿Cómo podemos hacer que sea más ligero?


• ¿Cómo podemos hacer que cuando el objeto sea más pesado? ¿Cómo podemos hacer que sea más ligero? ¿Cómo podemos hacer que sea más pesado? ¿Cómo podemos hacer que sea más ligero?

Las tablas de datos

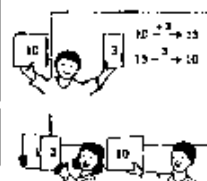
• ¿Cómo podemos hacer que cuando el objeto sea más pesado? ¿Cómo podemos hacer que sea más ligero? ¿Cómo podemos hacer que sea más pesado? ¿Cómo podemos hacer que sea más ligero?

• ¿Cómo podemos hacer que cuando el objeto sea más pesado? ¿Cómo podemos hacer que sea más ligero? ¿Cómo podemos hacer que sea más pesado? ¿Cómo podemos hacer que sea más ligero?

Toromarkita



My knowledge about the numbers and operations is shown in this book. I will show you how to use the numbers and operations to solve problems. I will also show you how to use the numbers and operations to make a bar graph.



Amo saber de los números y las operaciones y cómo usarlos para resolver problemas. Muestro mis conocimientos sobre los números y las operaciones en este libro. También muestro cómo usar los números y las operaciones para hacer un gráfico de barras.

Kajy Mampisaina First-Grade Mathematics Antananarivo, 1993

Logistical Aspects

Even if you are preparing a limited number of pilot copies in the first instance, you should bear in mind the logistics of any subsequent large-scale distribution.

You should thus avoid materials that are difficult to pack, heavy or fragile. If you intend to produce expendable materials you must ascertain that they can be distributed to the schools in good time every year.

Ideally, the field work will have given you some indication as to the sort of material that is needed; in practice, however, this data may not be sufficient. You cannot foresee all the repercussions of the new material from the outset; mistakes can be made in spite of all the precautions taken by authors and they are always serious at this level. This is what happened in the Tef'Boky Project with a writing exercise book, written for beginners, which proved counter-productive. The failure of this exercise book seems to us to provide such a good example of what can go wrong that we have looked at the history of the book in detail in Table 19.

7. Arranging the Subject Matter

Now that you have defined the content material to be covered in the subject and the grade in question, and have decided on the set of materials to be produced, you must determine how you wish to arrange the subject matter within the materials you plan to produce.

19. Conceptual Error
The research work performed in the field by the future textbook authors of the Tef'Boky group revealed that the level achieved in writing in the first grade of primary school was particularly low.
The group then proceeded as follows to systematically identify the reasons for this low level, with a view to designing materials which would be best suited to remedy this serious problem.
1. In the Official Curricula
1.1. Writing is considered to be of secondary importance
1.2. Writing, classed as an artistic discipline, is seen merely as a manual skill, unrelated to speaking and listening or to reading
1.3. Attainment targets are vague
2. Physical Conditions
2.1. There is a lack of furniture (benches and tables).
2.2. There is a lack of working materials (slates, exercise books, pencils).
2.3. There is a lack of visual aids (pictures, exercise books, books) which would help pupils to memorise letters.
2.4. The blackboards, the only visual aids, are of poor quality.
2.5. The large classes preclude teachers checking the progress of individuals.
3. Teacher's Activities
3.1. Teachers are poorly trained; they do not know how to provide perfect models on the blackboard; they have not learned to introduce the writing of characters systematically; they do not put a stop to bad habits in time.
3.2. They have no time to prepare their lessons.
3.3. They have no reference books.
3.4. They do not know how to make the best use of the few documents that do exist.
4. Pupils' Work
4.1. Pupils have not systematically practised finer motor coordination (no official preschool education).
4.2. They see writing as only a senseless and boring copying exercise.
5. Role of Parents
5.1. The parents have never been told how important writing is, and thus do not worry about providing enough indispensable expendables such as, exercise books and pencils.

The best way of tackling so many problems appeared to be individual material for each pupil, with the following features:
A personal exercise book (cf. section 2.2.)
Involving fine motor coordination exercises (cf. section 4.1.)
Allowing pupils to learn to write systematically (cf. section 3.1.)
With writing models (cf. sections 2.3, 2.4., 3.1)
With various types of exercises, to reinforce reading lessons (cf. section 1.2)
With reminders and practical advice for the teacher (cf. sections 3.2, 3.3., 3.4)
Designed like a game (cf. section 4.2)
No more expensive than common exercise books (cf. section 5.1.)
Since the analysis indicated that parents were used to buying at least one writing exercise book and one pencil per year, the authors did not expect any negative reactions on their part. And indeed the exercise book was well received by everyone.
Yet, when the level of attainment was evaluated at the end of the year, the exercise book appeared to have had a counter-productive influence on handwriting: to the surprise of everyone concerned, the level achieved by pupils in the sample was lower than that achieved in the control group, who had learned to write without any special materials! Interviews with the teachers and the analysis of the writing exercise books revealed the following:
The exercise book was an innovation in a context where printed materials are rare; teachers, parents and thus the pupils were reluctant to use such a pretty book as a learning tool. It was thus not used for the exercises, which might "sully" it, but only to verify what had been learned; it was only used when the pupils were sure that they could write well, but at the same time less time was spent practising on slates or in normal exercise books.
The teachers concentrated so fully on the exercise book that they forgot to introduce writing systematically and to monitor pupils' progress. They saw the book as a sort of "monitor" which allowed them to turn their attention to other sections while the first grade were learning to write. Thus pupils' progress was monitored only sporadically, and few notes were made, if any, as can be seen from the exercise books. During the revision phase the exercise book was thus abandoned. The new set of materials is made up of an individual slate, purchased with the help of a World Bank loan, a revised textbook comprising texts for reading and models and exercises for pupils to write, copy and solve on the same slate, and, of course, a teachers' guide.
This new set of materials was fairly well received, but in 1992, some parents who had followed their children learning to read with the help of the exercise book, continued to complain about its withdrawal...

The first step is of course to identify the contents of each component part of the set: if you have decided to produce a textbook and a teachers' guide what information will you put in each of these?

If all pupils follow the same time-table, you will distinguish primarily between the teaching and learning aspects, but if the materials address pupils following different time-tables, and if the majority of your target group are following a reduced time-table, it may be better to reproduce the supplementary exercises for pupils following the full time-table only in the teachers' guide. You should then proceed as follows.

Reduced Time-Table

You should refer to the plan you have already drawn up for the reduced timetable and note the number and length of lessons dedicated to the sub-topic in question.

Stages of Learning

Refer back to the attainment targets and identify the various stages that are indispensable if the targets are to be achieved. Thus, if first-grade pupils with no pre-school experience are learning to write, for instance, the major stages involved could be as follows:

- visual distinction and pre-writing exercises

- systematically learning to form the letters of the alphabet
- copying words and sentences
- composing and copying words
- composing and copying sentences.

Contents and Learning Time

Now you must ascertain that the learning targets can be achieved by all pupils. Those following a reduced time-table in particular must be able to systematically go through all the stages identified above as being indispensable.

Divide up the contents and proceed step by step

Supplementary Subject Matter

Finally you should define the content matter of supplementary activities for pupils following the full time-table.

If we assume that you are tackling the sub-topic “speaking and listening”, for instance, and the target for the week is aural recognition of the sound [o], all pupils must be able to recognise this sound. It is not difficult to imagine a few, simple exercises, such as asking all pupils to clap their hands when the teacher uses this sound in a list of words. For pupils who have more time, you could add supplementary exercises, like guessing games involving words starting with o. The learning target remains unchanged. The exercises will merely reinforce the knowledge acquired by pupils following a full time-table.

Now you can distinguish between the contents that must appear in the textbook, including writing exercises that are crucial for achieving the target and which thus address all pupils, and the supplementary exercises which can easily be placed in the teachers' guide along with the teaching directions.

An oversight when you decide on the composition of your set can be counter-productive

There is no universal formula for organising the contents of a guide

8. Contents of the Textbook

Having worked out the rough break-down of subject matter to be covered by each item of the set, you can go on to the next phase, which aims to organise the contents of the textbook.

This is a complex task, and the teams of authors which we have been able to observe have adopted various procedures. Some organise the contents little by little, feeling their way forward, rather like a jigsaw, while others make do with very rough plans, some of which can be very vague, which they firm up afterwards. Others again lay down in detail at the outset exactly how they plan to organise the content matter.

We do not believe that there is one correct way of organising the content matter, but we will take the liberty of outlining our own experience, in the hope that this will help you to adopt a more systematic approach.

First Break-Down of Contents

Whatever the subject and the grade in question, you should undertake a first rough break-down of the content matter, stipulating the relation between the time unit and the work unit. You may take a week, or a fortnight or a month as your time unit, while the work unit may be a letter, if the subject in question is reading, or a series of numbers in maths. This will give you the skeleton of the textbook as it were.

To illustrate this, the time unit adopted for *Garabola* was a week and the work unit a letter, as you can see from the illustration opposite.

Define the relation between time unit and learning unit

Order of Presentation of Contents

You now have the bare bones of your textbook. This overview is essential, but not in itself enough. Now you must organise the content matter to be learned, as defined by your group. Let us take the example of a reading book, again. If you have decided on the relation of time unit to work unit, you can decide in which order you wish to introduce the letters.

Depending on the material in question, you could select one of three approaches.

A First Reading and Writing Book

The first step is to determine how you intend to present the elements to be learned within the scope of reading lessons, in view of the fact that this will, in part, also determine the sequence for the writing lessons which will run parallel to reading.

The organisation of a first reading book always poses very specific problems. And again, there is no universal formula applicable in every situation and to every language.

Nevertheless we think that it is interesting to consider the approach taken by the Tef'Boky Project faced with the task of organising the schedule for learning the 21 letters of the Malagasy alphabet and the 13 complex graphemes in the language; this experience is illustrated in Table 20.

Fitsinjaram-potoana ao anatin'ny taona

Volana	Herinandro	Foloam-pialan-tesesatra (F. p. t.) na hafa	M/inandro la-sana	Lesona
Oktobra	1	F4	*	*
	2	*	1	Fiomanana ho a/ sekoly
	3	*	2	Fiomanana ho a/ sekoly
	4	*	3	Fiomanana ho a/ sekoly
Novambra	1	*	4	o (vak. = tak. 8-9)
	2	*	5	i (vak. = tak. 10-11)
	3	*	6	a (vak. = tak. 12-13)
	4	*	7	n (vak. = tak. 14-15 ; sor. = tak. 16-17)
Desambra	1	*	8	l (vak. = tak. 18-19 ; sor. = tak. 20-21)
	2	*	9	m (vak. = tak. 22-23 ; sor. = tak. 24-25)
	3	F. p. t. Noely	*	*
	4	F. p. t. Noely	*	*
Janvary	1	F. p. t. Noely	*	*
	2	F4	*	*
	3	*	10	v (vak. = tak. 26-27 ; sor. = tak. 28-29)
	4	*	11	y (vak. = tak. 30-31 ; sor. = tak. 32-33)
Febroary	1	*	12	e (vak. = tak. 34-35 ; sor. = tak. 36-37)
	2	*	13	r (vak. = tak. 38-39 ; sor. = tak. 40-41)
	3	*	14	l (vak. = tak. 42-43 ; sor. = tak. 44-45)
	4	*	15	s (vak. = tak. 48-47 ; sor. = tak. 48-49)
Martsa	1	Andron'ny Sekoly	*	*
	2	*	16	h (vak. = tak. 50-51 ; sor. = tak. 52-53)
	3	*	17	g (vak. = tak. 54-55 ; sor. = tak. 56-57)
	4	F. p. t. Paska	*	*
Aprily	1	F. p. t. Paska	*	*
	2	F4	*	*
	3	*	18	d (vak. = tak. 58-59 ; sor. = tak. 60-61)
	4	*	19	j (vak. = tak. 62-63 ; sor. = tak. 64-65)
May	1	*	20	t (vak. = tak. 66-67 ; sor. = tak. 68-69)
	2	*	21	k (vak. = tak. 70-71 ; sor. = tak. 72-73)
	3	*	22	p (vak. = tak. 74-75 ; sor. = tak. 76-77)
	4	*	23	z (vak. = tak. 78-79 ; sor. = tak. 80-81)
Jona	1	*	24	f (vak. = tak. 82-83 ; sor. = tak. 84-85)
	2	Fanadinana	*	*
	3	Fanadinana	*	*
	4	Fanadinana	*	*

Fitting together several sub-topics

Often the subject is subdivided; then you not only have to organise the sequence of learning one sub-topic, you must also ensure that the various sub-topics interlock as well as possible.

In first-grade maths, for instance, where priority is accorded to arithmetic, although geometrical concepts and measurement are also introduced, the subtopics cannot necessarily interlock on a repetitive basis, as is the case with reading and writing, described above. Indeed you must check in each instance which level of arithmetic is needed to progress in the other sub-topics.

The permanent interaction between the various sub-topics will, in this case, determine the structure of the textbook little by little, like a jigsaw. The best way to work systematically is to return to the pinboard.

Base your arrangement of the subject matter to be learned on the interaction of the many sub-topics covered by your textbook

20. Order of Graphemes in a First Reading Book
Malagasy has 21 simple graphemes and 13 complex graphemes, involving two or three elements. When the authors responsible for preparing learning materials for first-grade reading and writing lessons started work on <i>Garabola</i> , they stipulated the order in which the graphemes were to be presented in the textbook taking the following factors into account
Frequency of the grapheme
The authors counted frequency on the basis of three texts of some 1000 words, the first of which was a newspaper article, the second a literary novel and the third a story told by a child. The frequency of punctuation such as apostrophes and hyphens was also counted. It emerged that the vowels, o, i and a had the highest frequency; with few exceptions, such as the “ts” used in negations “tsy” (not), simple consonant graphemes were found more frequently than the complex graphemes.
Complexity of the form of each grapheme
Given the fact that pupils learn to write what they have learned to read, the authors then analysed the complexity of the form of graphemes, and modified the list based on frequency as follows:
<ul style="list-style-type: none"> • Numbers of elements making up the grapheme • Single element graphemes (n, t, m, etc.) were put ahead of those made up of two elements (tr, dr, nk, etc.) or three elements (ndr, ntr); even ts, in spite of its high frequency, was relegated to a place behind the single element graphemes. • Shape and complexity of the form of the letters • Letters that are relatively simple to write (l, t, etc.) were given priority over more difficult forms (f, z, etc.)
Aural distinction
Certain phonemes in Malagasy are relatively close to one another, and can cause interference in young children; the graphemes corresponding to these phonemes were presented separately; thus j and z were presented separately, as were tr and ts, etc.
Visual distinction
Letters with vaguely similar forms, were separated from one another by at least one other letter whose form offers enough of a contrast, taking both printed and joined-up forms into account as far as possible. Thus n and m were separated by t, d and b by j and e and l by r.
Finding a common element
Complex graphemes were sometimes tackled together where the authors felt that this would make it easier to learn them and would emphasis any common element; thus mb and mp followed on from one another as did nd and ng, etc.

Writing Exercises

The organisation of the contents of materials for writing becomes extremely complex as soon as the pupils start to study the language, i.e. often as from the third grade. The authors must then define and harmonise at least five sub-topics: handwriting, vocabulary, spelling, grammar and creative writing.

It is important to create a coherent approach within each of these sub-topics, and then ensure that the pupil's progress in each of them is harmonised: it is impossible, for instance to introduce the concept of sentences in grammar if the pupil has not yet learned to write upper case letters. The contents of the exercises will interlock more and more closely as time goes on thanks to the permanent interaction, until an intra and interdisciplinary coherence emerges. If you are in this situation, you can begin to familiarise yourself with the complexity of the subject by consulting the contents page of recently published books. If the book is well

written, it should contain an overview of all subject matter presented in the book and the page make-up should make the links clear.

At the end of this phase you can draw up a list of the subject matter you wish to cover, and the order in which the material is to be presented. Be aware though that you may have to modify this provisional arrangement:

- when you begin to organise the subject matter page by page
- when you present the subject matter in the form of exercises, two phases that we will be looking at in the following chapters.

9. Contents of the Teachers' Guide

By the end of the conceptual phase you will have identified the subject matter you will wish to cover in your teachers' guide. Although this book deals more with the production of textbooks, we will spend a moment looking at the guide, given the vital importance of this publication in the hands of teachers who are often poorly trained.

Take the vital role of the teacher into account and decide on the contents of the teachers' guide with great care.

Many of you may ask if it is appropriate to write a sort of “user's manual” which would help the teacher day by day by giving detailed instructions, or if you should aim to write a “training manual” which would allow him to acquire the basic knowledge he needs to teach the subject in question, or again, if you should try to combine the two.

Given the fact that the didactic material you produce will stand or fail on the ability of the teacher to use it, you should attach great importance to the contents of the teachers' guide. We would suggest that you base your decision on an analysis of the needs and possibilities of teachers; to illustrate what we mean we have summed up the approach taken by the Tef'Boky Project to define the contents of the *Garabola* teachers' guide in Table 21.

The main shortcomings of the existing teaching process were identified, enabling the authors of the revised version of the *Garabola* teachers' guide to decide on the subject matter that would best remedy these. The following list was drawn up:

- General information on the language
- Presentation of the subject “Malagasy” and the sub-components reading, writing and speaking and listening
- Detailed information:
 - Sufficiently precise information for every lesson throughout the year in each of the three sub-topics, for the two time-tables - a sort of script;
 - Brief explanations on how to present an exercise involving a new mechanism;
 - Examples for some speaking and listening lessons
- Systematic visual presentation:
 - Reading and writing lessons in boxes
 - The form of the letter in joined-up writing
- Teacher's texts:
 - Texts for reading, to read to the class, to answer an aspect of the speaking and listening target (“The pupil can listen to and understand messages read to him...”)

Short weekly poems

- “Peripheral” information

Articles on the lexical enrichment of other languages;
Articles on the history and creation of the Malagasy alphabet.

- Reminders

Interruptions to recapitulate the progress of work and look forward to the lessons to come;

Regular invitation to refer back to the beginning of the guide to read the general information.

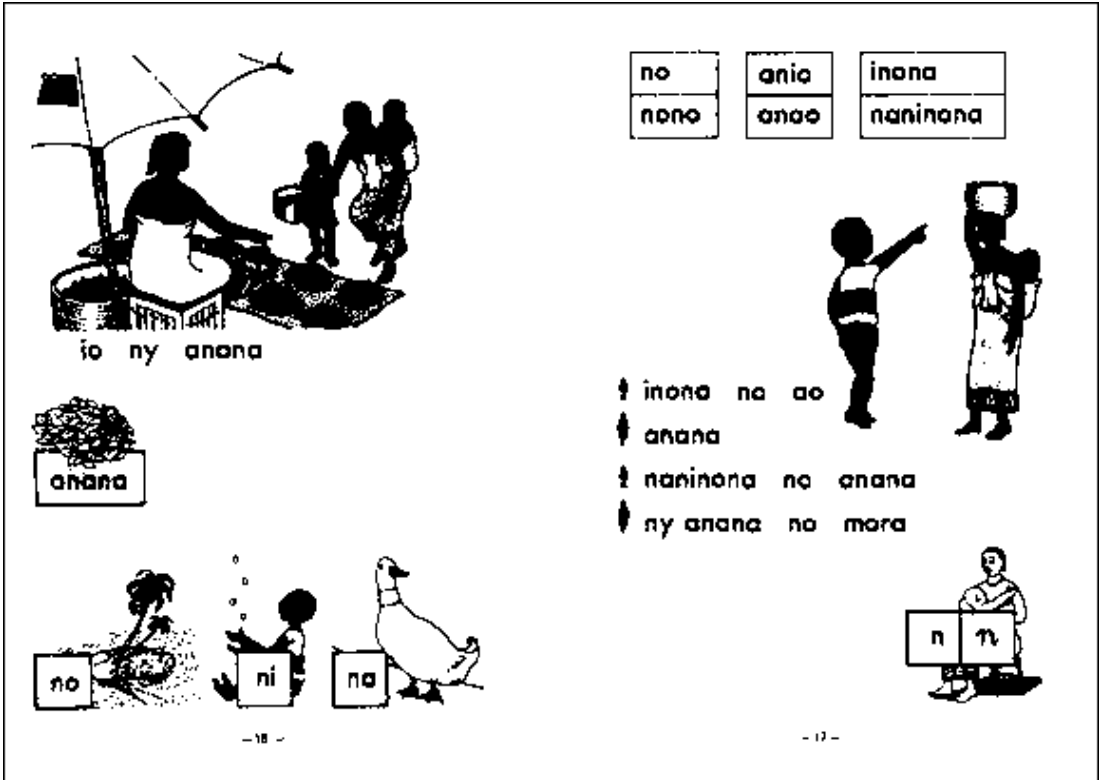
21. Contents of the Garabola Teachers' Guide			
When the authors revised the teachers' guide for teaching Malagasy in the first year of primary school, they defined the contents in a systematic form. Firstly they identified the central problem regarding the use of the guide, basing their work primarily on the data collected during the preliminary research and on the results of testing the pilot version of <i>Garabola</i> . Then they looked for the reasons for these problems and the consequences thereof in day-to-day school practice.			
Central Problem			
Teachers do not use the guide as they should			
Reasons 2	Reasons 1	Consequences 1	Consequences 2
1.1. Having read the guide the teachers change nothing in their practical work ¹⁰ 1.2. No sanctions on the part of the administration	1. Teachers do not pay enough attention to the guide	1. Teachers are not motivated	1.1. Teachers do not pay enough attention to their classes
2.1. Lack of training and/or willingness	2. They are not able to put the ideas in the guide into practice	2. Teaching remains superficial	2.1. The target is not achieved
3.1. Para-professional activities take priority	3. They only take time to read the guide during lessons	3. Teachers do not manage their classes	3.1. Pupils get bored
4.1. Teachers unaware of their own limitations	4. They believe that they know enough	4. Teachers, self-satisfied, give dogmatic lessons	4.1. Pupils are passive 4.2. Level of attainment is mediocre.
5.1. Shortage of well-written pedagogical documents	5. They do not have the benefit of a literate environment	5. Teachers see their work as a routine	
6.1. Inability to synthesise information and pinpoint the essentials 6.2. The guide lacks the recommendations needed for easy adaptation	6. They do not adapt the instructions properly to the actual classroom situation	6. They have no critical spirit. There is a lack of initiative and creativity	
7.1. Teachers doubtful about applying certain parts of the guide	7. They do not read what upsets them	7. Teachers are not rigorous enough in their lessons.	

8.1. Problems of readability, particularly because of the move from the verbal to the written mother tongue, terminology and communication difficulties	8. They are afraid of not understanding what they find in the guide	8. Too much time is wasted in class	
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Garabola

To illustrate the points we have looked at in this chapter here are some typical pages taken from

Garabola, which we have often quoted as an example.



1. Pilot version of the textbook. A typical reading lesson

①

②

③

④

2. Pilot version of the exercise book: Two typical pages of writing.

Revised version of the textbook

no anio Inona

nono anao naninana

Io ny anana

anana

na no ni

Inona no ao

anana

naninona no anana

ny anana no mora

14 15

1. Typical reading lesson

n

1. **Added by July 1988 via separate page**

a	na	o	anoo	anoo
a	na	na	anana	anana
i	na	na	inona	inona

2. **Added by July 1988 via separate page**

na	na	a	na
na	na	na	na

3. **Added by July 1988 via separate page**

na	na	na	na
na	na	na	na
na	na	na	na

- noana i mira
- noana i mora
- inona lo
- anana lo
- anoo io anana lo

4. **Added by July 1988 via separate page**

6. **Added by July 1988 via separate page**

inona lo

6. **Added by July 1988 via separate page**

na lo

2. Typical writing lesson

Revised Version of the Teachers' Guide

MIKABO	MIYIBY
<p>Abanabany</p> <ul style="list-style-type: none"> - Inhabits various dry upland areas - Inhabits lowland dry 	<p>Abanabany</p> <ul style="list-style-type: none"> - Inhabits dry forest dry low-plateau - Inhabits dry forest dry low-plateau - Inhabits dry forest dry - Inhabits lowland dry
Sub 1 of 2	Sub 1 of 2
<p>Iyaba</p> <ul style="list-style-type: none"> - Inhabits dry forest dry low-plateau - Inhabits lowland dry 	<p>Iyaba</p> <ul style="list-style-type: none"> - Inhabits dry forest dry low-plateau - Inhabits lowland dry
Sub 1 of 2	Sub 1 of 2
<p>Mwamba of Abanabany</p> <ul style="list-style-type: none"> - Inhabits dry forest dry low-plateau - Inhabits lowland dry 	<p>Mwamba of Abanabany</p> <ul style="list-style-type: none"> - Inhabits dry forest dry low-plateau - Inhabits lowland dry
Sub 1 of 2	Sub 1 of 2
<p>Zama</p> <ul style="list-style-type: none"> - Inhabits dry forest dry low-plateau - Inhabits lowland dry 	<p>Zama</p> <ul style="list-style-type: none"> - Inhabits dry forest dry low-plateau - Inhabits lowland dry
Sub 1 of 2	Sub 1 of 2

Particulars on Inhabits (2) Sub 1 of 2

- Inhabits dry forest dry low-plateau
- Inhabits lowland dry

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1. Use of graphics - the interlocking of reading

1.1

1.2

1.3

2. Brief refresher - here joined-up writing and writing activities

1.1

1.2

1.3


1.4

1.5

1.6

7. Anthology of 24 reading texts and 24 poems

Paatharanga Kavya	Yathavya	Kavachalana
	<p>1. Paatharanga Kavya - Paatharanga Kavya - Paatharanga Kavya</p> <p>2. Yathavya - Yathavya - Yathavya</p> <p>3. Kavachalana - Kavachalana - Kavachalana</p>	<p>1. Paatharanga Kavya - Paatharanga Kavya - Paatharanga Kavya</p> <p>2. Yathavya - Yathavya - Yathavya</p> <p>3. Kavachalana - Kavachalana - Kavachalana</p>
<p>Paatharanga Kavya - Paatharanga Kavya - Paatharanga Kavya</p> <p>1. Paatharanga Kavya - Paatharanga Kavya - Paatharanga Kavya</p> <p>2. Yathavya - Yathavya - Yathavya</p> <p>3. Kavachalana - Kavachalana - Kavachalana</p>	<p>Yathavya - Yathavya - Yathavya</p> <p>1. Yathavya - Yathavya - Yathavya</p> <p>2. Kavachalana - Kavachalana - Kavachalana</p> <p>3. Paatharanga Kavya - Paatharanga Kavya - Paatharanga Kavya</p>	



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8. Caricatures to retain the attention of the teacher

10. In Conclusion

Where do we go from here?

At the end of this phase you should have two lists of contents, one for the pupil's textbook and one for the teachers' guide.

It would obviously be preferable for you to write these two books in concert. The advice and instructions should at least be devised at the same time as the texts and exercises in the textbook, if not written in a final form.

However desirable this may be, though, it is not always possible. You will appreciate that each publication demands the closest attention of the authors over a period of several months, which generally precludes authors switching from one publication to another. You should not worry, then if you concentrate more and more of your energy on the textbook and end up gradually putting off work on the teachers' guide until later. Make do with noting the important points that you might otherwise forget and continue your work on the textbook - decide how to present the contents that you have now identified. The next chapter is devoted to the presentation work.

Notes

¹ The repercussions of decisions relating to the temporal framework are numerous, e.g. the Tef'Boky Project, noting that the time actually available in schools was significantly lower than the official allocation decided to spread the basic "Mother tongue" course over two years rather than one, thus drastically changing the attainment targets for this subject throughout the primary cycle.

² In Madagascar some isolated schools do not even manage to provide the reduced three-hour session and others are open for barely 20 weeks a year. When they devised their didactic materials, the textbook authors of the Tef'Boky Project decided to discount schools that did not operate for a minimum of 24 weeks a year, considering that these establishments were not in a position to provide an education worthy of the name.

³ In our experience the first version of some textbooks may well encounter major resistance on the part of the education authorities. But if this resistance is not based on well-founded technical or political criteria, and is merely a more or less deep-seated wariness of anything new, the revised version will carve out its own niche.

⁴ This table indicates one of the major difficulties that the new materials will have to cope with: the full time-table dedicates twice as much time to reading and writing as the reduced time-table. This represents a major challenge for authors, and becomes more of a problem from year to year, if we take into account the fact that as from the third grade the study of the mother tongue involves grammar, vocabulary, conjugation, spelling and composition, whereas the reduced time-table remains the same.

⁵ It is, of course, quite impossible to verify the actual teaching time left, once you have deducted everything which does not involve teaching, such as lines, time taken to hand out books and exercise books, or to wait for silence; although this information would be very useful, it would not have any direct impact on the concept of your material.

⁶ Seguin, R. *L'élaboration des manuels scolaires*, op. cit., p. 5.

⁷ This is often seen where a new education policy is approved. In Peru, for instance there had always been a department within the ministry responsible for producing the traditional curricula which were based on the assumption that Spanish was the mother tongue of all pupils. When "bicultural and bilingual education" was introduced in 1979 this department asked the German-Peruvian Bilingual Education Project, which has already been referred to several times, to develop curricula to match the didactic material produced in Quechua, Aymara and Spanish as a second language, since the textbook authors were felt to be better able to perform this work.

⁸ More precisely, "the mastery theory is based on the finding that the vast majority of pupils in a normal class can master a given target if they are given enough time and the support they need to overcome their difficulties". In: Landsheere G. *Dictionnaire de l'évaluation et de la recherche en éducation*, op. cit., p. 197.

⁹ In the curricula which the authors of the Tef'Boky Project proposed to the education authorities in Madagascar, it was stipulated that 70% of all pupils must achieve the attainment targets.

¹⁰ This is the only problem that cannot be solved by the manual; the solution lies elsewhere - the promise of a career structure, reintroduction of inspectors' visits, etc.

Recommended Reading

Curricula

BABIN, N. AND Pierre, M. *Programmes, Instructions, Conseils pour l'école élémentaire*. Paris: Hachette Ecoles, 1986

BUDE, U. *Culture and environment in primary education. The demands of the curriculum and the practice in schools in sub-saharian Africa*, Bonn: German Foundation for International Development (DSE), 1991

HAMEYER, U. et al (Ed.) *Handbuch der Curriculumforschung*, Weinheim, Basle: Beltz, 1983

MAGER, R.F. *Comment définir des objectifs pédagogiques*. Paris: Bordas, 1977

SEGUIN, R. *Curriculum development and implementation of teaching programmes. Methodological guide*. Paris: UNESCO

Innovation

AREGGER, K. *Innovation in sozialen Systemen. 1. Einführung in die Innovationstheorie der Organisation*. Berne, Stuttgart: Paul Haupt, 1976

AREGGER, K. *Innovation in sozialen Systemen. 2. Ein integriertes Innovationsmodell am Beispiel der Schule*. Berne, Stuttgart: Paul Haupt, 1976

HAVELOCK, R.G. AND HUBERMAN, A.M. *Solving educational problems. The theory and reality of innovation in developing countries*. Paris: UNESCO, 1977

To Sum Up

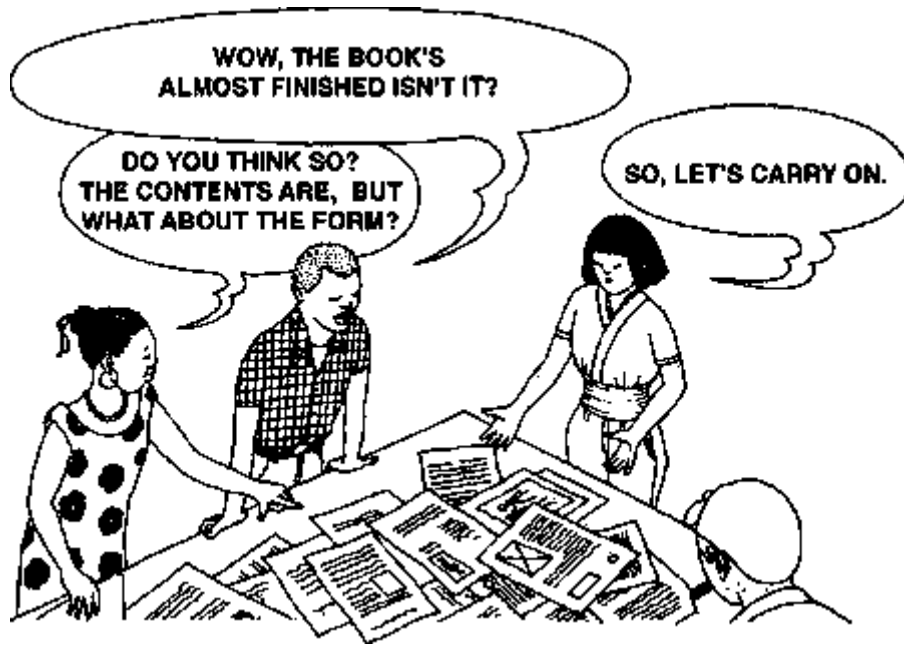
Once authors are in possession of the main information regarding the production conditions and the circumstances in which their textbook will be used they can start work on the conceptual phase. Their first task must be to lay down the sequence of subject matter to be covered. To achieve this it is important to define each of the following:

- The actual learning time in the grade and subject in question, which is not always the same as the official learning time;
- The targets, in line with the teaching and learning conditions;
- The composition of the set of didactic materials which will allow pupils to achieve these targets, and which must be in line with the needs and possibilities of the target group;
- The break-down of the subject matter to be covered by the various types of material to be produced

Conceptual work is always complex in developing countries.

The official instructions often bear little resemblance to the reality in the schools, and the teams of authors must gauge how much leeway they have before deciding. Finally they must make a distinction between what is desirable (often the tacit wish of parents and the education authorities) and what is suitable for the given situation but often more difficult and almost always less attractive to both the authors and the various target groups. Every aspect of the new textbook must be examined on the basis of a number of criteria, including the material, psychological and social aspects, which it is often difficult to reconcile satisfactorily.

In spite of this complexity, however, or perhaps because of it, you must invest the necessary time and care in this conceptual phase if your textbook is not to be built on sand.



The Form

The last chapter enabled you to identify the contents of the didactic material to be produced; in this chapter we will look at how to ensure that text and illustrations are of the quality required while staying within your budgetary constraints.

If you are still new to the profession of textbook writing, you may feel that you have spent so long on all the work to date that now it is time to close the conceptual phase. But, if you go on to write your textbook without a proper plan for the form, you will run the risk of writing texts that are too short or too long, producing exercises that are difficult or impossible to present visually, preparing artwork that is far too expensive or producing an unhappy mix of text and illustrations.

To avoid these eventualities, you should thus examine the physical and graphic aspects of your textbook before closing the conceptual chapter. Since the contents and the form are interdependent, you can create them in a two-pronged action, so that the texts and illustrations fit into a pre-established framework without major difficulties.

In large publishing houses, the work described in this chapter does not concern the authors directly¹; if you are lucky enough to have good publishing back-up, you need only read through this chapter to understand the constraints that the publisher is bound to impose on you. If, however, you have to decide personally on the physical and graphic aspects of your book, you should read this chapter carefully, bear in mind that it is generally errors in the form which reveal the lack of professionalism of authors, and take appropriate precautions.

Contents and form must be devised in tandem

Don't leave the format to chance; analyse all possible consequences of your choice

1. Format

To allow you to visualise the initial arrangement of the contents of your book on the page, we suggest that you first decide on the dimensions of the book.

If you look at textbooks designed for primary level, you will see that the basic form is rectangular², but that the dimensions vary: some are scarcely larger than a standard paperback (200 x 130 mm), others are almost A4 size (297 x 210 mm) and most are somewhere between these two extremes (e.g. 240 x 170 mm).

The format of a textbook should never be a coincidence. The main elements that you should take into account to ensure that the dimensions are appropriate for the purpose intended, i.e. that they meet the needs of users and producers alike, are described below.

Pedagogical and Didactic Considerations

First and foremost you should identify the dimensions which guarantee optimum readability, in terms of both the structure and the text. Take the following points into consideration.

Macro-legibility - the structure³

The dimensions you choose must make the general structure of the textbook easily comprehensible. Other factors, including typographical aspects and layout considerations naturally play a contributory part, but it is the size of the pages more than any other single factor which will determine the macro-legibility of your book.

The format you choose must firstly reflect the structure of the lessons. If you are producing a first reading book, where it is important to respect certain stages of learning, the page should

be big enough for the links to be quite clear. If you have chosen an analytical learning form, the reader should be able to recognise at first glance the progression from the sentence to the word, the syllable, and perhaps the letter.

Equally, the format must reflect the various functions of the text. Let us take an example to illustrate this: let us assume that you plan to print exercises along with brief instructions in your book. The page dimensions must then be such that each block (exercises and instructions) is easily recognisable at first glance.

The two illustrations below reveal how important this aspect is.

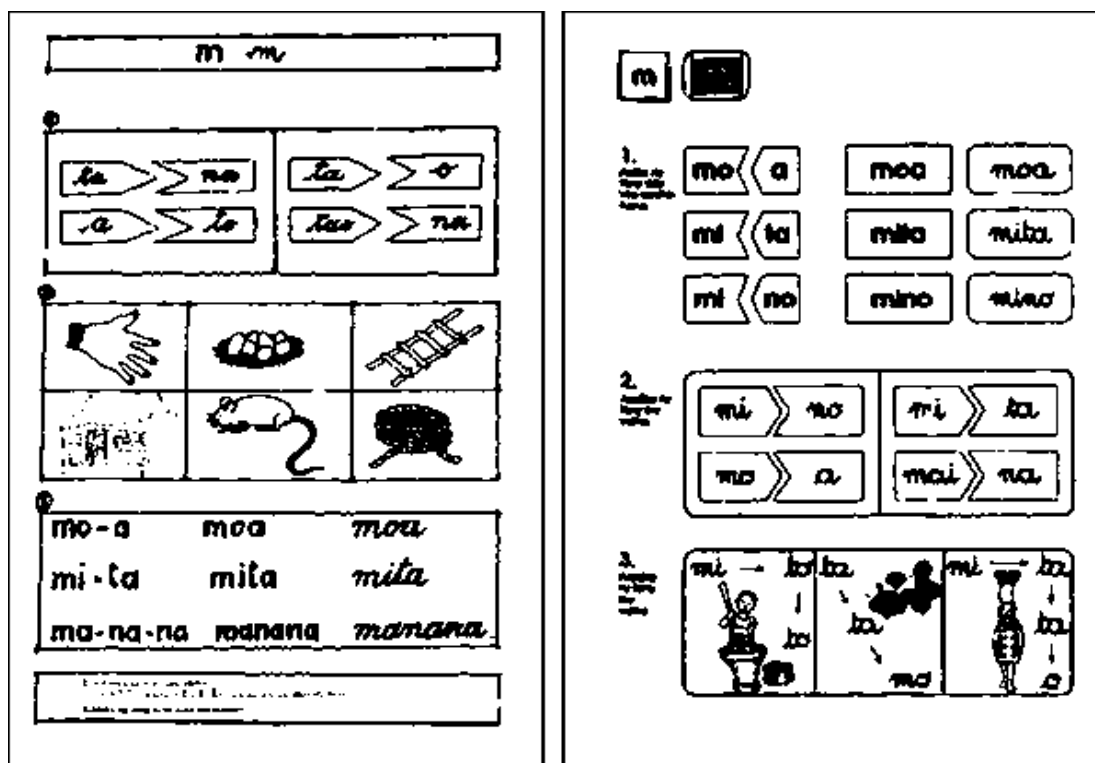
First priority: the format must be large enough to ensure that the structure is easily recognisable

Micro-legibility - letters and words

The dimensions of your textbook must also be such that it can be easily and effectively read by users. This readability is governed by several factors, which you must bear in mind at the end when determining the layout of your book. At this stage we will look only at those factors that have a direct bearing on the format, i.e. the size of the characters used.

You should take your lead primarily from the research conducted in industrialised countries over a period of several years now into the readability of printed characters. M.A. Tinker, one of the best known experts in this field, concludes that the characters used in textbooks should be in indirect proportion to the level of education: the further down the educational ladder you go, the larger the characters should be⁴. The dimensions of the textbook must thus allow you to use the size of characters recommended for the grade in question.

This is always important, but it is vital for a first reading book. Since it is not recommended to hyphenate words at this level, and we would advise you not to spread sentences over more than one line in the first lessons, the textbook dimensions must enable you to write a sentence in one line using the size of characters recommended⁵; a paperback format would thus be inappropriate at this level.



The left hand page shows a draft, the right hand page the final version of Garabola exercises. Look at the two, and see how important it is to arrange the exercises and instructions in a way that makes them easy to understand. Think about the consequences of the two versions: if the instructions are printed at the bottom of the page, the textbook must be long enough to separate them clearly from the exercises; if they are printed on one side of the page, on the other hand, the textbook must be wide enough for the exercises to be printed completely.

Secondly, you should bear in mind the learning conditions observed during field work: if the classrooms are poorly lit, if most pupils have not enjoyed preschool education, and if they have little contact with printed materials, you may have to raise the levels of readability determined for industrialised countries⁶, and use a larger format for the first grades at primary level.

Practical Considerations

This is the second important factor which will influence your decision on the appropriate format, and may force you to modify your original decisions. If you have, until this point, given priority to pedagogical and didactic considerations, you probably intend to use a relatively large format; but under the circumstances in which textbooks are normally used in developing countries you may have to scale down your book.

Before deciding, consider the following factors.

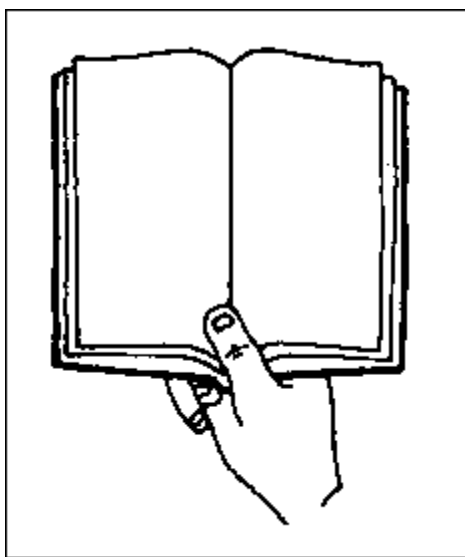
Ease of Handling

A book is always made to be visually attractive, as we have seen above, but it must also be easy to handle.

When you select the format, you should think firstly of the pupils of course: they must be able to hold the book closed with one hand without difficulty or open using both hands. You should also think of the teachers. Since some of them will be teaching several classes at once, and since they will almost always have to stand to better direct proceedings, you should choose a format which is small enough for the teacher to hold it in one hand during the reading lesson as they prefer to do.

Test your book for ease of handling by holding it in one hand as shown below.

Large formats meet pedagogical needs best, while smaller formats respond to practical and financial considerations



School Furniture

The dimensions must also be appropriate for the school furniture available.

Return to the field study and determine how the schools are equipped in terms of tables and chairs; and more precisely look at the width of tables, the average seating space per class and the general state of repair of pupils' furniture. In some classes an unnecessarily large textbook can be a nuisance for pupils and will be rapidly destroyed.

Utilisation

Finally, when deciding on the dimensions of a textbook you should bear in mind how it is going to be used, by one pupil or several.

If it is to be used by more than one pupil, the book will only be borrowed by pupils and will be kept in the school building. It can then be relatively large, especially if the system involves two or three pupils sharing a book. On the other hand, if parents are expected to buy the book, it will have to be carried back and forward to school in a small canvas or raffia bag; if this is the case you should come down on the side of a small, compact book, which will be easy to carry and won't be destroyed so quickly. Specialists reckon that textbooks for primary level in rural areas should have a maximum format of 220 x 140 mm to ensure a maximum service life⁷.

You should pay all the more attention to these considerations since the other factors which will help determine the service life of your textbook (paper used, material used for cover, binding) may not be of top quality.

Economic Considerations

By analysing users' needs you have worked out your first ideas as to the dimensions of your textbook. You should now check whether the desirable is financially feasible. The cost price of a book being closely linked to the price of the paper used⁸ you should decide on an appropriate format in terms of the format of the paper and printing materials so as to avoid wastage, which can be very expensive.

We are now entering the technical domain with which authors are not, as a rule, familiar. Given the scope of this publication we will look only at the essentials. We recommend that you consult your printer who should be able to give you the additional information you need, and that you read the works listed at the end of this chapter.

Contact your printer at this stage

Format of Paper to be Used

Paper is manufactured from pulp, which is in turn produced on the basis of certain raw materials (wood, but also plants and textile waste). Paper machines produce large rolls of paper which can then be cut into sheets.

The rolls of paper are sold by weight, whereas sheets are sold in reams (packs of 500). The format of rolls is determined by the width of the strip; reams of paper come in standard sizes⁹.

To avoid unnecessary wastage, make sure that the format of your textbook corresponds to the dimensions of the sheets of paper used in printing, folded once or more, as indicated briefly at the start of chapter one.

Avoid paper wastage which will put an unnecessary strain on your budget

You should thus contact your printer to find out whether or not he will have to import paper; if he can, you will have a certain leeway regarding the format, since large paper manufacturers can often produce paper to your specifications provided you order a large enough quantity

and provided the order is not urgent. If, on the other hand, he is obliged to use locally-manufactured paper, or if you have been donated paper, as is relatively frequently the case with textbook projects, you should determine the format of the textbook on the basis of the format of the available paper.

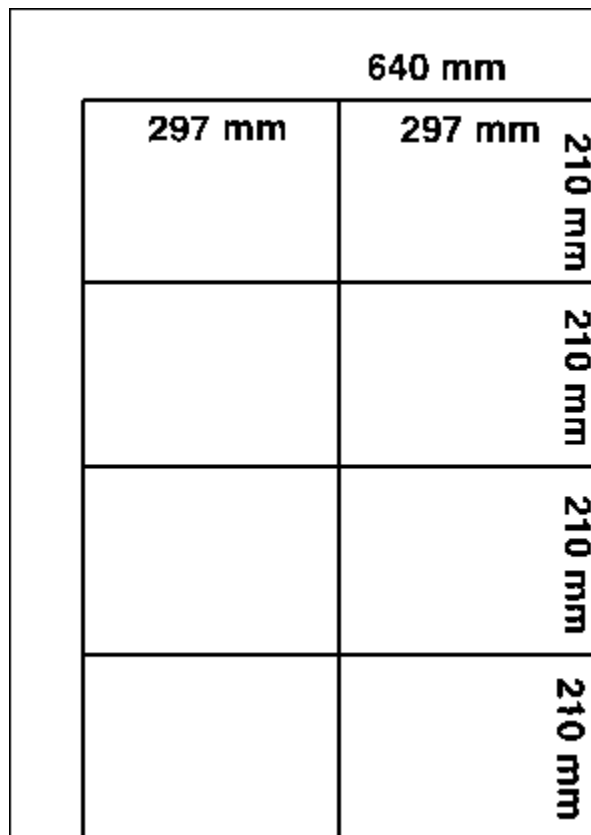
What you, as authors, must be aware of is that it is rare for a book to be printed one page at a time; for reasons of economy a maximum number of pages is set for each sheet printed. The forme thus obtained is slotted into the printing press, and the printed sheets are folded and then cut on three sides. You then have a “signature”. The body of the book is made up of several signatures put together.

To print the maximum number of pages at a time on one press you should define the final format of the finished work with great care, on the basis of the paper format. If, for instance the paper available for printing is A1 format (594 x 841 mm), and you decide that your textbook should measure 250 x 190 mm, you can print 16 pages at once, as illustrated below, 8 right hand and 8 left hand pages; the blank edges will make it easy to trim the pages once they have been folded¹⁰.

Format of Printing Presses

The format of your textbook must also correspond to the format of your printer's printing presses. To take the same example as before, if the dimensions of the printing press are 920 x 640 mm you should not select a finished format of 300 x 240 mm for your book; because of a few centimetres too many you would only be able to print eight pages at once rather than 16, the wastage would be high and the cost of the paper would almost double.

The paper wastage may appear to you to be negligible for a pilot run of a few hundred books, but if the prototype is approved for general nation-wide distribution with a run of say 50,000, the additional costs of your lack of foresight will be enormous.



You should, however, be very careful in this field. Although it is vital for you to understand the importance of the relation between the format of a book and of the paper used for printing, you must be aware that the information given here is far from complete. The printer, who has experience in this field, will often know how best to reconcile the financial considerations with the format you want. You should always consult your printer before making a decision which it will be difficult to change at a later date.

Publishing Considerations

Finally, you should not forget that the dimensions you select for your textbook need not necessarily apply only to this one volume.

If you have been asked to produce a series, you should bear in mind that one feature of the set will be the identical format of all textbooks. Reconsider your decision in this light, and see if it is appropriate for the series as a whole.

2. Number of Pages

The number of pages, which is closely linked to the format, and partly determined by it, should also be stipulated at this stage.

For most books, the number of pages can only be identified once the manuscript has been written: a system of counting, called "casting off", allows us to count the number of characters used and thus to calculate the space needed by the text once it is set. The complex structure of textbooks, however, precludes this approach. Indeed quite the reverse is true: before the authors start to write, the number of pages must be determined, and the text they write will be shaped by the exact number of pages and the relatively precise space allowed for text on each page.

We propose that you examine the following aspects and achieve as great a harmony as possible when deciding on the number of pages.

Pedagogical and Didactic Considerations

The number of pages must first correspond to the material to be covered, and the methodological approach that you have decided on in line with chapter 4. The following are the main aspects to be taken into account in this phase.

Learning Pages

Firstly you should count the number of pages that are to be dedicated to learning; this will give you an idea, and allow you to plan the number of printed signatures that will make up the finished textbook.

To this end you should look again at the draft contents for each learning unit - i.e. the lesson - and identify the number of pages required per unit or lesson. Take into account the format envisaged, and the learning stages or the major parts of each lesson. Then estimate the number of pages needed to present the subject matter in a systematic way - and multiply this figure by the number of units you intend to incorporate in the book.

If, for instance, you have planned 24 units for the year, your results will be as follows:

- For 2-page units 48 pages
- For 3-page units 72 pages
- For 4-page units 96 pages
- For 5-page units 120 pages
- For 6-page units 144 pages.

Some of you will probably wonder how you can go about identifying the space needed to present the contents satisfactorily on a page; if this applies to you, look briefly at section 3 of this chapter, which deals with this question, even if you have to come back to it in more detail later.

At this stage, of course, your results can only be provisional; as you will see, the total number of pages you have just calculated does not correspond to the total number of pages in the book. This exercise is only important to give you a first rough idea of size. Commit it to memory and put it up on the pinboard.

The number of pages in a textbook is decided before the book is written

The number of pages allocated for each lesson must allow for an effective layout of the contents

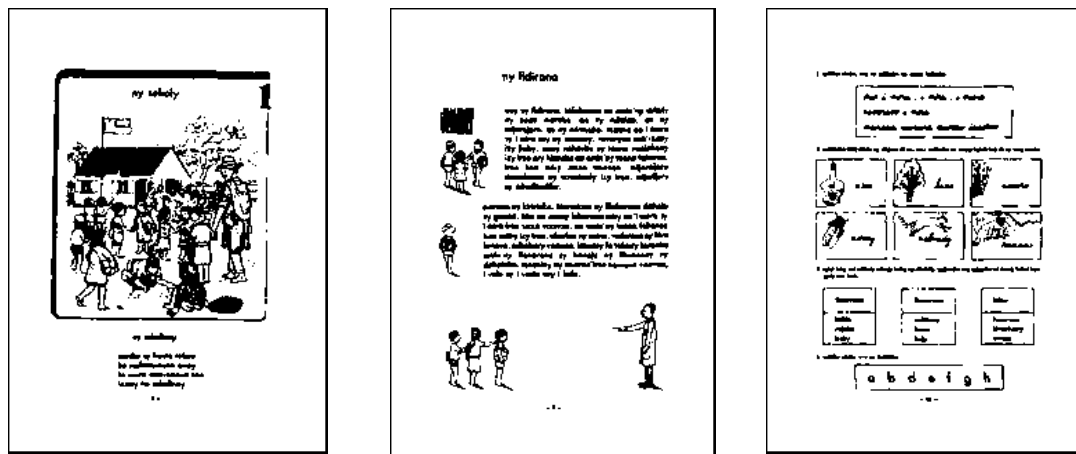
Macro-legibility of the Book

The number of pages must make for good macro-legibility. If you opt for an even number of pages per unit, the arrangement of the contents should be fairly transparent; the first page of every unit will either be a right-hand page, or a left-hand page.

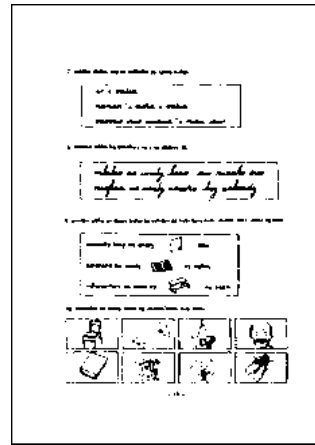
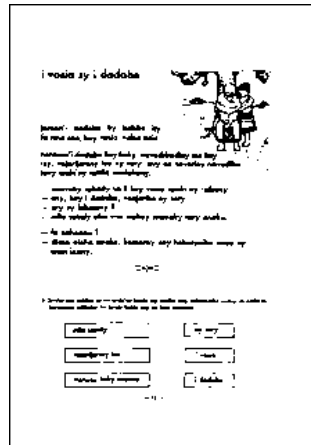
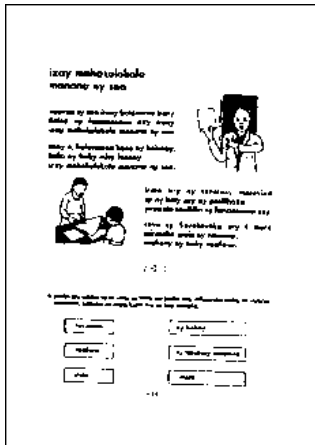
If you chose an uneven number of pages for your units, you will not get any such clear structure; the first page in a unit will sometimes be a right-hand page and sometimes a left-hand page. If you intend to have units of 3 or 5 pages in length we would urge you to reconsider the wisdom of this before progressing.

To illustrate this point we have printed the arrangement of one unit of the pilot version of *Tongavola*, a reading and writing book for grade-two pupils in Malagasy. The authors saw no other option open to them but to opt for 6-page units; the first five units address all pupils, the last is made up of supplementary exercises for pupils following a full time-table.

Given the heterogeneity of the contents of certain pages, it was vital for the units to have an even number of pages, to give the reader a marker in the form of the first page, which is always on the same side. The figure below shows the first unit of *Tongavola* to illustrate this.



1. Visual introduction to the topic of the week, which is also used for speaking and listening lessons, followed by the poem of the week
2. First reading text, descriptive in nature
3. Writing practice: handwriting, spelling and vocabulary



4. Second reading text, procedural in nature, followed by a grammar exercise

5. Third reading text, narrative in nature, followed by a composition exercise

6. Additional text comprehension, spelling, grammar and vocabulary exercises

To ensure that readers can find their way around the book easily, you should opt for an even number of pages for each lesson

Financial Considerations

Beginners are often tempted to incorporate as much of their own knowledge as possible in their first book. Not only do they often overestimate the volume of work which teachers and pupils in developing countries can realistically get through, but they forget to gauge the financial implications of printing non-essential pages.

Paper is always expensive. Calculate for yourself the cost of an extra eight-page signature in a run of 100,000 or more.

So, keep to the number of pages you consider essential for each unit and modify this if necessary to keep costs within acceptable limits.

Technical Considerations

The figure you have calculated is still not the total number of pages of your textbook. It is merely a rough calculation, which you will be able to make more precise when you take the technical factors into account.

To this end you should go back to the format you plan to use, and the format of the sheets of paper to be used for printing, which will allow you to check how many pages can be printed at once. You will see that it is best to choose a multiple of 8 (16, 32, etc.) pages for your book. The difference between the number of pages reserved for learning and the total number printed will depend on what we will term “non-text information”, which we will look at in more detail below.

Let us assume that you consider 96 pages essential to present the subject matter, and you have to choose a multiple of 16 pages. To get a round number, you will have to use an entire signature for non-text information¹¹.

Bibliographical Conventions

A book does not only contain information in the main body of the text, but also in the form of non-text information, which may be found on the title page, or at the start or end of the book. And in a book destined for true booklovers the first pages must be left blank.

It is acceptable for there to be no blank fly leaf in your book; but you must provide what we

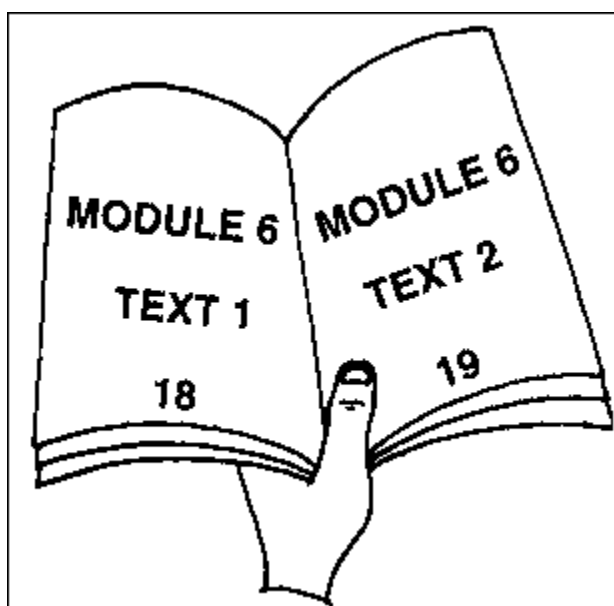
have chosen to term non-text information.

In an attempt to explain this briefly and as precisely as possible, we have printed the cover page and the first few pages of the revised version of *Garabola* opposite. Below each page we have described the information contained on that page and outlined the reasons for including this information.

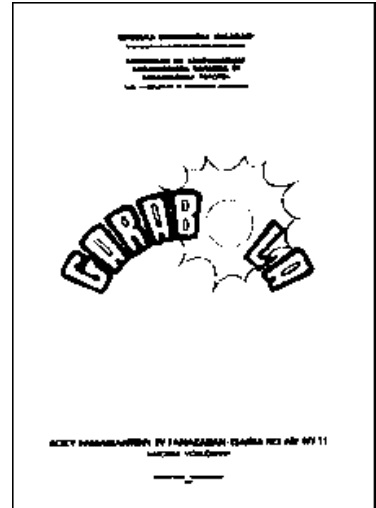
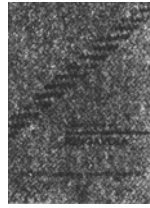
Publishing Constraints

This is the final point that you must take into account when deciding on the number of pages your book will have.

The books for each class should be at least as thick if not slightly thicker than the preceding volume. You should thus ensure that the grade one book does not take on the dimensions of a small encyclopaedia, which is bound to cause problems later in the series.



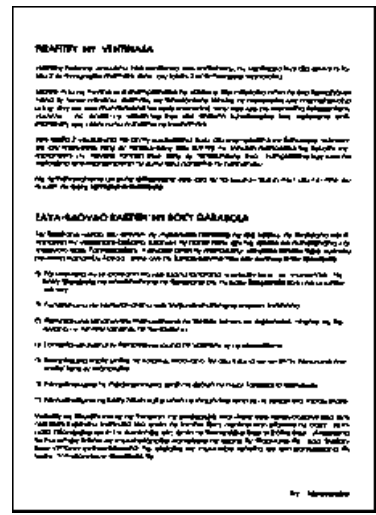
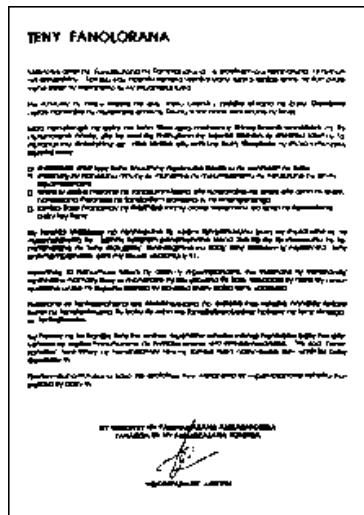
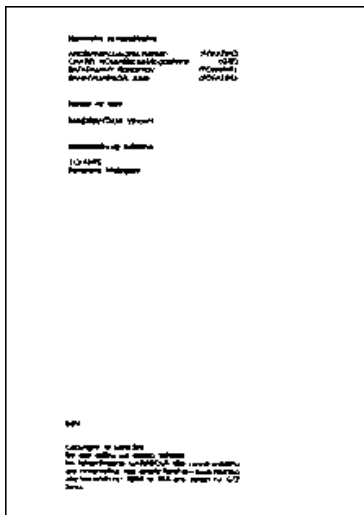
Run one last check at the end of this phase: if a page has remained blank due to an oversight it is easy to correct this oversight either at the start of the book (add a preface, spread the table of contents over two pages rather than one, for instance), or in the body of the text (in a reading book you could add an extra title page before the supplementary texts, for instance). If, however, you have forgotten a page in your calculations, which can happen to even the most experienced authors, it will be difficult to add one at a later stage, and the later you discover your error the more difficult it will be: sometimes you will have to redesign the entire layout with all even pages becoming odd pages, etc.



Front Cover
 Contents: Title of book;
 Contents (subject and grade);
 Illustration
 Reasons: Practical reasons:
 The potential purchaser must be attracted by the illustration, informed as to the contents of the book and told whether or not the book is officially approved.

Back Cover
 Contents: Announcement regarding the publishing of the textbook for the next grade;
 Reminder of contents;
 Printer's logo
 Reasons: Practical reasons:
 The purchaser must be told whether or not the book is part of a series; Legal and practical reasons; The printer must be specified.

Full-Title Page
 Contents: Name of ministry; Name of sponsor; Title of book;
 Contents (subject and grade);
 Version (pilot); Date and place published
 Reasons: Institutional reasons;
 Practical reasons: Even if the cover is lost the full-title page gives the essential information



Copyright Page
 Contents: Authors' names; Illustrator's name; Publishing unit;
 Copyright
 Reasons: Legal reasons:
 Who holds the copyright; Recognition of the moral rights of authors, illustrators and the publishing unit

Preface
 Contents: General preface signed by the Minister of Education
 Reasons: Institutional reasons:
 official seal of approval for the book and its contents

Introduction to the Book
 Contents: Text by the authors laying out the learning targets of the book and the different stages in its completion, including the evaluation phase
 Reasons: Practical reasons;
 To enable teachers to use the book even without a teachers' guide; To boost the book's credibility with teachers: it has been tested and revised

To avoid this, make a mock-up of your book; write the unit number and the main contents on each page. You need not respect the finished format for your mock-up - a mini model is every bit as good.

Ascertain that you have calculated the number of pages correctly before progressing to the next stage

The cover of a textbook is a very special place; take great care in selecting the information to be printed on it

You should always reserve a few pages at the start of your book for general information

3. Basic Visual Structure

By laying down the format and the number of pages of your textbook you have defined the framework within which you must now insert the contents. The objective of the phase that you are now starting is to design an initial arrangement of the contents on the page, or to be more precise to put together texts and illustrations in an appropriate way on each page.

This is not the final layout. It is a draft, the first translation of your ideas into physical form. This overview will allow you to judge the general rate at which you aim to present the contents. The decisions you will make should be just precise enough to allow you to progress to the writing phase, gearing your work to a framework, which will probably have to be modified, adapted and specified in greater detail later.

We are touching on a field which, in large publishers, would be the task of a professional layout person. When the authors themselves are in charge, they do not always appreciate the importance of this phase, or do not have the training they need. This is why, although we describe how to proceed, we also advise you to seek the advice of a professional and to train yourself systematically to evaluate the graphic aspects of books. Once again do not be discouraged: find out about the subject by examining the layout of other books and by reading specialised books, including those listed at the end of this chapter.

Function of Visual Markers

What is the point of identifying an underlying visual structure? - to make your book a good learning and teaching tool. If it is to be a valuable tool, it is not enough to have appropriate, well-organised contents; the presentation must facilitate the understanding of the content matter, and more precisely, you will need visual markers which will clear up doubts, prevent misunderstandings, visualise the progression and spotlight key information.

To this end you must put together the various elements which make up a page (texts, illustrations and blank space) in a form appropriate to the content matter. You will create the underlying structure, which will be repeated more or less identically in each unit. In this way you will give the book a uniformity and transparency which is vitally important for pupils and teachers who have little contact with the printed word.

Organising a Learning Unit

The basic structure will be determined at unit level, i.e. at the level of the chapter or lesson. You should thus design your unit step by step, using sketches and ideas, comparing these and modifying them one after another.

If we come back to the example of a reading and writing book, you could reflect on the following basic questions:

- Will the learning units or lessons be similar or will they be divided into easily distinguishable blocks with different structures?
- Will you present all the texts and exercises in the main units, or do you plan to distinguish between those that are indispensable for learning, and supplementary texts and exercises which could be put at the back of the book?
- Should the first page of each unit be on the same side of the book? On the right-hand side or the left-hand side?
- Will the reading texts and writing exercises be separated and printed on different pages or will they be printed on the same page?
- Will the reading and writing work be presented on a full double page or will one page of reading always alternate with one page of writing?
- What is the average length of texts for reading and the dimensions of accompanying pictures?
- Will some texts require a special layout?
- How much space approximately will each exercise need?

These considerations should result in a first draft or design of the contents of a unit. You should sketch your design in pencil without paying too much attention to precision or scale.

On the next page you will find the draft produced for four pages of a lesson in the revised version of *Garabola*.

Outline the rough presentation of the contents of each lesson
You should identify the basic structure of your book little by little, scribbling down ideas, feeling your way forward, and changing your plan time and time again

Double Pages

Once you have decided how to arrange your unit, you should examine the resultant structure of the double pages; remember that the reader will always be confronted with a double page when he opens the book, and that your basic structure must build on this.

You may find certain shortcomings and feel that you should modify the arrangement of the unit. Let us assume, for instance that for a four-page unit comprising reading and writing you had decided to alternate one page reading and one page writing. You then discover that every double page throughout the book will follow an identical pattern, giving your book an apparent lack of structure.

One double page of reading followed by a double page of writing like *Garabola*, reproduced at the top of this page will give you greater transparency and dynamism.

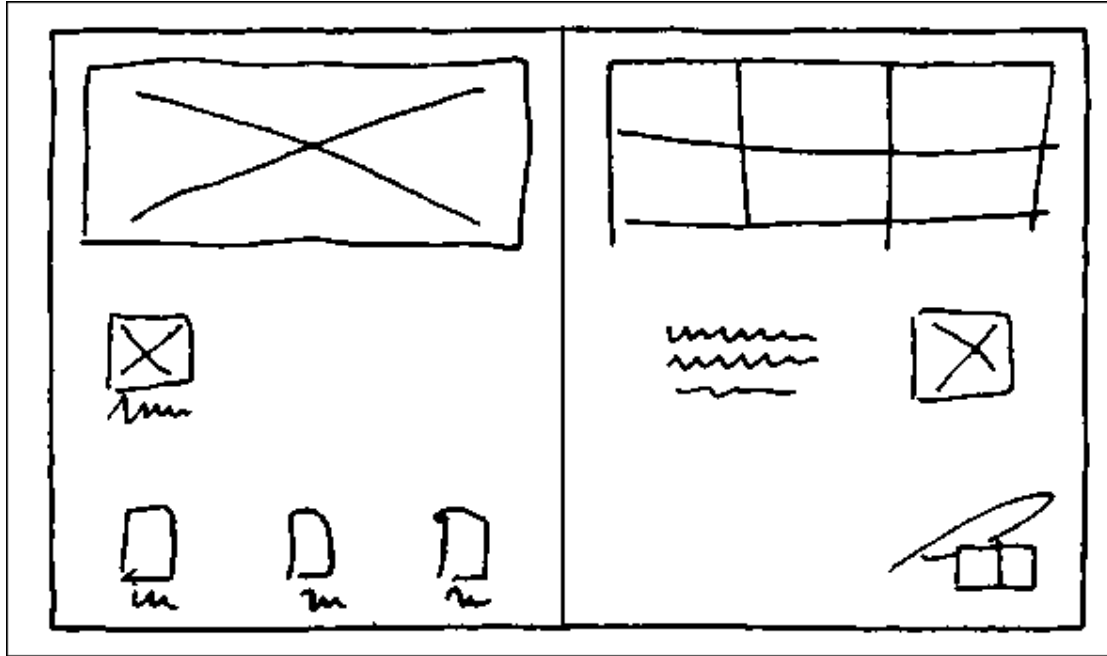
The Page

If you are satisfied with the organisation of the double page, it is time to look more closely at the organisation of the individual pages. You must look at the size of all the elements which go to make up a page and make any necessary changes.

By the end of this phase you should have a rough model of the contents of your book, page by page

There are no universal prescriptions for a good page layout, but the following pointers are important. Avoid cramming the page too full and leaving it too empty; if you intend to put together an illustrated text and an exercise on one page, sketch the layout for each, and do

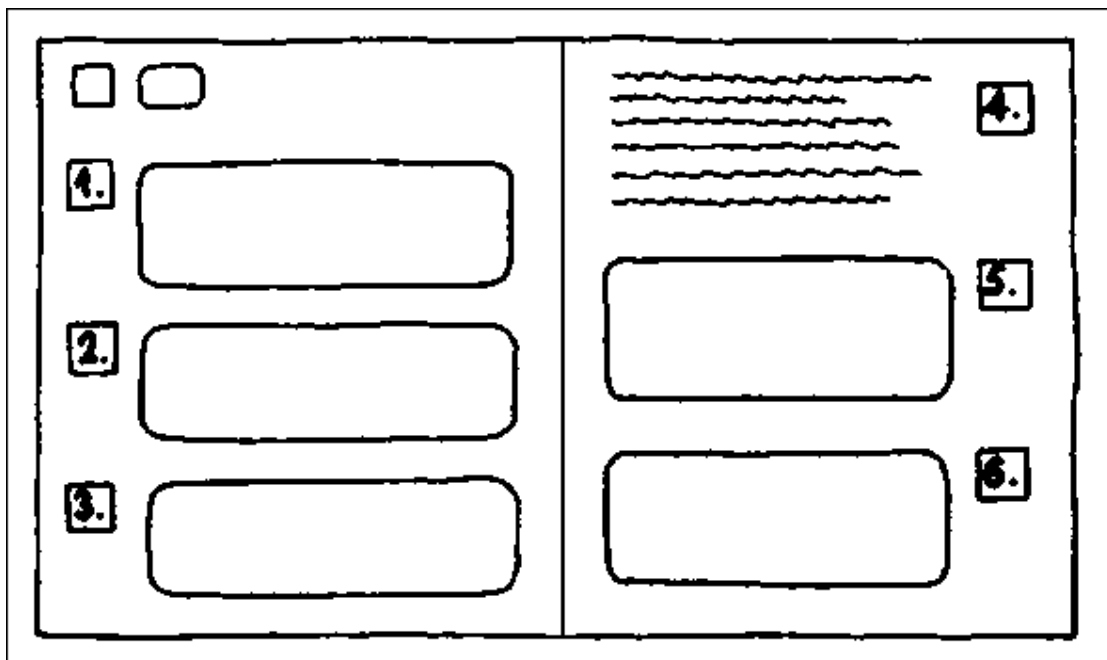
not hesitate to revise your decision if you find that you don't have space to present the exercise properly at the bottom of the page. If you have a page of exercises, remember that two exercises on an otherwise empty page may look silly, but that six or more may be too many, making it difficult for the reader to find his place and conveying an impression of a dauntingly packed page.



The two pages dedicated to reading consist of:

Left-hand side: A block to introduce the topic; A sentence using the new grapheme; The key word; The syllabic family.

Right-hand side; A table of new words; A text to reinforce what has been learned; A visual reminder of the new grapheme



The two pages dedicated to writing consist of

Left-hand side: Words to read and copy in joined-up writing; Two-syllable words to write and copy; Ditto.

Right-hand side: A space for a text to reinforce the writing of syllables based on vignette;

A dictation of words on the basis of vignettes

The Layout Plan

Now you have your basic structure and can draw up a rough layout for the entire book. This model is known as the “layout plan”.

Once again there is no need to respect the final format of the textbook, a smaller format will do just as well. If necessary refer to the layout plan for *Garabola*, which you will find at the start of chapter 1.

4. The Artwork

You now have an overview of what your book will be like, but the conceptual phase is still not over.

You have still to decide on the artwork, which is crucial so that you can write the text and so that you can request a first estimate from the printer (this is a compulsory part of conceptual work).

Now is the time to decide what sort of illustrations you need (diagrams, photos, etc.) and how they are to be printed (in one or more colours). We suggest the following procedure to ensure that your decisions are well founded.

Graphic Options Open to You

Consider firstly the options open to you to illustrate a textbook; these can be summed up as follows

	Colours		
Type of Illustration	1	2	4
Photos			
Realistic drawings			
Abstract drawings			

Purpose of the Illustration

Decide now what you want to achieve with the illustration; this will give you an initial idea as to which type would be best suited to your needs.

If, for instance, your primary aim is to impart information to the reader, you will find photographs (in history books for example) or abstract drawings (maps, diagrams, etc.) most suitable.

In a reading book, on the other hand, the illustration allows young readers to recognise visual elements from their own environment and thus to identify with the book at an emotional level. It facilitates the move towards the written word and helps young readers memorise certain written elements. The reader must thus be able to decipher the illustration with as little doubt and uncertainty as possible.

Realistic drawings, which allow the reader to select the relevant elements and discount any unnecessary information will often be more suitable than photos here.

Financial Considerations

The type or types of illustrations you have selected can be printed in three different ways: either in 4-colour, which will give you colours that are very close to natural shades, or in two colours, generally black and a light colour, or in one colour, which is usually black.

Sometimes the purpose of the illustration will force you to use colour; usually though your choice will be guided more by financial considerations, taking into account the following points in particular.

Image Processing

Your illustrations must be prepared for printing; for monochrome printing you can choose line photoengraving if your illustrations involve only black lines. If, however, you want to lend some depth to your illustrations you will need shades of grey; this is called halftone gravure, and is more expensive.

When illustrations are to be printed in two colours, the preparation of the colour inks and the screen will often give you good value for money; this procedure is significantly cheaper than 4-colour printing, especially if the screens are produced manually, as is often the case in developing countries. The uninitiated often think of the result as a “colour” illustration, without making a distinction between this and 4-colour printing.

4-colour printing involves separating the colours, and producing three negative films with the positive images printed in magenta, cyan and process yellow, to which black is added to give depth. This procedure is complex and we will not go into details here because we do not consider this a priority for you, it always being an extremely costly operation.

We cannot urge you enough to keep a close watch on costs, and to accord financial considerations the importance they deserve. In our experience, authors, anxious to produce a really worthwhile book, often reject out of hand reasonably priced options, which they associate with mediocrity. Sometimes they produce entire books in colour, and then cannot find anybody to finance them. Sometimes, the authors simply refuse to listen to reason and insist on having at least one page in colour in the book; they consider this a modest and acceptable request without realising that it is not enough to produce the colour drawings, but that they must be processed and printed, and that this can be extremely expensive as we will see in the next section¹².

**Sobriety should not necessarily be equated with mediocrity in the field of graphics
Consult your printer again to ensure that your artwork decisions are well founded**

Printing Costs

You should also look at the costs of printing per se.

In particular, you should be aware that for 4-colour printing each sheet must go through the presses four times with different elements being printed each time. That means that the printer must prepare his presses four times: the presses must be scrupulously well cleaned each time¹³, the new elements to be printed (films or plates) fitted, the presses regulated, set, and of course the colours printed separately. For limited runs, the costs can be exorbitant¹⁴.

Two-colour printing, on the other hand, lightens a purely monochrome print, by using black (and the various shades thereof in grey tones) and orange (and the shades from a very bright orange to the palest hue). The result is sometimes perceived by an uninitiated reader as being a “colour print”. Although the procedure is considerably more complex than monochrome printing it offers better value for money than 4-colour, especially in developing countries, where the screens are prepared by hand, making them fairly cheap.

Imposition

You may not plan to use colours on every page. If only some illustrations are to be reproduced in colour, you must identify which illustrations and which pages are involved.

You should then ask the printer about his imposition, i.e. the way pages are arranged on the sheets of paper for printing. Try to put the illustrations to be printed in colour on one sheet of this sort, since this can make for major savings¹⁵.

Paper and Printing

If you are considering 4-colour printing, do not make a final decision until you are certain that the paper and the printing are of good quality.

There is no point in 4-colour printing on poor quality paper or under mediocre printing conditions

The paper must not look like blotting paper and must be sufficiently opaque for the printing not to shine through onto the other side; "bulky news" (the paper used to print newspapers), for instance, which is transparent, browns rapidly and laps up ink is no good for 4-colour printing. The printer too, must have the skills and equipment required: for colour printing the printing presses must be extremely well regulated, and it is very, very difficult to set them with the precision required so that the blocks or plates match exactly. If they do not match exactly the reproductions of the various colours will be blurred and fuzzy.

If you cannot be sure that your printer can guarantee all these conditions it would be irresponsible to invest in expensive colour printing, the results of which will never justify the scale of the investment.

Don't focus on one single textbook. Take the entire series into account

Long-Term Planning

Finally, even if your budget today allows for four-colour printing, you must be sure that you will have the money tomorrow as well for reprints, which must then also be in colour.

This aspect is particularly important if you are preparing a pilot version. It may be easy enough to finance 3,000 colour books, even if the unit price is very high. In some cases, the need for 4-colour printing will only be seen during the testing phase¹⁶. In general, however, you should only use colour once you are certain that the revised version, which may involve a large run, can be financed. If you fail to look ahead at this stage you may end up having to redo all the artwork and remodel the original text; this is more than a revision, it really does involve rewriting the entire book¹⁷.

5. Provisional Costing

Until now, you have worked in a state of splendid isolation, as if you were the entire publishing chain.

For the first time now you must leave the confines of your office and make contact with the body which charged you with producing the book and with the printer. You must make the preparations for the manufacturing phase, checking whether or not the physical and graphic features you have decided on are acceptable from a financial viewpoint. The aim of this next phase will be to request a provisional quotation and ensure that it is within the limits of your budget.

To this end you will have to draw up your technical specifications, which will determine the costs of development and of manufacture.

Development Costs

In large publishing houses the publisher determines the costs of writing the manuscript and of the artwork. In other words this is the latest time to decide about the entitlements of the authors and the illustrator or photographer.

In general a distinction is made between the moral rights of authors and the royalties; the first entitles them to associate their name with the book that is considered to be their work, and the second could be considered remuneration for their work.

If you have worked on behalf of a private publisher, you will generally have to renounce the rights to your manuscript for a lump sum payment or a certain percentage of the sales price, in exchange for which the publisher will undertake to print your name in the finished work, among other things. If, on the other hand, you are a civil servant and produce textbooks within the scope of your normal duties, the ministry may not recognise your literary or artistic property, considering that this would make too great a distinction between your work and the work of your colleagues, which is just as important but much lower profile (e.g. in the field of teacher training). In this situation, certain international organisations specialised in this field, e.g. UNESCO, may be able to suggest a solution that is satisfactory to both sides.

It is a complex subject and the situation is changing all the time. Given the special profile of "publisher-authors" in some developing countries, certain international organisations are starting to re-examine the rights accorded to authors working within state structures, with a view to upgrading their work. Contact the body which has charged you with producing the book and settle this issue without any further delay.

Manufacturing Costs

These costs will always be calculated by the printer, who will base his quotation on the four following factors.

Composition

This involves setting the text by computer, making the corrections required after proofreading and the composition and layout of these texts on the basis of detailed instructions.

By this stage you must know whether you will be submitting a typewritten manuscript to the printer and let him typeset it, or, whether, as is becoming increasingly common, you will write the text on a computer and submit the floppy disk to the printer. You must also decide whether or not you intend to set and compose the text yourself, and, if you are using monochrome illustrations without halftones, whether you will produce the imposition scheme or submit the text and illustration separately to the printer to allow him to assemble each page on the basis of your instructions.

The production of textbooks has changed drastically over the last few years, not only in industrialised countries, but also in the developing world. Whereas it was common practice in the 1980s to ignore computer-assisted printing, today it cannot be overlooked. Anyway large-scale textbook production projects all have computer equipment.

A computer only facilitates and enriches your work if you know how to use it properly

If you are in this situation, you must be aware that computers cannot replace the creative process, neither as regards the concept nor as regards the writing and layout of your book. It can, however, facilitate your work, if used properly since it will help you transform your own manuscript into copy, and will allow you to visualise your layout very rapidly. But, if you do not have a good command of the programmes used and are quite unfamiliar with at least the basic principles of typography, you can easily fall into one of two traps - either you will magnify your already crushing workload as authors, or you will not be able to make good use of the many graphic options the computer offers you.

Printing

Under this heading the printer will look at three items: the inputs, such as ink, the costs of labour and materials needed to undertake the preparations for printing, (preparing films, process work or plates), and the labour costs of printing the book (the inside pages and the cover).

The printer must know what size the run is to be, i.e. how many copies are to be printed, before he can calculate his costs.

Finishing

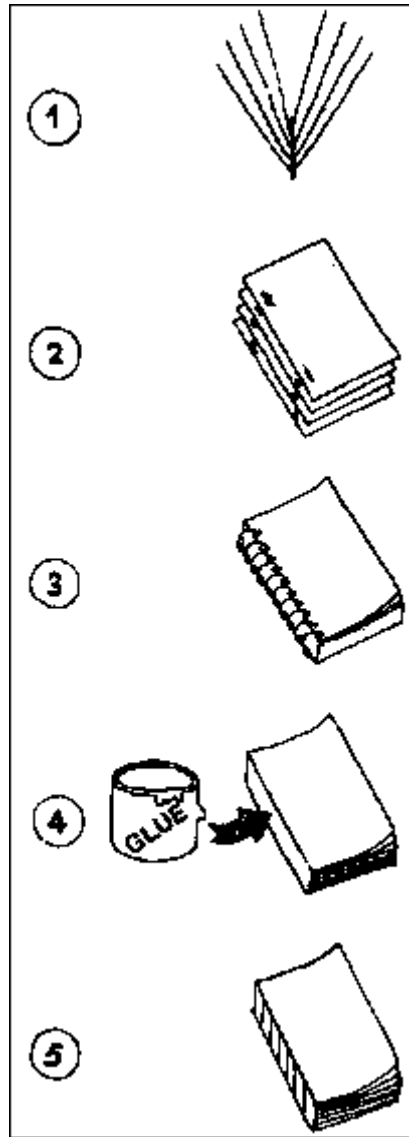
This heading includes all the costs of folding the signatures, putting them together to make the body of the book, and binding the finished book.

Educational materials need a firm binding

You should pay particular attention to the binding of your book - it would be madness to jeopardise all the work you have already put into the development by choosing the wrong binding.

The world of binding is complex, but we can sum up what you need to know as follows (see illustrations on the following page):

- Saddle stitching with staples is cheap, but there is a danger that the pages may fall out if the staples are too short. It is not suitable for thick books, since, when you come to trim the book, you will have to trim the pages in the middle more than the outside pages; this is unaesthetic and can be dangerous if the margins are narrow, since you run the risk of trimming away some of the text. (Fig. 1)
- Signatures can be block stitched (i.e. stapled flat) and then stuck together to the covers. This is a firm binding, which is relatively cheap, but it has the disadvantage that it is difficult to lay the book open on a table. (Fig. 2)
- Spiral binding is another option. It is the most expensive option, unless you are having a limited run printed and you have the equipment to allow you to insert the spiral binders manually; you could use this option for a pilot run of a few hundred copies. (Fig. 3)
- The pages can also be cut at the spine and then stuck. This is not too expensive and good quality adhesives are available today, but it is not recommended for school textbooks which are often handled roughly and may well start to lose pages rapidly. (Fig. 4)
- The signatures can be sewn with thread and then either sewn or stuck together. Stitching is expensive but it is the firmest option. (Fig. 5)



Paper

This heading covers not only the price of the paper, but also the cardboard used for covers and any treatment required (e.g. reinforcing the cover with plastic).

Again, find out about the main features of the paper from your printer (whiteness, thickness, tearing strength, impermeability, smoothness, price). Ask him what quality of paper and cardboard he can procure.

The quotation you are given should be considered provisional; it is a guideline for you to help you ensure that your decisions are well-founded, and to allow you to make any necessary modifications.

The instructions you give the printer must, however, be as clear and complete as possible - as should his quotation. If you do not pay enough attention to this point you may have a nasty surprise later, and you may not be able to pay the additional unforeseen costs.

6. Medium-Term Planning

You have made all the decisions regarding the physical and graphical aspects of your book - you may consider the conceptual phase over.

But, we would recommend that you draw up a medium-term work plan, i.e. up to the distribution of the books to schools, to ensure that the actual writing phase, which is about to start, runs smoothly without any major hiccups.

Make a list of the people who are going to be involved as from now in the development of the book and, finally, plan your activities as carefully as possible.

Actors

You should contact the individuals and bodies listed below at this stage, to ensure that they can provide their inputs on schedule.

Illustrators and/or photographers

Ideally, these individuals should be part of the team of authors from the start, but in practice they are very often brought in once the first draft of the texts is finished at the earliest.

You must select the people you want now, to ensure that they will be free to work with you when needed. It may take some time to select them. If you are working on the first book in a series, you should perhaps run a competition and then check in the field that the style of the illustrator you have selected corresponds to the preferences of the target group. As you will see from the time schedule for the development of *Garabola* in Table 22, this can take a lot of time.

Resource Persons

These individuals will review your manuscript and help improve it. They will include proof readers to eliminate typing and printing errors, educational advisers who will ensure that the book is appropriate for the teaching and learning conditions in rural areas, subject specialists who will focus on the contents, etc.

We recommend that you look for these individuals at as early a stage as possible and that you obtain their agreement in principle to work with you. We will look at the cooperation with them in more detail in the next chapter.

Work	1986			1987												
	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12
Illustrators competition	■	■	■													
Presentation of illustrations in test schools				■												
Selection of an illustrator				■												
Development of texts and exercises				■	■											
Rough illustrations				■												
Writing parts of book not destined for pupils					■											
Manuscript read by animateurs working in test zone					■											
Presentation to official committee for approval					■											
Changes						■										
Final layout						■	■									
Final version of illustrations						■	■	■								
Preparation of imposition scheme								■								
Preparations for printing at printer; control									■							
Printing										■						
Finishing											■					
Definition of an evaluation strategy; preparing instruments												■	■			
Preparation for teacher training: 5-day courses															■	
Distribution of materials to test schools																■

Work Schedule for Garabola

Publishing Unit

If the publishing unit rather than the printer is to typeset your texts, you will have to ask it to do the following:

- firstly, once the first unit of the textbook has been written, the publishing unit will set it to give you an idea of the length of the texts and the provisional layout;
- once the entire manuscript is completed, it will set all texts, including those that do not address the pupils (introduction, table of contents, etc.);
- finally, once the proofs have been reread and corrected, it will make the changes you want and do the layout on the basis of your detailed instructions.

In view of the fact that this unit is bound to have other commitments, lay down the approximate date on which you intend to submit your manuscript now so that the publishing unit makes time for you.

The Printer

Agree on the various things to be submitted to the printer, and the dates he can expect to receive them.

Work Schedule

By the end of the conceptual phase you should have drawn up a detailed work schedule, which will allow the textbook to be ready for the start of the academic year planned.

To give you an idea of the time needed, the table overleaf shows the planned schedule for the development and production of the pilot version of *Garabola*.

Don't take the contents of this table as a model, since working conditions vary from one country to another. Take them only as a frame of reference; in particular, look at the tasks listed and the time-scale reserved for each task and adapt these to bring them into line with your own situation.

**This is the time to organise the people who will read and correct your manuscript
Allow at least one year for the development and production of a first textbook**

7. In Conclusion

Detailed Documentation

You have now defined the contents and the form of your textbook, thanks to a systematic analysis of numerous factors.

To ensure that the quality of the development phase is as high as that of the conceptual phase, we recommend that you keep detailed records of every decision made. You can use two instruments to this end.

Logbook

You can keep a note of the key ideas in your work on a day-to-day basis in a logbook; you might note the reasons why a certain decision was made, any disadvantages it may entail, the repercussions for the teachers' guide, steps to be taken to put it into practice smoothly, etc.

These notes may be useful when the conceptual work is over and you begin to forget the odd detail.

Pinboard

If suitable for the way you work, you could prepare permanent pinboards to remind you at a glance of the framework for the texts and illustrations you are about to produce.

Keep a careful record of all decisions made during the conceptual phase

Notes

¹ Re-read the first point in the first chapter of this book to refresh your memory if necessary.

² The basic form of textbooks is always a rectangle, which creates a certain dynamism, rather than a square, which would neutralise tensions; for interesting ideas on this topic see Duplan, P. and Jauneau, R. *Maquette et mise en page*, p. 93-99. Paris: Usine Nouvelle, 1986.

³ We have adopted the distinction made by F. Richaudeau between the "legibility corresponding to the integral reading of the lines of a text, or micro-legibility, (and) a second type of legibility, which corresponds to the image of the page as a whole, or macro-legibility." In: *Manuel de typographic et de mise en page*, p. 9. Paris: Reitz, 1989.

⁴ The limits of readability, as stipulated by M.A. Tinker for primary school children in the USA are as follows:

Grades	Bodies of letters
1	14-18
2	14-16
3-4	12-14

Cf. Typography for children's books. In: *Bases for effective reading*, p. 155. Minneapolis: University of Minnesota, 1965.

This means that the largest lower case letters without ascenders or descenders should be some 3 mm high (body 18), while the smallest characters should be some 2 mm (body 12).

⁵ In chapter 7 where we will look at the basic concepts of layout, we shall come back to typographical options.

⁶ For primary classes in developing countries C. McCullough and C. Chacko suggest significantly larger characters than those proposed by Tinker, i.e.

Grades	Bodies of letters
1	36
2	24
3	18
4	16
5	14

Developing materials for instruction. In: Staiger, R.C. *The teaching of reading*, p. 172. Paris: UNESCO and Lexington: Ginn and Company, 1973.

⁷ Cf. Read, A. *A guide to textbook project design and preparation*, op. cit., p. 58.

⁸ The paper costs as a percentage of the total production costs are put at the following

for 1,000 copies	28.5%
for 5,000 copies	47.6%
for 10,000 copies	53.5%

In: Smith, D.C. Jr. *Les problèmes économiques de l'édition des livres dans les pays en voie de développement*. Paris: UNESCO, 1977.

⁹ The most common paper dimensions in the "A" series (in mm) are as follows:

A0:	841 x 1188
A1:	594 x 841
A2:	420 x 594
A3:	297 x 420
A4:	210 x 297
A5:	148 x 210

¹⁰ There are, of course different ways of folding, cross folds, former folds, etc. It may be a good idea to use a combination, but the printer will have to plan for the necessary folding and inserting, and calculate the costs. Contact him and check that you have not made a mistake in either your choice or your calculation as to the number of pages.

¹¹ There are ways and means of not using a 16-page signature for non-text information; the printer is bound to suggest a half-signature (8 pages) for instance. If you are apprentice authors, we suggest that you do not go into this in any more detail, but that you consult the printer, and devote your own time and energy to tasks where you have no back-up.

¹² Beware of yourselves - authors who demand that their book be printed in 4-colour are always convinced that they are right and can easily fall into the trap of accusing anyone who

disagrees of thinking small, and wanting to throw a spanner in the works. Our most recent experience in this regard was a group of authors who wanted four-colour printing in a first-grade maths book because of pictures of butterflies in some exercises.

¹³ You must bear in mind that every additional step in the production, even apparently simple steps, can entail unforeseen complications. When fuel is sometimes rationed, for instance, the printer may be tempted to clean his machinery less scrupulously, since petrol is often used to clean printing machinery.

¹⁴ "4-Colour printing is approximately eight times as expensive as a halftone", In: Richaudeau, F. *Conception et production des manuels scolaires*, op. cit. p. 214. 1979.

¹⁵ Imposition can be extremely complex, and must always be performed by a specialist. Do not be ashamed of consulting a printer to find out more, if you are only an amateur in this field. Make sure that the printer has the knowledge he needs, which is - unfortunately - not always the case.

¹⁶ Colour may be considered unavoidable in a pilot book which aims to upgrade a local language in order to produce a book which will be as attractive to users as textbooks in European languages, which are almost always printed in 4-colour.

¹⁷ In 1979 in the pilot version of a 4-colour Quechua reading book the authors from the German-Peruvian Bilingual Education Project already mentioned chose the key word "puka" (red) to introduce the letter p and illustrated it with a red box. Since the revised version could only be printed in monochrome, this word and the illustration had to be changed, triggering a chain of modifications throughout the book.

Recommended Reading

Layout

DUPLAN, P. AND JAUNEAU, R. *Maquette et mise en page*. Paris: Usine Nouvelle, 1986

GUERY, L. *Précis de mise en page*. Paris: CFPJ, 1988

RICHAUDEAU, F. *Manuel de typographie et de mise en page*. Paris: Retz, 1989

Typographical Legibility

TINKER, M.A. *Legibility of print*, Ames, Iowa: Iowa State University Press, 1963

TINKER, M.A. *Bases for effective reading*. Minneapolis: University of Minnesota, 1965

Manufacturing Costs

DURCHON, P. *Photogravure et impression offset*. Paris: Usine Nouvelle, 1987

SMITH, D. *Les problèmes économiques de l'édition des livres dans les pays en développement*. Paris: UNESCO, 1977

Author's Rights

ALTBACH, P.G. Copyright in the Developing World. In: FARRELL, J.P. AND HEYNEMAN, S.P. (Ed.) *Textbooks in the Developing World*. Washington D.C.: World Bank, 1989

COLOMBET, C. *Grands principes du droit d'auteur et des droits voisins dans le monde. Approche de droit comparé*. Paris: Litec, UNESCO, 1990

UNESCO *L'ABC du droit d'auteur*. Paris, 1982

To Sum Up

Once the authors have defined the subject matter to be covered by the textbook they are still not ready to start writing: they still do not know how long the texts should be or how to fit them together with the artwork. To allow them to write well-founded texts and avoid the blunders that a poorly planned assembly of texts and illustration would entail, they should draw up a model of the book.

Before you design each page, it is important to define the main physical aspects of the book as a whole, in particular the format and the number of pages. It is equally important to think about the graphic aspects, i.e. to work out a provisional layout and decide on the nature of the illustrations. Much of this work demands specialised know-how, which is why publishers contract specialists who report to the production manager and the artistic manager.

Teams of authors working in developing countries rarely have the specialist know-how for this phase, but they are always left with the responsibility when the publishing back-up is not forthcoming. Given the fact that few authors will have any back-up from professionals, such as a layout man, most of you will have to acquire a working knowledge of layout and printing techniques and methods. You should consult specialists in your country, especially the printer, and try to put their experience within a systematic framework by reading specialised literature among other things.

The conceptual work should culminate in two documents:

- A detailed work schedule covering the work of the authors and the external inputs required during the writing and manufacturing phases;
- A quotation drawn up by the printer with a view to confirming the decisions made regarding the physical and graphical aspects of the textbook, or to calling into question these decisions.



Writing the Text

During the previous phase you decided on the contents of your textbook and on the artwork, which enabled you to define the sequence of the learning matter to be covered, and to lay down a basic visual structure for the book. The phase you are about to start will be a continuation of this work, culminating on one hand in finished texts and exercises, and on the other in the sketches or “roughs” for accompanying illustrations.

The literary and graphic work during this phase must go hand in hand. In large publishing houses the authors are responsible for the literary side only, while the artwork is entrusted to a layout man and/or a graphic artist. In developing countries, however, authors are almost invariably responsible for both sides. In this chapter we will first look at the preconditions for creating what Richaudeau terms the “text-image couple”¹, before going on to look at the subsequent stages step by step.

Some of you will be sufficiently familiar with text-writing for it not to present any major difficulties. The visual presentation and illustration of texts and exercises on the other hand will be new ground for many of you, and difficult for all of you. You will have to understand the importance of bearing the visual aspect in mind as you write your texts. You will need to learn to do so by constantly weighing up the demands of the text and the presentation.

Even if you are no longer a novice where writing is concerned, we would urge you most strongly to read this chapter thoroughly, to ensure that you glean not only scattered pieces of information, but the entire systematic approach. Put yourself in the place of authors who have defined a detailed conceptual framework, and must now write, present and illustrate the contents of their textbook within a relatively short space of time; read the chapter from start to finish, point by point.

You must do more than write a text - you must fit text and image together to create a harmonious whole

Plan your writing

1. Overview

The phase you are about to start will seem impossible to structure for some of you, who believe that the texts and exercises will simply come together with time.

However, if you aim to produce high quality material within a given time-scale we recommend that you do not merely wait for inspiration to strike. Forget the romantic image of the literary genius alone in his garret and plan this phase as strictly as possible. By way of reference, we will, as always, give you an overview of the work involved taking the example of the work on *Garabola*.

Writing Garabola

We have selected this textbook as an example because of one particularly interesting feature - since this was their first book, the authors chose to take a systematic approach, trying to avoid any unnecessary delays for the education authorities. The often contradictory goals of quality and keeping to schedule forced the authors to tackle the writing and illustration work in tandem.

We feel that this approach, which is described in detail in Table 23, should not necessarily be taken as a blueprint, but it is interesting and may be useful for teams of authors working under time pressure.

2. Organising the Work

Once you have a general idea about the form your literary and artistic work should take, you can organise the writing work and decide what approach you wish to take.

Why, you may ask, can't we get down to writing the texts at last after all the research and the conceptual work? Because you must firstly define the framework, without which your subsequent work will be subject to inopportune interruptions. You should thus accept a certain amount of "lost time" at the start of this phase in order to guarantee optimum writing conditions. Look in particular at the following points.

Start by deciding how much time you will need for the writing phase

Rate of Working

Take stock of the work ahead of you, before you do anything else. Recall the number of texts to be written: for a reading and writing book with 24 units, for instance you will have to write 24 texts if you plan to have a single text per unit, or 48 or 72 if you plan two or three texts respectively per unit.

Then recall the principal features of the contents and the presentation of these texts: to take the above example, once again, look at the sort of texts (adventure stories, fairy tales, historical texts, scientific texts, etc.), the approximate space available for each text on the page, and the average size of characters to be used. You should then turn your attention to the number of exercises to be devised: if you plan to devise two pages of exercises for each of 24 units or lessons with three exercises per page, you will need no less than 144 for the textbook as a whole. Finally, you should count the number of general information pages and look at the length of texts on these pages.

Now and only now can you set the markers which will allow you to lay down your time schedule. You should either lay down a daily or weekly quota for the writing work, or set deadlines for the individual parts of the book.

23. Developing the Garabola Reading and Writing Book
Planning and Organising Writing Work
The authors started by defining the type of writing work to be performed and how they were to be fitted together. They set quotas in line with the work schedule drawn up at the end of the conceptual phase for the textbook as a whole. They also decided how they proposed to conduct the writing.
Writing the First Version of the Reading Texts
The authors settled down to write the textbook per se, starting with the reading texts. They adopted a systematic procedure, developing a list of criteria, identifying the topics to be tackled, deciding on the type of texts, writing and producing the artwork for a first unit which was then used as a model for the rest of the textbook, and then writing the other units. The authors then ran a series of checks on the texts produced.
Organising and Supervising Illustration Work
Since the illustrator had been selected and approached during the conceptual phase, the illustration work could start; he illustrated the reading texts while the authors devised the exercises. ² Collaboration between authors and the illustrator took the following form: a contract was drawn up in line with the work to be performed, the contents of the illustrations were stipulated as was their layout on the page, drafts were produced and any changes made, the illustration techniques and instruments were stipulated. Once the layout had been finalised, the illustrator produced the final versions of the illustrations.
Writing the Exercises
While the illustrator was preparing sketches for the reading texts, the authors started

<p>work on the exercises. They established a list of criteria, identified attainment sub-targets, defined the space available for each exercise, selected the type of exercise, developed the exercises, devised the presentation, and ran an internal check. The illustrator produced sketches for the exercises once he had finished those for the reading texts, observing the same procedure.</p>
<p>External Review</p> <p>Once the manuscript was completed, various people from outside the group of authors reviewed the texts checking the linguistic aspects (pertinence of newly created technical terms, correctness, clarity, uniformity of style), subject-related aspects (coherence and exactness of contents), and pedagogical and didactic aspects (suitability for the given teaching and learning conditions). Others reviewed the illustrations from the pedagogical angle (clarity, exactness and pertinence of the scenes or objects represented), and from the cultural and political angle (respect of local customs, representation of scenes that are applicable for the country as a whole and not just certain regions).</p>
<p>Writing General Information Pages</p> <p>The authors wrote texts for the cover and general information pages at the front of the book, taking into account pedagogical aspects (the technical presentation of the textbook), legal requirements (credits and copyright), institutional factors (preface and mention of the ministry), and editorial conventions (on the covers and all pages in question).</p>
<p>Preparing a Copy of the Manuscript</p> <p>Having examined the internal suggestions and those of the external reviewers, the authors modified the initial manuscript and had a typewritten version prepared.</p>
<p>Preparations for Official Approval</p> <p>To obtain authorisation to print, the authors prepared a file for the education authorities, containing a list of information and a hand-crafted mock-up of the textbook, on the basis of the typewritten manuscript and photocopies of the sketches. They were granted authorisation to print, the final layout was performed and the graphic work finished: the two files were then submitted to the printer to allow him to start work on the textbook.</p>

Whatever you decide, try to avoid two common errors a) under-estimating the volume of work which is not directly related to writing, such as organising external checks; just when you think you have finished writing, you will often need several weeks more to complete the manuscript; b) with reading and writing books, under-estimating the level of complexity of the exercises, and not planning the development properly.

Writing and illustration work progress in tandem

If you do not have good editorial back-up, this phase will be a busy one

Group and Individual Inputs

You have drawn up your time-frame for the writing phase, and now you can go on to define how you intend to meet the deadlines you have set, defining the interaction of group and individual inputs.

While nobody would question the value of group work, some of you may ask when and how texts should be written by the group as a whole.

You can answer this question by identifying the type of writing demanded by the situation. Here are three possible options, which we have used in the past: analyse them, and decide which one best meets your needs.

Group Writing

Each text is written jointly; the authors formulate the text aloud in the group and then modify it, until they can agree on a version which is written down and considered definitive by everyone in the group.

This procedure has the advantage of preventing individuals from getting caught up in errors and allowing everyone to identify with the final version. On the other hand it may provoke tensions in the group, if you do not listen to those who are not good at formulating their ideas verbally, or who cannot defend them well.

Sometimes group writing will appear unavoidable. When, for instance, you are defining key words and writing key sentences for a first reading book the text is subject to such strict limitations that it is difficult to work individually. In our experience group work, where texts are formulated aloud, provides the best forum for applying pre-defined criteria to the words and texts to be developed.

If you are in this situation, have a look at Table 25, which outlines the criteria to observe when developing texts for a reading book. Read these and adapt them to your own particular situation.

Individual Writing and Correction

Here, the texts are written by individuals, revised at individual level and then, perhaps commented on by the group.

Individual writing can jeopardise the uniformity of the texts

24. Work for which authors are responsible		
To allow you to gauge the scope of the work for which authors are often responsible during this phase, we list below the tasks from the previous table which fell to the authors of <i>Garabola</i> . We have made a distinction between the work they had to perform themselves and the tasks they only had to organise or supervise.		
No.	Task	Organisation and Supervision
1	Overall plan of texts and artwork	
2	Devising and writing reading texts	
3	Internal revision of reading texts	
4		Preparation of illustrations for reading texts
5	Correcting sketches	
6	Devising and developing writing exercises	
7	Internal revision of exercises	
8		Preparation of illustrations for exercises
9	Correcting sketches	
10		Revision of entire manuscript by externals
11	Writing general information pages	
12	Final changes to the manuscript	
13		Preparation of a typewritten copy of the manuscript and production of hand-crafted mock-up
14	Drawing up specifications for textbook	
15	Organisation and moderation of official revision session	

This approach is often favoured by authors who are not used to working as part of a team, who see it as a fair compromise between the individual work they are accustomed to and the inevitable group work.

It does, however, have many disadvantages; the authors, themselves immersed in writing, do not always have the distance and the calm needed to judge the inputs of others fairly, and are reluctant to contradict their colleagues and criticise them. Some texts are thus accepted with reservations and the finished product displays a lack of cohesion and uniformity.

You should only adopt this approach if you have the back-up of a good publisher who has the skill, the distance and the necessary authority to suggest the necessary changes.

Individual Writing and Group Revision

This approach involves every team member tackling the same text at the same time and handing it in without having time to perfect it; the individual inputs are then put up on the board and the group agrees on one text, or at least on a general direction, a basic text which can then be reworked to a greater or lesser degree.

25. Identification of Key Words in the Group
In reading books graphemes are generally systematically introduced with the help of certain words known as "key words". Team work is needed to identify these words. It is the best way to harmonise criteria as demanding as those listed below. ³
Productivity and interest for pupils
The key words must trigger a strong emotive response in the pupil. If the basic vocabulary of the pupil has been studied, you should refer to the results of this study and select the most frequently occurring words.
Pedagogical and didactic considerations
Key words must reinforce the new element which the pupil is to learn in the course of the lesson. If it is a consonant, it should be at the start of the word, or at least at the start of the syllable.
Simplicity of syllable structure
Wherever possible, you should select key words made up of V (vowel) syllables or CV (consonant-vowel) syllables; try to avoid CVC syllables, which would be an obstacle later when you come to splitting words into their component syllables.
Control of new elements
The new element which is the object of the lesson should, if possible, be the only unknown element in the key word; you should thus avoid choosing key words with more than one consonant or vowel elements which has not already been presented systematically.
Grammatical category
Most key words should be nouns. For semantic and graphical reasons, only a few verbs (verbs of movement for instance) would be suitable. Adjectives of colour should be used with caution: you must be aware of the type of printing that will be used, not only for the pilot version, but also for the revised version. Avoid adjectives of colour if the textbook is to be printed in monochrome.
Degree of visualisation
Nouns that cannot be illustrated should be discarded. Then, of the nouns that can only be presented visually in a moderately satisfactory way, only the indispensable ones should be retained. Bear in mind that liquids in general are difficult to illustrate, and can lead to interpretation difficulties when you are dealing with young readers who have had little contact with printed materials.
Unequivocal correlation between key word and its illustration
The relation between the word and the illustration should be unequivocal if possible. In our experience images of people are difficult in this way, so key words such as "people", "man", "woman", "girl" "boy" etc. should be avoided, since the images are subject to more than one interpretation.

This procedure has several advantages. Firstly, the short time allowed for writing prevents each individual from identifying too closely with his own text. Secondly the fact of putting up all the inputs prevents new authors being so awe-stuck by the process of intellectual production that they are paralysed: the writing work unfolds step by step before their eyes in a certain anonymity, which robs it of its mystery. Finally the revision phase, which is often much more extensive than the writing phase, allows all group members to contribute to the final version and identify with it.

We should, however, point out one major disadvantage: if the authors want to retain a high quality they must identify the best texts irrespective of the originator, and the text, once selected, must be re-worked for as long as necessary, while taking care not to jeopardise the group dynamics. This is only possible if the group is made up of individuals who are not only

of a high professional calibre, but who are also intellectually honest and extremely patient. In our experience all the charisma of an internal group leader is needed if the work is to run harmoniously over a longer period.

Working Language

If you are writing textbooks in a national language, it is conceivable that some members of your team may not speak this language. You will then have to agree on a common working language; this situation, common in projects which have received external technical or financial assistance is certainly not ideal, but it is sometimes unavoidable.

If, on the other hand, all the members of your group speak the national language in question, and this is accepted as the working language, other problems may arise to which you should be receptive. If the language in question does not have a long written tradition, it will often lack the technical terms you need, or these terms will not be precisely defined, lacking the background information which surrounds these terms in languages with a long written tradition. A certain laxity can result, which will prevent the national language from being an effective tool, consistent, diversified and precise.

Thus, if you are dealing with a teaching syllabus, will the language provide you with one word for "goal" and another for "finality"? Would you know how to say "sequence of numbers", "set of numbers", or "double-entry table", all terms which will be vital for first-grade maths? How can you express "key word", "word card" "word table" or "minimal pairs" so important for the development of reading materials?

Agree on the language of communication Identify key words together

If your work is too often interrupted by terminological considerations, you should analyse this handicap, and take appropriate steps, to allow you to complete your work. You can systematically record neologisms and put them on the board to force yourselves to use them; or draw up a definition of terms which you keep stumbling over. You can include these definitions in a glossary at the back of the teachers' guide.

Write directly in the national language to follow the logic of the language

Language of Writing

If you are producing a textbook in a language with no written tradition, it is common for only a few team members to be able to write it fluently. In this case, you should agree which language the inputs should be written in before you start to write.

This question is particularly relevant for texts which do not address the children, the technical presentation of the book for instance, and later for the teachers' guide. In the groups we have observed, we have noted two possible approaches to writing texts.

Translation

The inputs are written in the European language common to the entire group, and then translated into the national language in question.

The advantages of this approach are clear: a highly specialised pedagogue can, for instance, write a text on learning to read in English, French or Spanish, which can then be translated into the national language by a colleague who is less well versed in the theory.

It is a procedure with a two-fold risk, however. Firstly, some authors, finding themselves downgraded to resource persons and translators may lose their motivation and give up on the group little by little. Secondly, internal leaders may emerge and introduce a vertical element within the group which will further limit the opportunity for dialogue.

Step by Step Writing in the National Language

In this case, the texts are written step by step, as follows:

- common development of the criteria to be observed (in the European language)
- corresponding texts written (in the national language)
- verification firstly orally and then with the help of translation of certain passages into the European language, to check for congruence, followed by any corrections needed.

This approach too is less than perfect; in particular, if we take up the same example, the pedagogue is not always able to judge precisely whether or not his instructions concerning reading have been fully understood and correctly translated.

Yet, it is often more effective than translation. Firstly, it allows those in charge of writing texts in the national language to re-formulate technical information in their own language; they can move away from the initial wording and organise the information appropriately, following a chain of argument which will be better understood by readers, and especially by teachers⁴ - the local writers are in a much better position to judge this than the external specialist.

This formula also allows all those concerned to see themselves as fully fledged authors and thus to identify with the product which really is the result of a joint effort.

3. Texts Addressing Pupils

You have now organised writing and defined your framework. Your next objective is to produce a manuscript for all the reading texts, that has been revised by the group of authors.

To achieve this as methodically as possible, we suggest you take a step-by-step approach, as described below.

Criteria

Whatever the discipline and the grade, you must always base your pupils' texts on precise criteria. Do not simply agree that these texts should be dictated primarily by pedagogical and didactic considerations; take it upon yourself to conduct as exhaustive a study as possible and to draw up precise criteria.

To take stock of what your work at this level can involve, examine the list of criteria drawn up for reading texts in national languages, presented in Table 26. The list is long, but it is by no means exhaustive and may not be suitable for your particular situation.

Topics

You have identified the main features of the texts to be produced. To be one hundred percent operational, you must now draw up a list of the topics to be tackled.

In our experience, in primary school textbooks projects authors often start by producing a first reading book, in which the topics are defined by key words; this first book thus automatically reflects the everyday world of the pupils. In the textbooks for the following grades, these topics are repeated, for various reasons. Firstly the authors often see the texts as a way of achieving pre-defined language targets, primarily as a good basis for grammar and vocabulary exercises, and do not thus attach a great deal of importance to the selection of the topics. When national-language books are produced, the authors do not always manage to satisfy the contradictory demands of authenticity (as seen in the selection of topics related to the socio-cultural environment of the child) and openness to the outside world. They often opt for the endogenous to the detriment of the exogenous, and stay within the limits of the first book. Finally, most of them quite simply find it difficult to break out of the traditional topic framework of reading books for the primary level.

Two observations should, however, be made: in groups of authors, the selection of topics is rarely the result of systematic considerations, and the difficulty of the selection process is almost always underestimated. We again suggest a step-by-step procedure when you begin to select topics for the higher classes at primary level.

Select topics for reading books on the basis of precise criteria

Official Instructions

First of all check how the curriculum defines the role of the school within society, and see if detailed topics are listed as is often the case. If this applies to you, check whether you are bound to remain within the official framework and tackle a certain number of topics.

Type of “reading book”

At this stage you must decide what sort of reading book you want to produce. It may address solely native speakers learning their own language, in which case the aim will be to improve their reading skills, which will give you a lot of leeway to choose topics. However, when pupils have only a reading book and a maths book, you should consider whether a simple compilation of reading material is really the best option. You may chose to add texts which will introduce children to common scientific, historical and geographical knowledge for instance. This is a fundamental decision, which is bound to have repercussions on the choice of topics and on the curriculum.

Social Options

The topics broached in a primary-level textbook will help form the adults that the pupils very soon become, especially those individuals who will read few other books in the course of their lives. It is up to you to organise an in-depth discussion to define the factors which you believe should be given priority, where the curriculum is vague.

Openness to Innovation

Finally, bear in mind that it is difficult for authors of primary-level textbooks to find resource material: try not to fall back on your own experience and on the past. Read and re-read as much as you can, from legends to adventure stories, from extension manuals to foreign books, from cartoons to the best books written for children world-wide, to put you in a position to innovate as regards the content matter. Textbooks for the upper classes of primary level will always demand a lot of preparatory work here.

Development of a Model Unit

To sum up, you have laid down the approach you intend to take, drawn up a list of criteria and identified the topics for your reading texts. You can now start writing the texts.

26. Criteria for Writing a First Reading Book in a National Language⁵
Texts corresponding to the general attainment target
Texts must firstly be in line with the general targets set for reading in the grade in question. Thus, if the pupils are to learn to read and understand the literal sense of short, explicit messages, you should not produce texts that the pupil must complete to understand the meaning.
Texts corresponding to the specific attainment target of the lesson
Whenever the lesson has a specific reading target, the texts must meet these specific demands; thus if a new element is to be introduced, such as an upper case letter, the texts must allow for the systematic introduction of this element.
Controlled use of words
The words used must be in line with learning needs, i.e. a minimum of new words should be used at the start, and they should be repeated a number of times to imprint them on the memory of the pupil. ⁶ Elements which the pupil has not yet learned systematically should not be used. ⁷
Readability of words
The words should not exceed the maximum linguistic readability for pupils; in languages used world-wide the authors can refer to research conducted since the 1940s. In most national languages, special features will determine the readability of words. ⁸

Readability of sentences
The sentences too should not exceed a maximum level of readability: they should be short and have a simple morphological and syntactic structure. Here too you may find research done for world languages helpful, but in many national languages, the readability of sentences will depend on other criteria. Thus short sentences, used at the beginning of the learning procedure must make for maximum readability without being artificial or excessively simplified - a tall order for languages with a primarily oral tradition, which are not easy to dissect in this way.
Readability of texts
The texts must be clearly structured, with an introduction, however short, and an unambiguous conclusion; within the text the sentences should follow on one from another. If necessary the text will be divided into paragraphs, which will also follow on logically. Punctuation marks, which underline the structure of the text should be introduced gradually and with discretion.
Functional texts for teachers
Texts should be structured to make them easy to read in class. Thus, if a text is to be read at two sessions, it should be written accordingly, i.e. in two main sections, not counting the introduction and the conclusion.
Degree of visualisation
The words, sentences and texts must be selected to provide an appropriate degree of visual back-up so as to form a whole which meets both pedagogical and aesthetic demands.
Familiarity to pupils
The topics dealt with should be at least known to the pupil. In a first reading book, they will be dictated by the choice of key words and should preferably be taken from the pupils' immediate environment. Subsequent reading books should expand their scope gradually to take in the region, the nation and then other countries.
Variety of topics
The topics selected must be varied enough to hold the attention of pupils. This is a difficult criteria to meet in an entire series: authors frequently repeat themselves, with the result that the same topics are presented with increasing levels of difficulty in a spiral from the first to the last book in the series.
Idyllic past and glorified future
The texts should reflect today's world, which is often a world in transition. They should avoid any nostalgic descriptions of times gone by - which were rarely idyllic - and should equally avoid glamorising a modern world which is likely to be unknown to the majority of pupils.
Games aspect and topics liable to provoke conflict
The texts should firstly look at the universe of the child. It should focus on the happy side of childhood, but should not completely eclipse conflicts and the negative side - conflicts, problems and fears of childhood should be mentioned.
Respecting the environment
Religious and political topics should only be broached with great care and social taboos should never be mentioned.
Texts for children and grown-ups
The texts should be worthy of the child and the grown-up he will very soon become, because for many children in developing countries, given the rate of absenteeism, it is true to say that adult life begins after one or two years of schooling. In the books, anecdotes, recitations and games should thus alternate from an early stage with recipes and user's instructions, a literary genre with which they are most likely to come into contact in adult life ⁹ .
New fields of use
The texts should pay enough attention to the traditional role of the national language (poems, legends, descriptions of daily life, etc.) but should also look at roles more often played by European languages (slogans, puzzles, recipes, posters, invitations, etc.). In other words the national language should emerge from the domestic ghetto to which it is often confined and should be upgraded by bringing it into the domain of modern life, traditionally the realm of the former colonial language.

Initially stick to the first unit, which will be a sort of test ground for you, and adopt a three-step procedure: refer to the basic structure and work out approximately where the texts and illustrations will be; write the texts in question and decide on the contents of the illustrations; prepare the text with the size of characters required for the level in question, which will allow you to see the average length of texts in the book, and prepare a sketch for the illustrations.

We would advise you to tailor your procedure to the subject and the grade concerned. Thus, if you are responsible for producing a series of books for pupils learning their native language at primary level, you should distinguish between the two types of book described in more detail below.

First Reading Book

Given the primordial importance of the picture, which will take up a large part of the page and form a bridge between real-life and the new technology of reading, it is often preferable to work manually. You should thus draw up test pages in the correct format, and then write very short texts yourself, and make a rudimentary sketch of the illustration to accompany the text.

In view of the fact that this parallel approach to text and image often leaves a lot to be desired we have reproduced opposite the steps involved in the birth of one page of *Garabola*.

Books for Other Grades

When the texts are more dense, it is more difficult to assess the length. If you are working on a book for a higher grade, submit the first unit to the publishing unit, which should typeset it in line with your instructions. You can then re-work the text to ensure that it is of the right length, and make a sketch of the drawings planned.

Bear in mind that whatever the level involved, the texts and illustrations should always be developed together, following the basic structure.

Development of the Other Units

Taking your lead from this first unit and your basic structure you will now be able to write the texts for the other units without any major difficulties.

Revise your textbook, bearing in mind the needs and possibilities of users
Keep a careful record of your reading texts

We recommend that you compile the following, day by day.

Text File

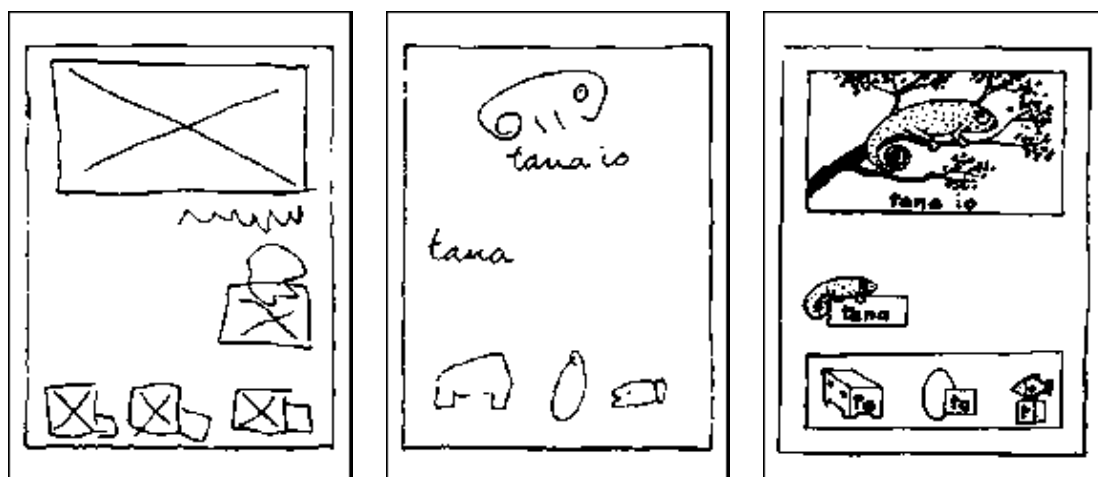
The texts selected by the group should be filed carefully, in a box file, for instance, and each of them accompanied by a sketch, however rough, of the scenes or items planned; a sketch is always better than instructions alone.

Logbook

We also recommend that you continue to keep the logbook you started during the conceptual phase. Document your work; in particular keep a record of the instructions you plan for the teachers' guide, which you will otherwise forget before you come to produce this guide.

Internal Revision and Changes

The concentration needed during the writing phase is such that it is generally impossible to stand back from the texts and check their quality thoroughly. You should thus wait until all the pupils' texts are finished before conducting a series of internal controls.



1. Conceptual phase - the contents and the form Contents are defined and a mock-up of the page completed.

2. A text-image unit is created and the text written Texts and sketches of illustrations completed.

3. Layout and illustration Text typeset, layout finalised and illustrations done in ink.

Remember, you cannot postpone this work; it must be completed before the other external revisers start their work. We would suggest that you examine the following aspects in particular.

Legal Aspects

Many of you will be well informed about the rights of reproduction and know that it is strictly prohibited to reproduce texts or illustrations without authorisation¹⁰.

Although authors do not generally infringe copyright, they may have absorbed existing texts to such a degree that they reproduce them, as they are, changing only details. Even if they are not aware of this, they will be guilty of plagiarising. Check that this has not happened with your manuscript: copyright infringement can result in expensive legal action and plagiarism is not the best advertisement for a group of authors.

This point, which is scrupulously observed in industrialised countries, is often ignored in developing countries. We have seen groups of authors, who did not pay attention to this point being tripped up by harsh reality at a later stage. To ensure that what is often nothing more than ignorance does not become a time-bomb ticking away under your work, find out about the basic principles of reserved rights; the books listed at the end of the chapter may be useful.

Do not copy or plagiarise

Social Options

You should also review the social options which you will automatically have selected as you wrote. Analyse the roles which you have attributed to the various protagonists: look at the number of times each of them appears in the texts and sketches, look at the occupations of mothers and fathers, of girls and boys, etc.

Then take a hard look at the social image reflected by the textbook: analyse the role of institutions, first and foremost the school, look at the angle you have taken on authority, be it parents, teachers or village elders; and look again at the way you have responded to certain crucial topics of today, the most important being the protection of the environment.

If you now, in retrospect, see serious imbalances or omissions in the texts, correct them - you still have time. You can either modify them or change graphic elements, which will sometimes

be enough to redress the balance of the text-image unit. If, for instance, you wish to upgrade the role of women, and you note that there are fewer women than men in your textbook, you can redress this balance by making women figure more often in illustrations. Be careful in your choice of setting for these illustrations though. If you wish to upgrade the status of women do not show them performing only menial work.

Linguistic Checks

If you are producing a first reading book, you should pay particular importance to linguistic checks. First of all, count the words used in the book, and then look at the average length of these words, classifying them by number of syllables. List the words used only once and try to limit these. Look at the intervals at which words are repeated, etc. If you are producing a textbook for upper grades look again at the linguistic readability which you considered in advance, and see if you have respected your own criteria.

If, on the other hand, you are producing a book in a language with no written tradition, you should run specialised linguistic checks, for which it may be difficult to find back-up literature.

Given the importance and the complexity of the subject, we will take the liberty of dwelling on it a little in the table on the following page.

4. Exercises

The first version of the reading texts has now been completed. If your time schedule permits, you can put these on hold and concentrate on the rest of the book. If you are working under time pressure, as will often be the case, however, you should first finalise the artwork, adopting the procedure laid out earlier, so as to ensure that the illustration work can run parallel to your work on the exercises.

Writing exercises, unlike copying or traditional “fill-in-the-gap” exercises demand special skills. Since there is little specialised training available in this field, authors with the skills required to design good exercises are equally extremely rare ... and those who appreciate the degree of difficulty of this work are even rarer.

We see the results of this shortcoming everywhere: in some European textbooks the objective of the exercises is anything but clear, the mechanism used is sometimes overly complicated, the games aspect is often poorly represented and even errors are not unheard of¹¹; textbooks produced in developing countries often dedicate a limited space to exercises, and reflect a certain disarray on the part of the authors.

We can only repeat that it is extremely difficult to design good exercises, much more difficult than to write texts for reading. The approach we suggest here will certainly not solve all your problems, but we hope that it will allow you to avoid the worst pitfalls and errors.

Choose an easily understood mechanism and an appropriate form of presentation for your exercises

Drawing Up a List of Criteria

As is the case with texts, you should never start designing exercises without first drawing up a list of criteria, which should be as precise as possible. The quality of the exercises in your books will depend firstly on the quality of these criteria. You should thus approach this first step with the rigour and the meticulousness it deserves.

Some criteria are general in nature, and can be applied to any subject and any grade: the exercises for instance must always reflect a clearly defined attainment target. Others, however, will be determined by the particular nature of the material you produce. If you have decided to present exercises in the textbook and have rejected the idea of producing

expendable materials such as separate exercise books or cards, one criteria of your exercises will refer to the mechanism: you must reject out of hand all exercises requiring the children to stick things in, fill in gaps, join up, colour in or circle anything - a criteria which sometimes causes authors in developing countries enormous headaches as you will appreciate in the course of your work.

We look in more detail below at the general criteria that should be taken into account for primary-level textbooks in developing countries; as you will realise the list is by no means exhaustive and not all points will be relevant in every set of circumstances.

Examine them, adapt them as well as possible to suit the cultural, linguistic, pedagogical and didactic features which you must respect in your textbook, and supplement them as necessary.

<p>27. Linguistic Checklist for a Manuscript in a National Language</p>
<p>In view of the fact that textbooks venture out into the world beyond the school yard, they can be deemed to play a primordial role in the normalisation and standardisation of national languages. The authors must thus help create a coherent, homogeneous and dynamic linguistic environment.</p> <p>Some of you will be able to consult a language planning institute or the linguistics faculty of a university¹² while others will have to solve the problems they encounter alone. In either case you should pay particular attention to the following aspects.</p>
<p>Spelling</p>
<p>Without a solid spelling system there can be no proper readability: the human eye which can easily memorise the contours of words stumbles over words written in diverse fashions with no rhyme or reason, and the reader is unsettled, particularly if he is only a beginner. It is thus important to read and re-read your manuscript, and to have it read by others to ensure uniformity. You will always come up against awkward cases, which cannot be solved with the help of your reference tools (at best a dictionary and a grammar book) alone. Ensure that the two following aspects at least are standardised:</p>
<p>Separation</p> <p>Check the criteria for separating elements, particularly in nouns and composite verbs, and ensure that you have used hyphens and apostrophes consistently throughout. If you intend using justified type, in columns, decide at this stage what criteria are to be applied to hyphenation and ensure that these are strictly applied.</p>
<p>Borrowed words</p> <p>National languages always borrow words from the European language with which they come into contact. In general, there is no homogeneous rule for writing these words: uncertainty rules as to whether to take the original spelling or whether to adapt it more or less to fit the phonology and spelling system of the national language. Although it is not your profession to establish spelling standards, it is up to you to make the language first and foremost a valuable learning medium, by observing strict and consistent rules regarding the form of borrowed words, verifying that these are in line with official norms where any exist and that these forms are acceptable to the users of the national language, in particular to teachers.</p>
<p>Inventing Words</p>
<p>National languages almost always have a vocabulary that is too limited to meet all cultural and technical requirements. You may thus be forced to invent some words, either resorting to borrowing the term from the former colonial language and adapting it, or neologising, i.e. creating a new term from the roots of the national language itself.</p> <p>Although the process of creating technical terms is considered obligatory, positive and quite normal in strong languages, it often appears artificial in national languages. The readability of texts, particularly those which describe modern technologies (user's manuals, recipes, etc.) may suffer two weaknesses: newly created words may appear clumsy, and may not be accepted immediately by the reader, or the texts may be too liberally scattered with new, unfamiliar words.</p> <p>It is a good idea then to make a list of these words, to check that they do not already exist in another form, to check that they are correct by circulating the manuscript to have it read and to limit the number of these words used.</p>

Official Language and Variants

Most national languages exist in regional and local variations alongside the one variant that is recognised as more or less official. This situation has repercussions on textbooks since authors are torn between the need to normalise and standardise the language, which means making linguistic choices which will be binding for all users, and the needs of users who may reject the book if they cannot identify sufficiently with the language used.

This is an extremely delicate issue and we can only urge you to be vigilant; list words of limited usage, ask the people who re-read your manuscript for their opinion and be sensitive to the positive and negative feed-back.

Punctuation

Punctuation is a relatively recent development, it is true, but it is now an integral part of written language. What we often forget, however, is that each language has its own punctuation rules.

Few national languages have their own punctuation rules with the frequent result that authors apply the code of the former colonial language which they themselves learned at school; they only realise this at a later date when the punctuation rules that they know and that are appropriate for the European language in question causes dissonance in the national language. Before punctuation rules can be formulated in-depth linguistic studies are needed, which cannot be the task of textbook authors.

Once again, we can only urge you to be vigilant: firstly do not create rules which are unnecessarily at odds with those of the second language which the children will have to learn later; secondly bear in mind the fact that it is easier to create rules of usage than to modify them later, and thirdly beware of any uses which create vague feelings of unease; solve the problems as best you can and then apply the punctuation you have created uniformly since textbooks are a powerful force in standardising a language.

Spoken and Written Languages

National languages tend to be primarily spoken languages. You should complete your linguistic checks by analysing the level of language of your manuscript. See in particular whether the circular logic which is characteristic of oral discourse has been satisfactorily replaced by the linear logic common to written language.

Once again, there is no simple solution, and no standard advice except to keep your ears and eyes open to the reactions of the individuals outside your group who re-read your manuscript.

Attainment Sub-Targets

The first criteria of an exercise is that it correspond to a precise attainment target. Even if you identified learning steps during the conceptual stage, you will now see that these are too vague to be directly translated into exercises.

To allow you to work properly, you will thus need to break down the general attainment target into a number of sub-targets. To this end you will bring together the basic structure, which stipulates how many exercises are planned per unit, and the sub-targets, which you should list by priority, thus ensuring that the most important are tackled in the exercises.

Let us look at one example, to give you an idea of the practical significance of this recommendation. Let us assume that the general learning objective for writing has been defined in the following terms. "The pupil should be able to copy short texts legibly and correctly from a model in joined-up writing, and should understand the meaning." You should firstly identify the sub-targets regarding handwriting and those concerning written expression. For handwriting, you could identify the following sub-targets:

- Produce the round part of letters such as **a** or **g** with an anti-clockwise movement;
- Produce the ascenders in letters such as **b** or **h** and the descenders in **g** or **p** on the correct scale;
- Join up the letters within a word correctly

- Leave the space required between words and so on.

Having listed the sub-targets you should decide which ones are indispensable, and list those which could be considered part of the basic structure.

Identify the sub-targets for written comprehension in the same way.

Mechanisms and Presentation

The results of the last step should now allow you to begin devising the exercises. But, you may well ask, where do I start?

Your first task should be to identify a general direction for the first attainment sub-targets. If you already have some experience in this field you will be able to sketch these out fairly rapidly, and these will become exercises little by little. If, on the other hand, you are new to this work, and feel quite out of your depth we suggest that you look at the sort of exercises printed in recent textbooks. But be careful - you must not under any circumstances copy these exercises. Take them as a starting point by all means, add to them, change them, make them more detailed, so that they fit the bill for your specific situation and the language you are working in.

In either case though, do not simply accept the first mechanism that comes to you. Try to improve on this and keep all your drafts. They may be useful later, especially when you do the layout.

Devising Model Exercises

The activities outlined above should allow you to go on to devise the exercises for your first unit, which will give you a frame of reference for the rest of the book.

As you saw when you came to write the texts, you should adopt a three-step approach here. Firstly check how much space has been allowed for each exercise in the basic structure. Secondly look at your draft exercises and select those which best correspond to the principal criteria we looked at earlier. Thirdly either prepare sample pages in the same format as the book, or give the exercises to the publishing unit and let it do this where the exercises are longer. Sketch in the illustrations. Either way, this first unit will allow you to judge the average length of the exercises.

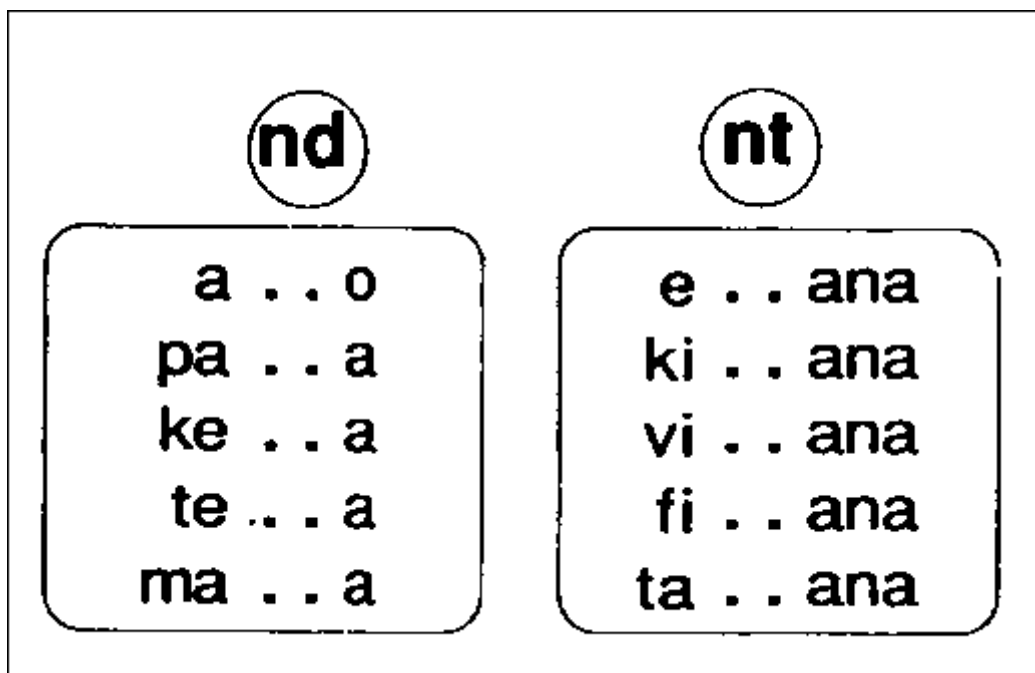
Step by step with the help of sketches, drafts and numerous new starts the exercises will begin to take shape

An exercise must meet a number of primarily pedagogical and didactic criteria

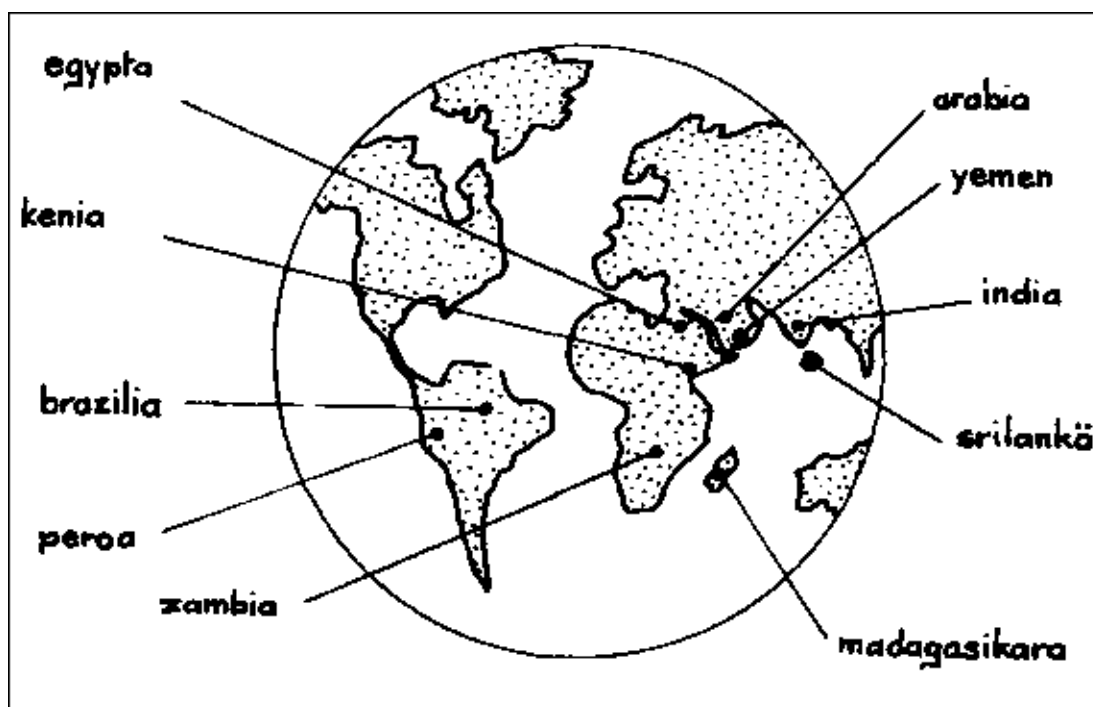
The exercises must also meet certain aesthetic criteria

28. Criteria for Developing Writing Exercises
Exercises must correspond to a detailed attainment target
This is the starting point for each exercise: every exercise must reflect a specific attainment target. An analysis of school textbooks shows how difficult it is to achieve this. The sole purpose of some exercises appears to be to balance a page aesthetically. Frequently they do not properly reflect the target set, and sometimes they tacitly reflect other targets.
Coherent sequence
Exercises must follow on, one from the other, in a logical sequence to allow a logical progression of new elements to be learned.
Adaptation to working conditions
The exercises must be in line with the working conditions found during the preliminary investigations, in particular as regards the time-table followed by the majority of the pupils, the average class size and the instruments available in most schools.
Ensuring optimum impact

Exercises should illustrate the phenomenon to be taught in an optimum way; it is thus important to identify not only the subject matter, but also the mechanism and the presentation best suited to enable pupils to achieve the target.
Mechanism that is easily understood by the teacher
The mechanism of the exercise should be immediately accessible to the teacher; explanations and information should not be needed to inform the teacher in detail about the mechanism, but merely to confirm what he has instinctively understood. This means that innovation must be kept within limits. If a book involves too many innovations there is a chance that teachers will not understand the exercise and will thus reject it, or that they will misunderstand it and use it incorrectly. ¹³
Mechanism that pupils can follow
The exercises must be in line with the level of maturity and knowledge of the pupils; thus exercises that are too easy or too complex must be rejected, as must those that would require too many explanations on the part of the teacher. Appropriate exercise types should be identified and repeated several times, perhaps with slight variations to avoid pupils wasting too much time and energy understanding the mechanism.
Games aspect
The exercises must meet the demands of the subject matter in question, and be tailored to the target group; if the latter is made up of young children, they will learn more rapidly and easily if the exercises have the appearance of a game.
Harmony of exercise-image entity
The presentation of the exercises and any illustrations must form a harmonious whole with the content matter; the form must not only meet aesthetic requirements, but should also help pupils to understand the contents and/or the mechanism of the exercise.
Harmony of the double page
Not only must the exercises follow a logical sequence, they must be placed in a harmonious fashion on each double page. For young pupils, for instance, care should be taken that the exercises which comprise only text alternate with text illustrations to make the pages "airy" enough.
Professional aspect
The presentation of exercises will implicitly convince readers of the professionalism of the team of authors. Sometimes we forget that certain graphic aspects of the book, including the presentation of exercises can be decisive for decision-makers who cannot necessarily judge other aspects of the book. Thus exercises that are too "home-made" in appearance should be abandoned and replaced with more sophisticated presentations.



Example of function exercises
 Transparency of mechanism: making and copying words (Tongavola p. 81)



Example of presentation of content matter
 World map to illustrate the use of capitals (Rosovola, p. 78)

As you will have realised, once again the form and the content matter go hand in hand. Take care to select a form which is both functional and aesthetic; the form must allow you to present the mechanism of the exercise visually or to illustrate the content. Here is an example of two exercises where the form is a good illustration of the content matter.

Designing the Other Exercises

You should be able to design the other exercises without too many difficulties now, although this is not always the case. During this phase, authors often encounter obstacles in terms of the mechanism, the contents or the presentation, which force them to make modifications. Let us assume, for instance, that the planned mechanism does not allow us to illustrate a phenomenon well: you will change it, of course, but this change may trigger a whole chain of repercussions.

You should not then be unduly surprised if you have to resume your work a hundred and one times before you have a final layout: this is more likely to be a sign of the quality of your work than a reflection of mediocrity.

Internal Checks

Designing exercises is almost always a long and extremely arduous task. Once you have completed your first version, try to stand back and run a series of internal checks. We suggest that you pay particular attention to the following aspects.

Subject Matter Check

Check that the exercises do not contain any errors! Force yourself to sit down and do them in their entirety, and if you intend to print the answers in the book or later in the teachers' guide make sure they are correct. These will be the errors that will leap out at every reader later, without their having to go through your product with a fine-tooth comb.

Pedagogical and Didactic Check

Check and see that the natural progression of learning has been respected; sometimes changes are made with the result that the exercises no longer correspond to the original sequence.

Once you have completed these internal checks, you can submit the manuscript to your external correctors. Prepare the manuscript and identify appropriate proof readers.

Graphic Check

Start by looking at the length of each exercise one at a time; make sure that the instructions are not longer than the shortest exercise. If necessary lengthen the exercise - three or four words do not count as a proper exercise! Thin out exercises where the sheer length is off-putting.

Ensure that there is a balance between the form and the content matter: modify exercises that take up too much space for a limited subject matter, for instance.

Secondly, look at the harmony of the individual page and the double page. In books for the first few grades, you should pay particular attention to alternating exercises with examples or special presentations (words in a box, or a circle, for instance). You should always ensure a balance between the exercises on facing pages.

Undertake to excel in all aspects of the exercises, correct them, polish them, re-write them entirely if necessary until you are completely satisfied

No three-word exercises and no “essays” of instructions that are twice as long as the exercises

Publishing Considerations

At this level, you can record in detail the illustrations, writing and layout for the exercises.

Look first at the number, contents and dimensions of text illustrations or other illustrations to be produced by an illustrator. You should also plan the volume of text to be written in cursive style: if you do not have a computer programme which can reproduce italics, some of which are in any case unsatisfactory, and all of which are costly, you will have to have these parts written by hand. In some countries this is the work of professionals.

Finally, you should check the complexity of the presentation of exercises and ensure that the publishing unit can reproduce the layout you have planned.

5. External Checks

You have produced the pages of text for the pupils, i.e. you have written the texts and sketched the illustrations, and you have produced the exercises, i.e. you have written them and decided on the presentation, and you are doubtless impatient to “see” the textbook, with the finished illustrations and the text printed on a word processor.

But let's not jump the gun. After all the months of working in a vacuum, you no longer have the distance to your product to undertake the final revision, which is so vital. And you have been cut off from the outside world for too long. You can overcome this dual problem, however, by getting experts from outside the group to read your manuscript: this will allow you to check the quality one last time, and to inform the education authorities of the status of your work and start paving the way to ensure that your finished work is well received.

One way to do so is to follow the approach outlined below.

Preparing the Manuscript

Revise your manuscript once again, check that all your changes have been incorporated and that it can be read profitably and without any major difficulty by individuals without publishing experience. Remember that the unfinished nature of the manuscript may unsettle some readers who will then focus all their attention on shortcomings in terms of the form.

Proof Readers

Once your manuscript is ready, identify individuals whose skills and authority make them appropriate proof readers. Select proof readers who can make valuable comments now and can help ensure that your book is well received later; the following people would be suitable.

Subject Specialists

Good specialists in the subject in question, from universities or the ministry will be able to give a well-founded assessment of your work, and identify any fundamental errors which other proof readers will probably not notice.

Education Authorities

Identify the education authorities whose support might be important when the book is introduced in schools and involve them in the production of the book by asking them to make their comments which can still be taken into account if they are pertinent.

Animateurs in Rural Areas

Make a special effort to gain the support of animateurs in the test zone; given their excellent knowledge of the area and their training, they are often best placed to assess whether or not the material is appropriate for the normal teaching and learning conditions. If possible try to reserve several days to re-read the manuscript in their company.

You should also bear in mind that the same amateurs will be responsible for supervising teachers in the test schools during the test phase, and that as such they should be involved in the process of producing a book which they will have to explain and perhaps defend.

Teachers

If you have produced a pilot book, you will plan to run a test in a sample of schools and then evaluate the results of this test phase. It is thus in your own interest to involve the teachers concerned in the production of the materials, by asking them for their opinion of the manuscript. Often it is not so much their comments per se which will be important, but the chance they are given to identify with the materials they will later be expected to use. This identification is crucial for the adoption of the material.

Parents

If you have produced a textbook in a national language, especially if it is a reading book, we recommend that you submit a copy to parents; this will often involve reading them entire passages.

This will have two major advantages for you. Firstly, parents' comments may make for a greater richness and authenticity of the texts¹⁴, particularly if you have distanced yourself from your native tongue and no longer speak it with total ease. Secondly, these information and sensitisation activities will often assure you of the interest and even the support of parents for your activities.

Groups of Children

It can be very interesting to have the manuscript read informally by children of the same age as the target group for which you have just produced the book. These children may be a source of important information, as regards in particular the complexity of the texts and their interests.

Reading Documents

To avoid generating too much confusion on the part of the proof readers who are not accustomed to re-reading manuscripts, you must inform them about your work and stipulate exactly what they are expected to do.

If you have time, you should then draw up two documents: specifications, identical for all proof readers which give a short presentation of the contents and the main physical and graphic features of the book, and an individual list of instructions, specifying the points you would like the individual readers to comment on, in the form of either a list of points to be examined carefully, or a series of detailed questions.

Logistics

If you wish all your efforts to bear fruit you cannot sit back yet. If possible contact your proof readers personally, ensure that they agree to help and define the terms of cooperation, in particular the time they have to read their copy of the manuscript and the date planned for pooling results. Stress that you are interested in constructive criticism rather than unfounded praise.

This phase, which in large publishing companies is the responsibility of the publisher, can mean a great deal of extra work for textbook authors in developing countries; sometimes you may have to undertake several trips into the field, organise trips to the main district towns, plan and chair meetings to pool results, etc.¹⁵. But, given what is at stake, we recommend that you plan and execute this work with the rigour which you have adopted throughout.

Think of organising proof readers as a mini-project in its own right

6. Writing the General Information Pages

After this phase of contact with the outside world you will have to return to your garret to finalise the manuscript.

You still have to write the general information parts, which generally make up the first few pages of the book and those found on the front and back cover. Pay attention to the following aspects.

First Pages

The first few pages contain the information which we looked at in more detail in the chapter on the concept of the physical and graphic aspects of the textbook.

Don't relax once the pupils' texts are finished - you still have to write the general parts of the book

Write these parts carefully, because they will be a visiting card of sorts for the entire book. These are the parts that will be examined first by all adults interested in your book.

Try to avoid any errors, such as incorrect page numbers in the table of contents, or omissions which will irritate the reader: you should always give the date and place of publishing for instance. And you should exercise great care when you write these texts so that the official information (a foreword signed by the minister for instance) is every bit as convincing as the more technical parts (a presentation of the contents to allow readers to use the book without the teachers' guide if necessary).

And one last recommendation is surely important: do not underestimate the importance of the table of contents. It is not enough to list the units and give the page numbers; give a brief overview of the contents of each unit so that the table of contents is a genuine reference tool for the reader, and, when the layout is performed devote an appropriate length of time to this issue, to find a presentation worthy of your book.

The Cover

Take care also with the text which will be printed on the cover. The two outside cover pages address the purchaser, so give him the information he needs: print the ministry of education's name on the front cover, or at least the name of the publisher, the title, a description of the contents (e.g. reading book with exercises) and the grade for which it is designed. On the back cover you can, if appropriate list the other books in the series and announce the forthcoming titles. The two pages inside the cover should be left blank if possible. Think of the first as an invitation to the reader to concentrate, and the last as a visual curtain closing on the book, which makes white the most appropriate colour. If you are forced by financial constraints to use these pages, leave as much blank page as possible¹⁶.

7. In Conclusion

The End of the Writing Phase

At the end of this phase, nothing is yet definitive. Your manuscript has undergone a first external check, but you can still modify it, add elements and remove others without losing time or entailing any extra costs.

If you need the authorisation of the education authorities to print your book, this is the time to submit the manuscript to them: you can still make any modifications at this stage. Later your choices will be more or less irreversible and any modifications that can still be made will be long, difficult and costly.

Check the procedures for printing your textbook at the end of this phase, and act accordingly before having the typesetting, layout and illustration work done.

Notes

¹ In: *Conception et production des manuels scolaires*, op. cit, p. 88 (in inverted commas in original text.)

² We look at the illustrations in more detail in the next chapter; whenever the time schedule allows, it is preferable for the illustrator to start work when the precise format and place of the illustrations has been determined. It is up to you to decide whether or not you have time to proceed in this exemplary fashion.

³ These criteria, which were initially drawn up to help identify key words in Quechua, can certainly be used as a reference for other languages. Cf. Châtry-Komarek, M. *Libros de lectura para niños de lengua vernácula*. Eschborn: GTZ, 1987.

⁴ “You argue, and we attempt to convince”, as one of the Tef’Boky authors summed up the difficulties of translating a French text with a linear structure into Malagasy for primary school teachers. Antananarivo, June 1990.

⁵ These criteria were systematically applied to the reading books produced for the first two years of primary schools in Madagascar, *Garabola* and *Tongavola*.

⁶ Many studies have been conducted on the controlled use of words in reading books for primary level: we would refer you, for instance, to McCullough, C. and Chacko, C. In: “Developing Materials for Instruction, In: Staiger, R.C. (Ed.) *The teaching of reading*. UNESCO/Ginn, Paris: Lexington, 1973.

⁷ Here is one example, to demonstrate how important this is. In Malagasy, the negation “tsy” (“not”) does not figure in the first reading book, because it includes the complex grapheme **ts** which is incorporated in the systematic learning programme for the second year. This linguistic restriction proved to be the most irritating when the texts were being written for *Garabola*.

⁸ This point is explained in more detail in this chapter in Table 27.

⁹ Non-school education must be one of the considerations of authors of textbooks for the lower classes at primary level. See Hummel, C. *School textbooks and lifelong education: an analysis of schoolbooks from three countries*. Hamburg: UNESCO Institute for Education, 1988.

¹⁰ A valuable book to read in this regard is Berthelot, J. *Petit guide a l'intention d'auteurs débutants et de quelques autres*, op. cit. pp. 59-69.

¹¹ Cf. Huot *Dans la jungle des manuels scolaires*, op. cit. p. 79.

¹² The modernisation of national languages is a long, complex process, which is rarely crowned with success; textbook authors, who may be the first to express an interest in this subject, are sometimes unaware even of the existence of a language planning agency. See also “Textbook writers and language planning”. In Rubins, J. (Ed.) *Language planning processes*. The Hague: Mouton Publishers, 1977.

¹³ All innovations must be recognised as such, even where you consider the new methods obvious and incapable of being misunderstood. We will just recount the example of one teacher who was given an exercise book for writing for primary one - something completely new to hear; the letter to be taught was presented in dots to allow pupils to practice by joining up the dots. For several months she taught her pupils to write letters in dots.

¹⁴ Textbook authors are often bilingual, but having undergone their education in a European language they have sometimes lost touch with their native tongue. If this applies to you do try to re-read your manuscript with groups of parents. They are an excellent source of lexical and syntactic information.

¹⁵ When the author is responsible for organising the proofreading phase, this work is almost always a veritable mini project, whatever the type of publication in question. The organisation involved in having this book proof read is a case in point; it was extremely time-consuming and took an enormous amount of energy.

¹⁶ For instance print the colophon, indicating the month and year and the authorised supplier.

Suggested Reading

Readability

DE LANDSHEERE, G. *Le test de closure*. Paris: Nathan, 1973

FLESH, R. *How to test readability*. New York: Harper and Row, 1942

HENRY, G. *Comment mesurer la lisibilité*. Paris: Nathan, 1975

RICHAUDEAU, F. *Le langage efficace*. Paris: Retz, 1973

Creating Technical Terms

CALVET, L.J. *La guerre des langues et les politiques linguistiques*. Paris: Payot, 1987

CHATRY-KOMAREK, M. Intentos de codificación del quechua en libros escolares. In:

LOPEZ, L.E. AND MOYA, R. (Ed.) *Pueblos indios, estados y educación*. Lima, 1989

CLAS, A. *Guide de recherche en lexicographie et terminologie*. Paris: ACCT, 1985

RUBIN, J. et al *Language planning processes*. The Hague: Mouton, 1977

UNESCO *L'emploi des langues vernaculaires dans l'enseignement*. Paris, 1953

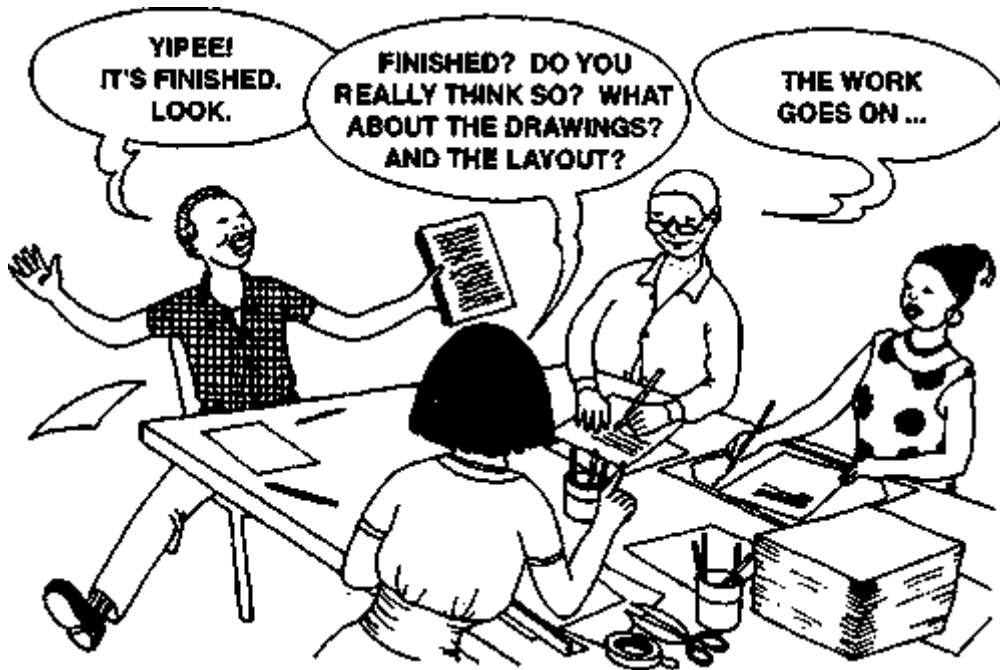
To Sum Up

The systematic concept drawn up for the contents and the physical and graphic aspects of the textbook allows the authors to move smoothly into the actual writing phase.

Among the many tasks of textbook authors, this is often the one they feel least apprehensive about, especially if they have been selected on the basis of their writing skills. This confidence is, however, often based on a misapprehension. Although the writing of texts and exercises is important, writing a textbook is not a purely literary pursuit; it must be accompanied by graphic considerations. It is important to deal with the form and the contents of each page together, such that the products of this phase are not merely texts and exercises, but an entity of words and images linked so coherently that we can speak of a "text-image unit".

We feel that three points are important to finish off this work, although the complexity of these tasks is often under-estimated. Firstly, a frame of reference and working conditions are needed which give free reign to the literary and artistic talents of authors. Secondly, certain procedures must become automatic, such as checking the position, length, presentation and accompanying illustrations for each piece written. Thirdly, a systematic approach should be taken to writing the texts and devising exercises, involving the following steps: drawing up a list of criteria, producing a model unit, doing the provisional layout, writing the other texts and exercises, performing an internal check, and identifying a group of external proof readers to re-read the manuscript one last time and make their comments.

At the end of this phase it is absolutely imperative that all authors' corrections be completed. This is why we recommend that all teams who must obtain the authorisation of the education authorities before printing their material submit their work at this stage, so that the latter has a chance of suggesting modifications which the authors can incorporate without entailing additional costs or losing time.



Preparatory Chain

Until now you have focused on both the development of the contents and the development of the graphic design, which has allowed you to produce the texts and the sketches for accompanying illustrations. At this stage you must put them both into their final form.

In large publishing companies this work would be split among several people: illustrators and photographers would complete the illustrations on the basis of the sketches, or sometimes just on the basis of the author's instructions; then, ideally a graphic artist would decide which typeface should be used for the texts which will be typeset by computer; finally a layout man would produce the layout. All these tasks would be organised and supervised by the Art Director.

In developing countries, the authors themselves generally plan, define and supervise the illustration and layout work. In this chapter you will find a presentation of the work involved, which we hope will be interesting for all of you. You should, however, realise that if you have no training in graphic art, this chapter alone will not enable you to solve all the problems you are bound to encounter.

Try to get some professional back-up, and, whether or not you are successful, make an effort to become familiar with the basic principles of graphic art; read this chapter carefully, consult the books listed at the end and examine the illustrations and layout of recently published textbooks.

**A finished manuscript is still far from being a printed book
It's an uphill struggle from the manuscript to the imposition scheme**

1. Overview

The preparatory chain involves all operations leading from the manuscript to giving the printer the go-ahead. This authorisation is noted on the final set of proofs, the blueprint, indicating that no more changes will be made and thus giving the printer the go-ahead.

This phase is long and complex, much more so than many authors realise, believing as they do that a completed manuscript is more or less a printed book. To give you an idea of the nature, scope and sequence of the tasks involved, we will proceed as always, starting with an overview. Once again we will take the example of the procedure followed in the Tef'Boky Project, which is laid out in Table 29.

The various tasks we describe here do not differ significantly from those found within large publishers, of course, but some of the steps taken by the project in an attempt to avoid the major pitfalls that beset the production of textbooks in developing countries may be instructive for teams without much publishing experience and for teams only able to ensure sporadic monitoring of the printing work.

29. An Example of the Chain: Garabola	
Illustration work	The illustration work, which commenced during the writing phase, continued parallel to the layout work. Little by little ink drawing replaced the sketches. The exercises which needed careful placing of text illustrations and text were illustrated once the layout was complete, and the letters, words and sentences to be written in cursive style were added last. Generally the illustration work was never finished until the job envelope is handed over to the printer.
Stipulating the final layout	The format of the book and the basic visual structure had been clear for several months; it was time to decide on the final layout; firstly the stencil was defined, i.e.

<p>the precise frame within which the text and illustration blocks were to be arranged; secondly the typographic characteristics of the text were determined. The manuscript was coded to ensure that all instructions were clear to the photocompositor.</p>
<p>Typesetting the text and correcting proofs</p> <p>The texts and exercises in the manuscript still had to be typeset by computer. Given the shortness of the text and the complexity of the layout, no running text was produced; it was broken down immediately into its final form. The proofs thus obtained were examined by each of the authors. This was a time-consuming task: firstly the authors were not professional proof readers and had to learn to track down errors; and since the Malagasy language is still undergoing standardisation, they had to check that standard linguistic criteria had been applied throughout (regarding newly created words, spelling and punctuation in particular).</p>
<p>Preparation of a pasteup guide</p> <p>The authors prepared a pasteup guide to be used as a model for the assembler. This is a more detailed version of the layout plan, in which every page is prepared on the basis of a photocopy of the texts and the illustrations. This model was extremely useful and made up to some extent for the absence of professional proof readers and layout men. It revealed the more serious graphic errors, forced the authors to correct some pages or reconsider certain typographic decisions; it also allowed them to identify the odd punctuation or spelling error, and correct it.</p>
<p>Pinboards</p> <p>Gradually, as the pages of the pasteup guide were finished they were stuck up on a pin board, until the entire book including the cover pages had been pinned up, double page by double page. This method had the advantage of giving a permanent overview of progress; the authors could find the pages which had not yet been put into their final form and the illustrations that were missing, and were also able to pick up that one last mistake which had slipped through the individual checks, or something in the layout which had to be modified.</p>
<p>Shading</p> <p>For financial reasons the interior of the reading and writing books produced in the Tef'Boky Project was printed in monochrome. The authors shaded the accompanying illustrations in three shades of grey; this gave depth to the pictures and marked the difference between reading and exercise pages, which have no shading. The authors themselves indicated how the shading was to be done on photocopies of the originals.</p>
<p>Preparing the job envelope</p> <p>The authors then prepared a job envelope for the printer. For every page of the textbook they prepared one large envelope containing four documents: the final version of the corrected text with layout, the corresponding original drawings, a photocopy of these drawings with shading instructions and the page layout, as a reference for the assembler. These precautions were felt to be necessary as a result of the poor communications with the printer, and because the authors were called away to other tasks almost as soon as the job envelope had been submitted to the printer.</p>
<p>Checking the blueprint</p> <p>In spite of the measures described above the authors asked the printer to prepare one last set of proofs, the blueprint. They checked these, ensuring not only that the montage was correct, but also that there were no omissions¹ or changes², before giving the printer the go-ahead for each page. Let us specify that after this the authors were only involved in very sporadic monitoring; even this, however, allowed them to pinpoint and remedy some errors which they never dreamt could happen.³</p>

As you will see, the work is long and relatively complex, and, in most cases, it is your team which will be in charge.

To help you understand the sequence better, Table 30 lists the tasks for which Garabola authors were responsible, broken down into those which they performed themselves and those which they only had to organise and supervise. Take a good look at this table and see what you can expect.

30. The Authors' Responsibility		
No.	Performed by Authors	Organised and Monitored by Authors
1		Finishing illustration work
2	Final check of illustration work	
3	Putting together the stencil	
4	Identifying typeface	
5	Preparing the manuscript for typesetting	
6		Typesetting text on a computer
7	Proofreading	
8	Preparing a provisional layout plan for the printer's assembler	
9	Mounting the make-up on a board and checking texts and layout systematically	
10	Instructing the printer about shading	
11	Preparing the job envelope, with one envelope per page of the textbook, containing all the pertinent documents	
12	Instructing the printer, submitting the job envelope and set-off sheet	
13		Providing the printer with imported inputs
14		Monitoring the progress of work from assembly to printing
15	Checking assembly on the basis of the blueprints	
16		Checking printing quality
17		Checking quality of finishing

2. Illustrations

Now you have an idea of the various steps leading up to the printer receiving a go-ahead, let us go back to stage one.

The illustrations will often be noticed first; make sure they are appropriate

The objective is to have the illustrations that you devised and possibly sketched during the writing phase completed. These may be photographs or drawings, which will then be printed in one or more colours. Within the scope of this publication, for the reasons given in the introduction, we do not propose to go into the technicalities of 4-colour printing, focusing on representational drawings in one colour, with shading or without, and in two colours.

All teams of authors must work with the illustrator, but their specific tasks will not always be the same. In large publishing houses the authors will give the illustrator instructions as to the illustrations that are to accompany the text, and, for technical drawings they may compile a dossier of basic information. In developing countries on the other hand the authors are often in charge of all graphic work.

If you find yourself in this position, here are the steps you will generally have to take.

Drawing up a Contract

As we pointed out at the end of chapter 5 you should have sounded out the illustrator during the conceptual phase. You will have selected the artist whose skills and attitudes are best

suitable to the job in hand. When he reappears on the scene, which will not generally be before the texts have been completed, your first task will be to draw up a contract. Generally artists work as free-lancers, and prefer to be paid by the unit, depending on the type and dimensions of the illustrations to be produced.

Most of you will not have to deal with the legal and financial aspects of a contract of this sort, since it is unusual for the authors of a book to be responsible for the financial side⁴. But you will almost certainly be consulted to ensure that the contract reflects the services actually required; you should proceed as follows.

General Presentation of the Textbook

Start by giving a thumbnail sketch of the textbook; inform the illustrator of which grade and subject it addresses, the format and the number of pages, the subject matter covered, the fundamental visual structure, etc.

Type and Number of Illustrations

You should then list the main technical features of the illustrations.

First of all, stipulate what type of illustrations are required: perhaps realistic scenes from everyday life, to be drawn in ink with shading which will later be screened and printed in two colours, or text illustrations accompanying the exercises, or models for writing lessons, to be copied in pen. Go through the book page by page with the illustrator and make as detailed a list as possible of the number and format of the drawings to be produced. This will be used as a basis for determining the illustrator's fee.

A carefully drawn up contract that is respected by both sides ensures good cooperation with the illustrator

The Tasks of Those Concerned

Stipulate the respective tasks of the authors and the illustrator at this stage.

At the outset it is essential that the illustrator appreciates that he must put his skills at the service of pedagogical and didactic criteria. He has not been contracted to "express himself" but to translate into images the more or less precise instructions you give him.

You should thus explain to him that together you will produce illustrations which best correspond to the visual decoding ability of the children in question. They must be in line with the average age of the children, with their degree of familiarity with printed materials and with the socio-cultural features of their immediate environment. It is up to you to decide, for example, if you feel it appropriate only to depict people in their entirety, to use unusual perspectives or to resort to caricatures - but the illustration work must always be based on an agreement in principle with the illustrator who is about to join your team. You are thus very much in charge of the illustration work, while the illustrator works within a pre-determined, limited framework and needs the transparency and complementarity of a genuine working group.

This has two important consequences: firstly you will have to determine all the features of the illustrations, and secondly the illustrator must agree to redo illustrations which do not correspond to your instructions. Make this point quite clear at the start to avoid working with artists who have not been properly informed about the working conditions and are too full of themselves or unable to knuckle down to the quality and time requirements found in the world of textbook production.

Finally, if you plan to print your textbook in two colours, you must decide who is going to be responsible for preparing the half-tones - you or the illustrator.

Many of you will be responsible for the entire preparatory chain

Methods and Steps

Now you have established the general framework of collaboration you can move on to the details of your work with the illustrator.

Firstly, you should decide where he is to work. If conditions permit, put him in the same rooms where you meet; this is the best way to ensure smooth and rapid progress. Secondly, decide what tools he will require, which of these your organisation already has and which you will have to provide him with. Finally, determine the various steps to be undertaken from the first sketches to the final version of the illustrations: nothing is more demoralising for everybody concerned than having to redo or have someone else redo a drawing which has already been completed in ink because the original specifications were not clear.

To ensure that deadlines are respected, you too should make changes only to the drafts and agree at the outset on the number of finished drawing which can be revised without incurring any extra costs.

Deadlines

Set a deadline for the submission of all original drawings and draw up a contract which covers all the points we have touched on.

Graphic Criteria

Once the illustrator has agreed to the terms and conditions, and has signed the contract you can start the illustration work per se, firstly drawing up a list of criteria to be respected.

Never under-estimate the power of the image. Remember that even if the texts in a book can capture the interest of an attentive reader, images do not need his attention or even his interest. They appeal directly to him, triggering an emotive response - attraction or rejection. Take great care then to draw up as precise as possible a list of criteria which will allow you to identify which elements should be given precedence and which should be ruled out to avoid the risk that the textbook will be rejected by readers.

In Table 31 you will find some of the general criteria which guided the illustration of the reading and writing books produced in the Tef'Boky Project. We have only listed the criteria we felt were most interesting for textbook authors in developing countries; read them carefully and see which ones apply in your case.

Sometimes textbook illustrations must attempt to reconcile the irreconcilable

Do not wait passively for the illustrator to submit his drawings - you must guide him

When the authors of the Tef'Boky Project began to draw up a list of criteria for the illustration of their textbooks, they differentiated between criteria which they felt were of universal validity, such as the concordance of text elements and drawings, and those which they felt were specific to developing countries. As you no doubt noted in the Table 31, the latter criteria are particularly difficult to respect since they are always somewhere between two extremes.

31. Main Criteria Observed when Illustrating Garabola and Tongavola
Realism vs. Idealisation
The illustrations must reproduce actual everyday life, removing any element which could be construed as demeaning, i.e. the reality depicted should be idealised while remaining realistic enough for pupils to recognise it immediately and identify with it.
Precision vs. Generalisation
The illustrations must have a high level of precision and authenticity, allowing the reader to recognise beyond any shadow of a doubt everyday life on Madagascar (habitat, customs, countryside, dress, etc.). At the same time, however, they must abstract every element that is too closely linked to any one region, the objective being not that every

pupil feels himself to be addressed directly, but that no pupils feel excluded by the life depicted. For Madagascar, for instance, no elements should be depicted which refer exclusively to either the coast or the high plateaux.
Traditional vs. Modern Elements
The illustrations must do justice to traditional instruments and work that are still in use, while adequately documenting the progressive introduction of new technologies; plastic and the radio have a legitimate place alongside dugout canoes and oxen-drawn carts.
Diversity of Visual Techniques
The visual techniques used must allow readers who have had little contact with printed materials to decode the illustrations without difficulty, but techniques should also be used which signal a certain leaning towards modernism and will familiarise pupils with graphic styles commonly used in industrialised countries. Thus, the perspective chosen should, for instance, be easy to decode, while making use of cartoon techniques to a certain extent (arbitrary cutting off of parts of the element shown, unusual perspectives, caricatures, etc.).
Humour and Criticism
Efforts should not necessarily be made to renounce humour and criticism, but you should avoid using elements which, although they may be widespread and generally accepted elsewhere are liable not to be understood or to be considered shocking in the context in question - e.g. the personification of animals, where extra care is needed. Care should also be taken that the reader, unaccustomed to a critical view of his environment, is not unsettled or insulted.
Childhood and Adulthood
Illustrations should be adapted to the children who the book addresses first and foremost; they should also be generally instructive and pertinent for children whose adult life often begins after barely two years schooling.

Identifying Scenes

Once the terms and conditions have been agreed on, and the criteria listed, you can go on to the next stage; starting to work in close cooperation with the illustrator.

To this end you should return to your texts and sketches, and examine them page by page. Start by arranging each drawing as exactly as possible on the page, and determining its dimensions. Then decide which elements must be depicted and which are at the heart of the text and must therefore be emphasised.

We recommend that you take seriously any reservations the illustrator may have. If he has major difficulties illustrating a particular text, look firstly for the reasons in your own work. See in particular if the text allows for an adequate degree of visualisation, and if it doesn't, rewrite it.

End this phase by ensuring that the illustrator has as precise a dossier of instructions as possible, in the form of notes or sketches, which will enable him to start work.

Correcting Drafts

Although illustrators generally go off by themselves initially to produce their first sketches and familiarise themselves with the book, it is important for them to re-establish contact with you rapidly. During this phase you should intervene at least twice in the following way.

Initial Instructions

To ensure that the illustrator is on the right lines, you must insist that he show you his first drafts. Examine them and let him know whether he can finalise these or whether he must take an entirely different approach. React quickly to avoid the illustrator continuing under false apprehensions.

Revision of the Final Drafts

The illustrator will often produce a series of drafts, which will become gradually more and more precise. The last of these drafts, which should be the more or less final version, must be examined in great detail: peruse them in the company of the illustrator to ensure that they are in line with pedagogical and didactic requirements and with the criteria you listed in advance. Specify any changes that will have to be made.

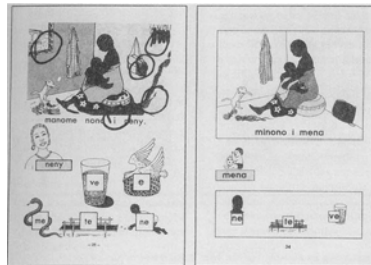
To give you a better understanding of your role as a supervisor of sorts during this phase look at the examples below; compare the pilot version with the corresponding pages of the revised version of *Garabola* and deduce the reasons for the modifications made in the interlude, indicated in the following figures by a circle.

You will have to make some corrections to the graphic artist's work

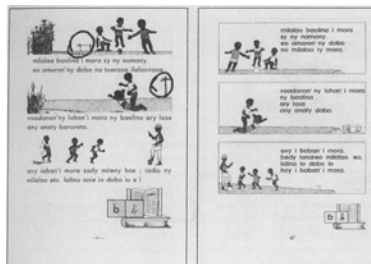
Examine each drawing carefully and be precise and consistent in your comments

Correct illustrations on the basis of precise pedagogical and didactic criteria

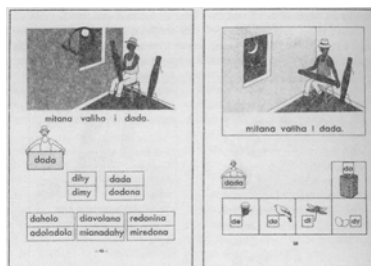
The illustration should help create a “text-image unit”



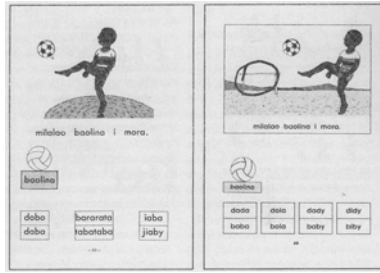
1. Remove secondary elements which obscure the relation between the text and the image.



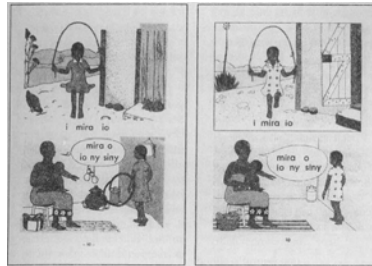
2. Remove any elements that are purely decorative.



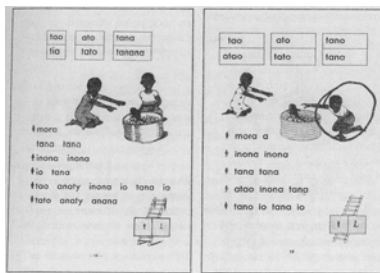
3. Select elements which make the object depicted as easily recognisable as possible.



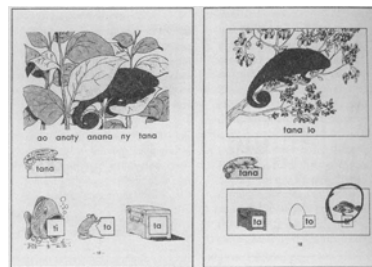
4. Add any elements that are essential to allow the reader to identify the scene.



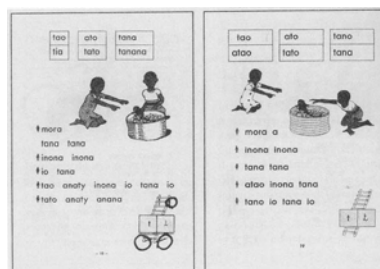
5. Outline elements that are central to the text.



6. Use images to reflect the dynamism of the text.



7. Check the exactness of specific elements⁵



8. Get rid of superfluous elements which distract the reader or get in the way of visual decoding.

Final Versions of the Drawings

To ensure that the arrangement of text and illustration is as perfect as possible, it is better not to start with the final versions of the drawings until the text has been typeset and the text layout finalised.

When the authors are responsible for supervising the illustrator they must not only examine the drafts and suggest any changes. They must also decide which tools the illustrator will need (Rotring pens, fountain pen, tweezers, etc.) and which materials are best suited to the printing procedures to be adopted (tracing paper, canson, etc.).

All originals should be kept carefully; simply note the page on which the drawing is to be printed, and make a photocopy before filing the original. If it is not modified in any way, it should be submitted to the printer at a later date in this state.

3. Layout

During the conceptual phase you will have laid down a fundamental visual structure for your book, which you will have developed in more and more detail during the various stages involved in writing and illustration. But the fruits of your labour are not yet ready to be published. If we can make a comparison with the world of haute couture you now have the fabric to make your dress and you have an idea what form the dress should take. But you still have to cut, sew and finish the garment.

During this phase you will “tailor” the page, deciding on the stencil, putting it together with the typeface you choose and finishing it by checking the arrangement of the elements on the page.

We cannot claim to present the fundamental principles of layout in a book like this; the field is much too wide. We will thus look only at what is essential for an author of textbooks, who alongside his many other roles finds himself responsible for the layout of his book, although he cannot claim to be a professional in this field. If you find yourself in this situation, proceed as follows.

Margins

Your first concern must be to decide on the margins.

All printed materials have four margins, at the top, bottom, left and right hand edges of the page. Margins give a book its particular style, and you should aim to find the proportions which will give the best possible balance and coherence.

The size of the margins can be set professionally; layout artists today still set the margins on the basis of calculations or diagrams, and many still refer to what has been done in the past⁶. You need not be so scientific in your approach, but you should respect three basic principles.

A good layout person seeks excellence in every layout detail Leave wide enough margins

Firstly, the outside margins on each page must be wide enough for you to hold the book in your hand without concealing the text. Secondly, convention dictates that the margins increase slightly from the interior of the page/towards the top called the “head” and from the outside of the page/towards the bottom, or “foot”: the most important thing to observe with margins is, however, that they present the text to its best advantage. A one-centimetre margin, for instance, is quite inadequate and will give your book a cramped look. Finally, once you have decided on the margins they must be respected throughout the book, from the first page to the last. In general nothing should be printed in the margins except the page

numbers, or “folio” as they are known and any headers or footers, such as the ones at the top and bottom of the pages of this book. These elements are arranged outside the frame set by the margins, known as a grid. If it is absolutely essential for some elements to go beyond the frame thus set, for instance if you decide to incorporate bled-off illustrations which cover the page in its entirety, you should ensure that they are positioned in such a way as to make the continuity of the grid easily recognisable for the reader.

Arrangement of the Various Elements

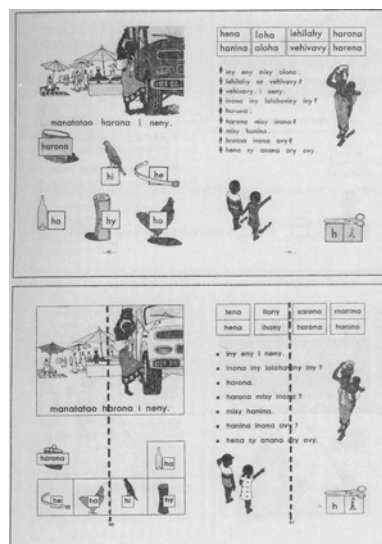
Having decided on the margin width you should turn your attention to the arrangement of the various elements on the page.

You have already decided on a basic structure which allowed you to produce texts of the required length, but now you must decide on the finer points, laying down the final arrangement of texts and illustrations. The aim is to find the positioning that best reflects your pedagogical objective, i.e. to find the layout that best captures the reader's attention and facilitates the learning process.

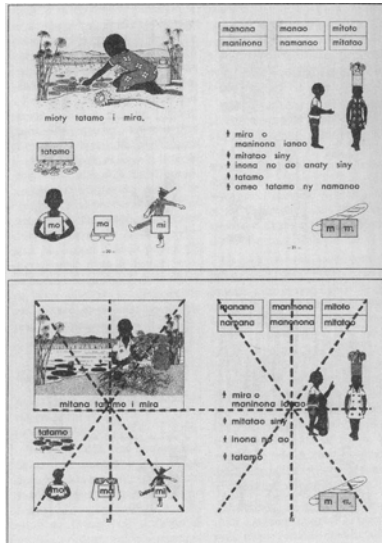
If the contents of your book are relatively heterogeneous, as is the case in a reading and writing book, for instance, the layout is bound to be complex. Nevertheless you should not position the various elements instinctively. Arrange them as though they were on a sort of invisible grid. In view of the fact that the reader will be confronted by two pages of the book at a time, you should design your grid for even and uneven pages.

Start by familiarising yourself with the concept of a grid. Just look at the first page of your daily newspaper, and you will see that the text is divided into a certain number of columns, within which and across which the headlines and illustrations are spread; these columns are repeated on the following pages and give the newspaper its identity.

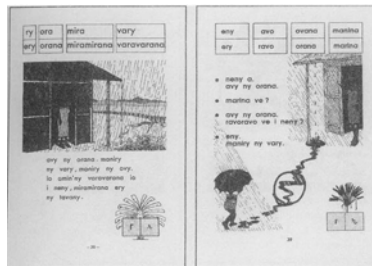
The grid for your textbook will never be as complicated as a newspaper grid, but you should have one to help you impose a certain discipline on your page and thus enhance the impact. The positioning of the various elements on this grid will not always be identical and rigorous; it will be a flexible distribution which may from time to time break with the basic structure without ever completely obscuring it and this will thus retain the attention of the reader without irritating him by introducing too many changes. On the opposite page you will find one example.



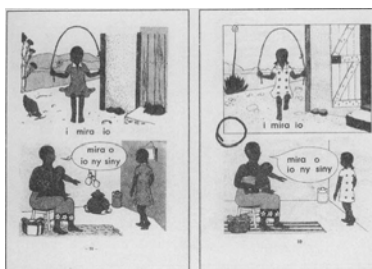
1. Decide on a basic structure for double pages; here we decided for two columns.



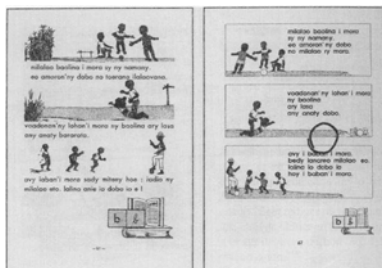
2. Position the various elements on your double page with the help of horizontal, vertical and diagonal lines of reference.



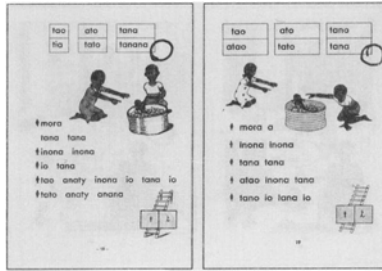
3. Avoid monotony and break with the basic structure, but ensure that it is still identifiable as such.



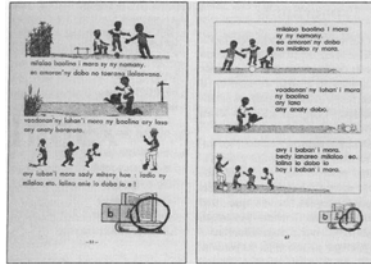
4. Make a clear optical distinction between the various elements on a page.



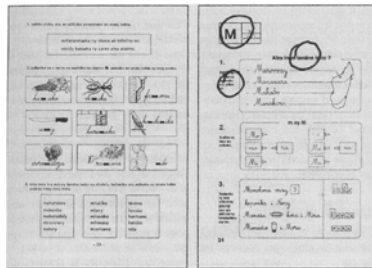
5. Bring text and image close together while respecting the requirements of both.



6. Respect the grid.



7. Balance the dimensions of the various illustrations on a page.



8. Use different sizes of typeface to indicate the relative importance of the texts.

There is no sure-fire recipe for a successful layout, you must gather experience and know-how and always examine the quality of the final product.

Given the fact that this book is not dedicated solely to layout, we have chosen to illustrate a few of the basic principles, again with the help of real-life examples. On the following pages you will find examples of some of the pages of the pilot version of *Garabola* for which the contents were arranged intuitively on the page by the authors, side by side with the final version where the layout was corrected by a professional⁷.

Compare the two and think about the principles behind the changes; they probably apply to your book too. Most changes are indicated by a circle.

Arrange the elements on the page according to a grid, which need not be unduly complex - two columns are perfectly adequate

Practice identifying basic layout principles if you have no recourse to a professional layout man

There is no sure-fire recipe for good layout: rigour and imagination are equally necessary

Moderation is always called for in layout for primary school textbooks

The layout must bring out the essential elements

The layout concerns all the elements on a page; don't forget to examine the drawings, texts and blank spaces on each page

4. Typography

By deciding on the precise margins and identifying the exact arrangement of the elements on a page, you have drawn up a plan for your book. You must now decide on the typographical features of the texts and exercises.

In a publishing house, this work would be performed by a professional graphic artist. If you are forced to make the typographical decisions you should firstly be aware that this is an extremely wide field, where research has been conducted for centuries, and about which more is being written today than ever before. It is a field that we cannot hope to do justice within the scope of this book any more than we could for the layout.

To avoid repeating information that you will find in any specialised literature, we have decided not to dwell on any details that are not immediately relevant for textbook authors. For reasons of clarity we will equally take only a cursory look at those typographical features which will feel are important for a first reading book. Read the following pages in the knowledge that they are far from being complete, and try to adapt the recommendations to suit your own specific circumstances.

We would suggest that you adopt the following procedure to decide on the typographical features for a first reading book.

Aspects to Take into Account

First of all make a list of all the aspects to be taken into account, the most important of which will be:

1. The characters

- class
- type family
- fount
- category
- size of type body
- weight of type

2. The texts

- character spacing
- word spacing
- line spacing
- paragraphs
- line length and justification
- level and hierarchy of texts

Decisions at Character Level

Once you have drawn up your list, turn your attention firstly to six aspects concerning the characters you plan to use. The information below should help you make your decision.

Class

Today, you can print a multitude of different characters. They have been classified many times over⁸; one of the most widely used is Maximilian Vox's classification, which distinguishes eleven groups of characters⁹.

For a first reading book you should select the best class to help pupils learn to read and write. Straight-line characters are good for this and are found in most textbooks which address grade-one pupils. First of all the characters look like a simplified form of cursive style, and, unlike the characters used for other classes, they have no serifs (short lines drawn at right angles or obliquely across the ends of stems and arms of letters), which are not found in cursive style either. This means that the pupils need not discount any elements when they write most of these letters in cursive style. They simply have a shape to complete. These characters are also of more or less equal weight of type throughout, and since the days of the heavy down strokes and light up-strokes are over, they are thus more like the style of writing actually taught.

As of the second grade, the pupils should be able to read texts written in characters with and without serifs. In the books for second grade upwards you should thus select a different class of characters.

Lower case characters with serif

garabola

Lower case letters without serif

garabola

Type Family

Several families of characters are affiliated to each of the classes.

If you are producing a first reading book for which you have decided on a class without serif, you can now look at the form of the lower case characters of the different families that go to make up this class. For optimum readability, each letter should be immediately identifiable, without any chance of confusion, even when the letter stands alone. You should thus examine every individual character, one after another.

Check that the descender of the **j**, for example, finishes with a curve and does not only consist of a downward stroke. Likewise, the curve of the **r** must be clear enough, etc.

You should also pay particular attention to the form of two letters, the **a** and the **g**; to make it easier for the pupils to learn to read and write at the same time you should select a form which is as close as possible to the shape they will learn to write.

In the next books in the series you will have more leeway to chose the family of characters, once the pupil has been systematically introduced to the new forms of the **a** and **g**.

Look at the two examples below, before you decide on the form of **a** and **g** you wish to use.

garabola
garabola

Fount

Every family has three founts: roman characters, in which the axis is vertical, italics which are inclined and cursive style in which the letters are joined up as they are in handwriting¹⁰.

There are no fewer than 12 aspects to be taken into account when deciding on the typography

Typography is important in all printed materials, but for a first reading book it is absolutely critical

The first form is best suited for pupils who are learning to read, while the second is reminiscent of handwriting, but should not be taken as a model for the first graders.

Category

Should you use upper or lower case letters?

In some languages, such as German, it is imperative that children learn both lower and upper case letters from the start, since upper case letters have a specific grammatical role, such as to denote nouns. In a first reading book you may, in some languages, be able to avoid using upper case letters. If you are forced to introduce both, use the same technique to introduce the upper case letters as you have already employed for the lower case - use characters with straight lines and no serif.

Here are two examples to illustrate this difference.

Upper case with serif

GARABOLA

Upper case without serif

GARABOLA

Size of Type Body

If you look closely at this book you will note that not all the characters used are the same size. We say that the type body is of different sizes, and we define this size in points; to give you an idea of sizes, the main body of this text is printed in Palatino, 10 point.

At the start of a first reading book you could use 24 point and then go on to use 18 point. Before deciding, try out the different sizes; and for the moment look at the following models.

Avant-Garde, 24 point

Garabola

Avant-Garde 18 point

Garabola

Weight

The weight, or thickness, of the characters used can vary; to convince you of this look once again at this book. You will find normal and bold characters: in photocompositors' catalogues you will find other options including the following:

Garabola (extra-light)
Garabola (light)
Garabola (medium)
Garabola (bold)
Garabola (extra-bold)

For a first reading book you should select normal characters for a continuous text and bold letters for headings as well as for free-standing letters, symbols and words.

Decisions at Text Level

Once you have decided how to deal with the characters you can come to the text, and look at the following aspects.

Character Spacing

The space left between letters within one word ought to be chosen for maximum readability, neither too large as can sometimes happen when texts are written in columns, nor too small.

This point is important when you are working on a reading book. If you have used straight-line characters, you will notice that the absence of serif makes it difficult for beginners to read certain combinations of letters; narrow letters, such as **l**, **t** and **j** are difficult to identify when they are followed by an **i** with automatic spacing.

To help solve this problem, you should widen the space between characters slightly. By way of illustration here is one word written with automatic spacing and one with slightly wider spacing.

Garabola
G a r a b o l a

Word Spacing

For maximum typographical readability, the space between words should equally not be too wide or too narrow.

But, for texts written in large characters, such as those found at the start of a first reading book, it may be advisable to use double word spacing. This will allow beginner readers to identify each word more easily as a unit. If you leave a double space between words, however, take care that the sentences do not appear disjointed.

Here is an example of single and double word spacing

Garabola, school textbook
Garabola, school textbook

Line Spacing

This is the space between two lines within the same paragraph.

You should be able to decide on a line spacing which will give your text optimum readability. If the line spacing is too large, each line will seem artificially isolated on the page, which will slow down the reader. On the other hand if the lines are too close together readability will also be poorer because the descenders of the letters on one line will become confused with the ascenders of the letters on the line below.

Computers insert automatic spacing; if you wish to modify this, try out different spacing.

The example below shows automatic, narrower and wider line spacing.

Garabola is a reading and writing book for first-grade pupils in Madagascar's primary schools. It is written in Malagasy, printed in monochrome and stapled.

Garabola is a reading and writing book for first-grade pupils in Madagascar's primary schools. It is written in Malagasy, printed in monochrome and stapled.

Garabola is a reading and writing book for first-grade pupils in Madagascar's primary schools. It is written in Malagasy, printed in monochrome and stapled.

Paragraphs

In texts which address experienced readers, the start of a new paragraph is marked by different line spacing, by indentation of the first line of the paragraph or by a first line which starts further to the left than the body of the text.

In a first reading book the start of every new paragraph should be clearly indicated, if necessary by double line spacing.

Once again use this book to familiarise yourself with the possible ways of indicating the start of a new paragraph.

Line Length and Justification

The length of the line again should ensure good readability; when the characters used are small, the line must not be too long so that the reader can find the start of the next line without difficulty.

It is possible to allocate spaces between words to make a line a predetermined length or width; then we say that the text is justified or aligned at the right and left-hand sides. This is not recommended for a first reading book where words would be stretched out to avoid hyphenating them, which in turn would not make for good readability.

For a first book, unjustified or ragged-right settings are generally preferred, i.e. the left hand edge of the text is aligned, but not the right hand edge. The gaps in the text at the right hand edge often correspond to natural breaks in the text, in line with the meaning units.

The right-hand edge of the text can also be justified as you can observe in the outside columns on each page of this book, or the text can be centred, with neither edge justified.

Use recently published textbooks to help you make your typographical decisions

Level and hierarchy of text

The typography must make the text easy to read, by giving the reader a series of clear visual signs. When you decide on the layout of a book two things are important: firstly to distinguish between the text that addresses the pupils and the accompanying notes and instructions which are not necessarily meant for them, and secondly to show the hierarchy of the text, i.e. to identify the various headings and sub-headings.

You can guide the reader not only by separating the text blocks from the instructions, but also by using different typographical features, i.e. the judicious use of different sizes, fonts and weights can indicate to the reader which parts of the text are headings, sub-headings, notes, etc. without your having to number them.

Let us add that this fact is extremely important to ensure linguistic and typographical readability in the teachers' guide. When you decide on the layout, you should thus re-read your manuscript and mark the various levels of text.

In our experience even if the plan is detailed and the points seem to follow on logically one from another, there are almost always imperfections. For instance we find a major heading, which we will call a level 1 heading, followed by a level 2 heading, and then we find that the text suddenly jumps to a level 4 heading, completely by-passing level 3.

There is no better way to avoid errors of this sort than to re-read the text, draw up a detailed table of contents and compare it with the body of the text as often as necessary.

Additional Visual Aids

In a school textbook the hierarchy of texts is sometimes such that it is not enough to alternate between characters of different sizes and weights; additional visual aids may be necessary.

These should be used to the extent appropriate and necessary; excessive or inappropriate use of additional aids will only confuse the reader. The aids we outline below have a place in a reading book.

Boxes and Lines

To underline the separation of two distinct parts of a page, or to draw attention to one element or emphasise the unity of one exercise, you can use a box or a fine line.

You will see from this book how we have used these aids. You will find a certain number of boxes, most of which have only horizontal lines. We have used lines with circumspection, but you will find them, for instance separating pieces of information in tables or separating the body of the text from the running head on each page.

Shading

To underline an element or to distinguish between different levels of text, a slight grey or coloured shading can be used. You should only attempt this if the assembly and printing conditions are good. Nothing looks worse than letters which are to be emphasised that are badly printed or badly shaded. Once again look at the use we have made of shading in this book.

Pictograms

In a first reading book one is tempted to use symbols which it is felt will be easier for the children to decode. Thus slates are used to indicate a written exercise instead of a heading, while silhouettes are used to represent the speakers, dispensing with inverted commas. But again avoid overkill - keep the use of pictograms to a minimum.

5. Job Envelope

You have planned and defined the illustration and layout work. Generally you will then have delegated this work to the illustrator on the one hand and a keyboard operator on the other.

But, as this work is returned to you, you must check the quality before submitting it to the printer, and it is up to you to do this.

What you now have to compile is a copy of your book which is at least definitive if not complete; the printer must not have to add, remove or modify anything. And once he has received your job envelope and your written instructions regarding the printing, he should not have to consult you with any further questions. Once you have given him the final version of all the documents and the written instructions he should be able to print without delay - or to be more precise he should be able to put together the pages to make signatures, have you check that the imposition is correct by submitting the blueprints to you, prepare the printing plates, install these in the printing press, load up the paper and print and trim the book.

The quality of the printing will depend almost entirely on the quality of the preparatory work. To make sure that it is as good as possible, you should adopt a methodical procedure, as follows.

This is the last part of your work as “publisher-authors” - take care not to nullify all your work to date

First Proofs

You have submitted your manuscript to a keyboard operator. Before doing so you checked to make sure that there were no spelling errors in the manuscript, that no more corrections had to be made to the text, that the length of the text was in line with the layout requirements and that the punctuation had not been forgotten.

The first set of proofs you get back will surprise you; you will not always recognise the manuscript that you have slaved over for so many months... which is just as well, because it gives you a certain distance to the text and allows you to spot composition errors better.

In general the first set of proofs contains only the typewritten text in continuous form, without any concessions being made to the layout. Your corrections must thus meet the following criteria.

Clarity

Use a red pen to append your corrections and write as legibly as possible.

This recommendation always applies, but it is all the more important when you have a manuscript in a national language which the keyboard operator does not necessarily speak or write well. Form every letter with great care if you want to avoid the keyboard operator making more errors as he or she corrects the first set, which will only add to the number of times you have to proofread.

The groups of authors which we have had the opportunity of observing have always corrected by hand, indicating in the margin when a letter or word must be changed, added or removed, a paragraph inserted or two syllables joined up. They either rewrote the entire word or gave detailed instructions as to the changes to be made, and these instructions were generally understood without difficulty by the keyboard operator. You too can adopt this procedure, but you must be careful that your instructions and corrections are always clear.

Official systems of proof correction marks do exist. They are used by professional proof readers and can be found in most books on layout and typography; you can refer to these

works if you wish to upgrade your work - but check first that the keyboard operator is familiar with them, or far from enhancing the results you may face a disaster.

Precision

Read the proofs again and again and track down all the errors.

You must bear in mind that as from a certain stage the authors themselves become blind to the mistakes in their work; they can read and re-read their manuscript without picking up the errors. Thus, you should read and re-read the first proofs several times, but do not consider this work definitive. At a later stage you will have to read the second set of proofs, which you will receive once the layout has been done and the typographical choices translated into practice.

Pertinence

If you are working in a language which still has few standards, you will be bound to have some doubts as to how to split a word for instance, the use of the apostrophe in a compound word, the use of capitals or how to write certain abbreviations. Do not correct these points before you have agreed on clear standards with your colleagues or checked if such rules already exist.

We must stress that when several groups of authors are working on didactic material in the same national language it is crucial - and extremely difficult - to ensure that the language used by all the groups is standardised. Care and discipline are vital to achieve this.

Functionality

Do not make corrections just for the fun of it. As we said the last author corrections have been made. Remember that the text you submitted to the keyboard operator had already been read by numerous people, and unless you find a really serious error that none of them has found, do not make any more changes. If you really feel, in spite of everything, that you have to make more changes, consult your colleagues first.

Re-read proofs with great care

Final Proofs

The proofs that you have re-read and corrected should now be submitted once more to the keyboard operator, who will not only incorporate your corrections, but will then do the layout. He will follow your instructions as regards the characters and text features, and will then submit to you another set of proofs which you will once again have to re-read and correct. You must pay particular attention to the following aspects at this stage.

Spelling

Re-read the proofs one last time. No effort can be too great to locate a missing point or a spelling error in a text designed for beginners. You will be held responsible for all mistakes - and this is the sort of mistake your readers will be quick to note.

Split Words

Generally, when the text is arranged in columns some words will be split at the end of the line - check that this has been done correctly.

For languages in world-wide use you will find computer programmes which hyphenate words automatically. When you are working in a national language for which there is no such programme, pay particular attention to this point.

Hierarchy of Texts

If you plan to use different characters, or different sizes and weights of characters check that your instructions have been properly followed, in particular that the hierarchy of texts has been properly respected. Paragraphs must be treated uniformly.

A heading in the same size of characters as the normal text, a word which has not been printed in bold print as planned, or one paragraph which is indented while all others are not - all these errors will make your book less readable and thus reduce the quality of the finished product.

Graphics Dossier

Everything which has not been processed by the keyboard operator must be submitted separately to the printer. When your book is a reading and writing book for primary level, this dossier will generally include the original drawings and hand-written examples of writing. You should ensure that the dossier is complete and that it contains the following instructions.

Dimensions of the Illustrations

Some drawings can be executed without difficulty in the size required, but for very small illustrations, such as text-illustrations for exercises, it would be better to have the illustrator produce larger drawings. In this case you must instruct the printer of the extent to which they must be scaled down, or "reduced".

Shadings

If you decided to print your book in two colours, or to use one colour only but to add shades of grey in illustrations you must check that you have included a photocopy of the originals indicating exactly which colour or shade has to be printed where.

Assembly Instructions

If the page contains several elements it is not enough merely to submit the text and the illustrations to the printer; you must also give him precise instructions as to the layout of each page.

The best way to do this is to prepare as complete a layout guide as possible for every page, using photocopies of the originals. The layout artist will base his work to the millimetre on this hand-made model: he generally has the instruments and the skills required.

Final Checks

Before you submit the job envelope to the printer ensure again that it is complete.

In our experience, many groups of authors are tempted not to finish their work in an attempt to accelerate the printing work. They submit an incomplete job envelope and think that they will complete it afterwards.

But, once the printer has the job envelope, those concerned with the development stage almost automatically consider their work over.

It is then very onerous to complete the work properly, because it is difficult to find every missing element: the illustrator appears to have vanished off the face of the earth, the photocompositor has other urgent work to finish or it is impossible to consult all the authors, since the group has been disbanded or sent elsewhere.

It is thus imperative to go through the job envelope one last time while all the actors are still present and correct. You should focus, in particular, on the two following aspects.

Complete Development

All the many elements of the book should now have been duly prepared; you should not find the four cover pages are missing, or find that one page has vanished or that you are suddenly missing a text or graphic element on any of these pages.

For many years, we spread out the dossier on a desk, leafing through the pages one after another, which meant that we never had a complete vision of the dossier as a whole. Now, however, we believe that the best way to ensure that nothing is missing is to stick up a photocopy of your entire model on pinboards. This allows both authors and outsiders literally to take a stroll through the book. We have found that the physical distance this gives you allows you to note certain omissions and even to find (more!) typing or spelling errors which can still be corrected at the last minute.

We would thus urge you to adopt this procedure, and not to be content until every member of your team has examined the book page by page and signed each page on the pinboard.

Complete Job Envelope

Secondly, check that all the original documents have been put together and all the necessary instructions given to allow the printer to produce the books without difficulty. You should then examine your textbook page by page, as it is pinned up on the board and make sure that everything is complete.

Here too we have modified the way we work over the years. For years and years we submitted a text dossier and an image dossier to the printer separately. Today we do things differently. For every page of the book, we prepare one large envelope on which we write the page number. The envelope contains all the pertinent elements for that page.

Thus for the revised version of *Garabola* each envelope contained

- The original copy of the texts
- The original copy of the illustrations
- A photocopy of the illustrations bearing the instructions for shading and, in some cases, for reducing the illustration
- The original copy of the hand-written examples in cursive style
- A montage using a photocopy of the texts and illustrations.

Once you hand this job envelope over to the printer, your work as authors is almost over. Afterwards, if you have prepared your dossier well, the printer will not have to contact you again before he submits the blueprints; these are the last proofs, printed on blue paper to allow you to check the assembly of the elements on the page, the imposition and perhaps also the shading. The blueprints will be submitted to you one signature at a time; you should check them, and if there are no errors you should give the printer the go-ahead, signing each one. The book is then out of your hands and you won't see it again until it is published.

We would just like to draw your attention to one last point: you should never make author corrections on the blueprint. Do not give in to the temptation to improve your text at this stage - it is too late. What can happen, of course, is that you spot another typing error, which you must, of course, correct. This is, however, the absolute exception, and if you have read this book attentively we will not have to explain why.

6. In Conclusion

Calculating the Sales Price of the Book

The production of textbooks in developing countries is a long process and requires the attention of the authors throughout. Once the process is launched the authors rarely have time to stand back and evaluate the price of the operation.

There is, however, so much at stake that you must gauge the viability of the exercise. An examination of the costs should allow those concerned to better manage their work in future: authors and publishers thus have a good basis on which to determine the physical and graphic aspects of a series of books, and on the best way to produce them, or the final version, where you have been working on a pilot version.

This work should be performed by specialists who will take into account the following¹¹.

Printing and production costs

At the end of the conceptual phase you had a provisional quotation drawn up for the production of your book, based on approximate figures. You now have the precise figures, since the printer has been able to update and modify his prices. You can thus take the figures in his final quotation.

Development costs

These costs include all costs incurred from the preliminary research phase until the job envelope is submitted to the printer, i.e. all the costs of preparing the manuscript, the graphics dossier and the layout work.

Overheads

These are costs which do not relate directly to any one task, such as general administrative services, rent or vehicle maintenance, so important for field work.

Costs of distribution and/or sale

These costs cover the packing and transport of the books to the schools; in some cases they will also include the costs of advertising and promoting the book.

Throughout this book we have emphasised the huge responsibility borne by authors, the honesty they must bring to their work, the rigour and precision required. The costing exercise will convince you of the truth of this if nothing else has: authors of textbooks may not under any circumstances act negligently.

Notes

¹ The blueprint does not always allow you to check the different shades of grey very exactly, but you can spot omissions in the shading, which may be printed white if not corrected.

² The blueprint allows authors to check changes made by the printer and remedy any errors. One example we encountered was the exercise on telling the time in an English book, where the printer had had the clock redrawn; it had certainly gained in aesthetic quality, but the time on the clock face no longer corresponded to the English sentence next to it, which the pupils were to learn.

³ The monitoring showed them that even the highly improbable is possible and allowed them to correct some errors: thus we noted that the red Pantone ink which we had ordered overseas to print the cover had been wrongly delivered and that the cover was about to be printed in pale pink.

⁴ If, however, you are forced to deal with the legal side of things look at the question of authors' rights and royalties, and be sure and consult the books recommended here.

⁵ The pupils are expected to recognise not just any old fish but the “tilapia” which is well known in Madagascar, which is why the changes had to be made.

⁶ Layout problems are not new: in the thirteenth century the French architect Villard de Honnecourt proposed a model which divided the page harmoniously; today research is still being conducted; some of the most interesting includes the work of J. Tschichold and R. Rosarivo, which you will find in the books on layout listed at the end of this chapter.

⁷ Most of the changes to the illustrations and the layout of *Garabola* were made by Marina Dinkier, a professional graphic artist. These modifications significantly improved the final version. Cf. Dinkier, M. *Mise en page et préparation pour l'impression*. Internal paper, Tef'Boky Project, 1990.

⁸ The major classifications are the work of Thibaudeau (1921), Vox (1952), Novarese (1964), Jacno (1978) and Alessandrini (1980). They are based on various perspectives (historical, aesthetic, geographical, etc.).

⁹ In this classification the two last groups (Gothic and non-Latin characters) are not generally particularly relevant for textbook authors.

¹⁰ If the textbook is to give examples of handwriting, you should bear in mind that computer programmes which can reproduce writing of this sort are expensive and rarely meet all your requirements. It is often a good idea to have examples illustrated by hand.

¹¹ We refer you to the costing grids proposed by F. Richaudeau in *Conception et production des manuels scolaires*, op. cit., pp. 215-239.

Recommended Reading

Preparation and Re-Reading Copy

BAUDIN, F. La préparation de la copie. In: DREYFUS, J. AND RICHAUDEAU, F. *La chose imprimée*. Paris: Retz, 1977

GUERY, L. *Manuel de secrétariat de rédaction*. Paris: C.F.P.J., 1990

PRESSE ET FORMATION *Abrégé du code typographique à l'usage de la presse*. Paris: C.F.P.J., 1991

Layout

DUPLAN, P. AND JAUNEAU, R. *Maquette et mise en page*. Paris: Usine Nouvelle, 1986

GUERY, L. *Précis de mise en page*. Paris: C.F.P.J., 1988

RICHAUDEAU, F. *Manuel de typographie et de mise en page*. Paris: Retz, 1989

Typography

AICHER, O. *Typographie*. Lüdenscheid: Druckhaus Maack, 1989

DREYFUS, J. AND RICHAUDEAU, F. *La chose imprimée*. Paris: Retz, 1985

SALBERG-STEINHARDT, B. *Die Schrift: Geschichte, Gestaltung, Anwendung*. Cologne: DuMont Buchverlag, 1983

TSCHICHOLD, J. *Meisterbuch der Schrift*. Ravensburg: Otto Maier, 1965

ZAPF, H. *Variations typographiques*. Paris: Hermann, 1965

Illustration

FUGELSANG, A. *About understanding. Ideas and observations on cross-cultural communication.* Dag Hammarskjöld Foundation Uppsala, 1982

WALKER, D.A. *Understanding pictures.* University of Massachusetts, 1979

To Sum Up

All the work we have described until now, has been geared to producing the raw material of the textbook. To make it publishable, you must now polish it and put it into its final form. To put it more plainly, you must have the illustration and the layout work done.

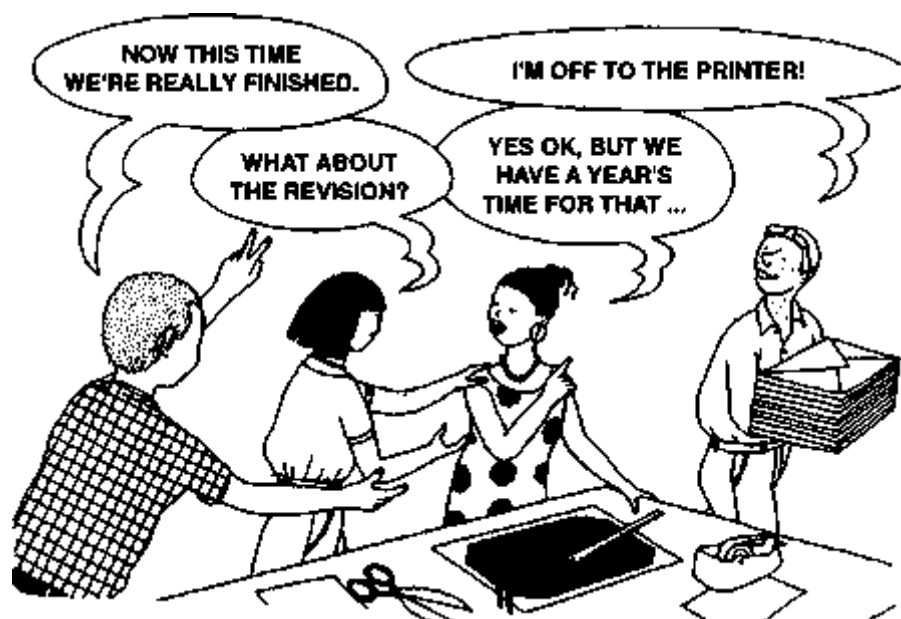
At this level everything is still open: a good manuscript can become a good book, but it can also be made into a monotonous, abstruse or obscure book. The illustrations and the layout of a book give the contents their contours, which will promote or block learning. You should thus illustrate the texts in a functional way. Do not decorate. Create references which will help the reader without trying his patience. Establish a rigorous and transparent structure for your book which will not bore readers.

This work demands unique expertise, an expertise which not all authors of textbooks in developing countries possess - sometimes they are not even aware of how important it is. Given the fact that few of them will have recourse to a professional and that there are few long-term training courses, they should try to train on the job, by

- demanding sporadic support from technicians on the spot, and in particular from the printer
- using specialised reference works on layout in particular
- acquiring certain mechanisms as they read, so that they register not only the contents but also the graphic features of printed materials.

This phase is over when the job envelope has been submitted to the printer. It should be so well prepared that contacts with the assembly man and the printer are kept to a minimum.

Even if the author's work is now finished, it is vital that the work performed be recapitulated and costed. Specialists should always calculate the price of the book, taking into account not only the development and production costs, but also the overheads and the costs of distributing the finished product to the schools. This is vital feed-back but it is all too seldom passed on to the authors in developing countries.



By Way of Conclusion

You have now devoted several years to preparing a school textbook and you have just handed in the final version to the printer.

The fruit of so much work will now ripen rapidly as far as you are concerned, for the printer's deadline will bear no relation to the time you have spent up to now. The printing is generally the shortest step in the entire chain, assuming that the authors have made all the necessary preparations.

The joy and pride you will feel the first time you take your book in your hands and flick through it will almost inevitably be slightly dampened. You will be disappointed that the margins are so narrow and that you didn't notice before, that the grey of the shading is too dark or because at this stage you find a typing error in a prominent position, quite inexplicably in view of the care with which you compiled the manuscript and the model.

It is undoubtedly true that errors of this sort detract from the quality of the book, and may discourage authors, but they are minor details, even if people rush to point them out to you. The most important thing is that the book exists and that it is of an acceptable quality. By producing this book in such difficult circumstances you have blazed a trail for other publications of even better quality. In view of the urgent demand for textbooks in many developing countries, and the production conditions commonly encountered, minor shortcomings such as those mentioned above are relatively unimportant.

The publication of a book always marks the end of a long and intensive period of work. Given the book situation and the scarcity of experienced textbook authors, it is to be hoped that the skills thus acquired will be shared; that all those who toiled to make their contribution to a quality publication will continue in this line of work.

But, do not fall into the trap of thinking that your training is complete after the first book. You will never have learned everything there is to know, and the quality of your work will always depend on the diversity and solidity of your training. Every book you work on will be a challenge in its own way, and you will have to find individual, tailor-made solutions in each case. Your products will gradually improve the more experience you have and the more you learn. Keep in touch with professionals in the world of publishing, gather your own documentation, examine the contents and form of other printed materials, in particular textbooks, to try to help improve the efficiency of schools in your country.

Annexe: Evaluation

Pupils have worked with the pilot version of your book over a period of one or several years. But your odyssey is not quite over yet; if you look back at the first chapter you will see that in developing countries the evaluation of pilot materials is an integral part of the chain. And, now that you have the chance to look at your book with a certain distance, you will be the last to stand in the way of a revised version: not only will you stumble over minor errors which you will find inexplicable after all the double, triple and quadruple checks, but certain doubts will also begin to sprout in your mind regarding the contents and the graphic features. An evaluation, followed by a revision of the pilot materials is thus called for in most cases.

How should you go about this? In some countries the ministry will assume responsibility for the evaluation. It will examine the books presented by private publishers and decide whether or not to accord the book official authorisation. It is not the actual performance of the book in schools that is evaluated here; the book is simply assessed according to a grid comparable to the grids you will find in the recommended reading at the end of this chapter. It is generally a sort of censorial work.

In our opinion grids of this sort are useful for authors performing internal checks as they write didactic materials, but they are quite unsuited to revising school publications. It is, in any case not sufficient to analyse new didactic material from your desk; it is imperative to look at how it actually works in schools.

For most of you, the evaluation work will constitute a new research project. You will have to carefully plan and execute numerous, complex activities and the work will sometimes involve managing significant human, technical and financial resources.

You should realise that this phase has much in common with the preliminary research phase, which is why we will only give you some general pointers, to help you understand how to make the preparations for the systematic revision of pilot materials; we will not repeat the information presented in chapter 3, but will simply refer you back to it whenever appropriate.

1. Overview

One of the main difficulties which you will face in your evaluation work is bound to be the logistics. In some cases, you will already be involved in other work, like drawing up your next book, and in others the education authorities will exert a lot of pressure on you to produce the final version as rapidly as possible¹.

Whatever the specific constraints you will almost always be working under time pressure, which means that you must plan the evaluation activities meticulously to ensure that you achieve the quality required within the given time-frame.

Evaluation is a major task which will often take an entire year. To give you an idea of the scope and the complexity of this phase we will sum up the major steps taken in the Tef'Boky Project to evaluate the first version of *Garabola*.

Evaluation Work for Garabola

Aspects, Strategy, Instruments

October 1988

Once production work on the *Garabola* set (reading book, writing book and teachers' guide) was completed, the authors were quick to set up an evaluation system so that the evaluation could start at the beginning of the academic year. They drew up a list of the aspects to be

examined, and then decided on a strategy and the research instruments that they would need to give them the information they required.

This was one of the most labour-intensive phases of the entire project, involving the following tasks in addition to the evaluation per se:

- designing and organising a system to distribute the *Garabola* materials to the schools in the test zone
- designing, organising, realising and evaluating the presentation of pilot materials to the 40 teachers concerned
- initiating the design work on *Tongavola*, reading and writing materials for the second year of primary school.

The authors could not do everything themselves, so they devised an evaluation strategy which only demanded their participation on a sporadic basis: they concentrated on devising evaluation instruments, taking part in classroom observations and interpreting the final results. The major logistic work, including gathering data and processing it systematically, was entrusted to a small team specially set up for this.

Daily Self-Evaluation Grid

October 1988

The first evaluation instrument was a daily self-evaluation grid. This was the first priority of the authors so that it could be completed and distributed to 9 teachers in time for the start of the academic year. The nine were recommended by animateurs for their professional ethics; they undertook to fill in the grid every day.

First Test Series

December 1988

The second instrument was a series of tests to be run at the end of the first term in all 40 test schools. This activity had a dual objective: to evaluate the very first results obtained with the new materials and to examine the level of receptiveness in the schools, which would enable the team to take remedial steps at an early stage if necessary.

Classroom Observations

January 1989

The third instrument was a classroom observation grid, allowing the evaluators to look at the way *Garabola* was used over a one-week period; the authors themselves thus spent one week at the schools at the start of the second term.

Critical Examination of the Material

January 1989

At the same time the *Garabola* set was sent to various individuals for a critical examination. It was accompanied by a form letter, inviting the recipients to make their comments and suggestions.

This action brought absolutely no results; not one single comment filtered back to the authors. It may be safe to assume that personalised questions would have had better results.

Second Test Series

March-June 1989

The last evaluation instrument consisted of tests to gauge reading and writing progress. Preliminary tests were firstly run in two rural schools after which the instrument was modified. To give a comparative analysis of the year-end results the tests were run in 20 of the schools in the test zone and 20 control schools. The working conditions in this control group were comparable to those in the test schools, but they did not use *Garabola*. The evaluation team, duly instructed, ran the tests; the team members took advantage of this field visit to gather documents, first and foremost writing exercise books and gather information, such as the rate of attendance at the schools and the physical state of the books - all data which will help make for a complete evaluation.

Processing and Interpreting Results

July-August-September 1989

The team of evaluators was charged with processing the test results and the other information gathered. The authors then examined the data and interpreted it.

Development of an Evaluation Report

September-December 1989

In view of the fact that the material broke with certain practices, notably significantly lowering the attainment targets laid down in the official curricula², it was important to inform the education authorities of the results.

A reference document was thus produced by an educationalist, since the authors were too busy to take on this task as well, and the document widely circulated.

2. Aspects of the Evaluation

Now that we have looked briefly at the possible evaluation activities for a pilot textbook, let us come back to the first stage, i.e. identifying precisely the aspects to be evaluated. Here is a short summary of the features that should usually be examined with care.

Effectiveness in Terms of Attainment Targets

You must prove that the materials actually do their job by analysing the results obtained using the new material as compared to the attainment targets.

The results of tests of this sort must, it is true, always be interpreted with care, but the results are of capital importance for you. If they are positive, general aspects of your material, in terms of the volume of subject matter presented, the learning method adopted and the composition of the materials can be considered appropriate. If on the other hand they are clearly negative, you must examine these aspects in great detail and be ready to make far-reaching changes³.

And bear in mind that the education authorities are bound to attach great importance to the test results. Their first questions are unlikely to concern the aesthetic qualities, the suitability or even the solidity of the book, but whether or not it produces results.

Shortcomings of the Content Matter and the Form

The tests should give you an idea as to whether or not your material works; these general pointers will not, however, tell you what need not be changed and what should be modified on each page.

Before you can revise your material page by page with full knowledge of the facts you will need an instrument which will allow you to examine every aspect in detail.

Let us assume that you have been working on reading and writing materials: you should then look at the topics chosen, the linguistic and pedagogical aspects of the texts, the characteristics of the illustrations and the layout of the pupils' materials as well as the contents and presentation of the teachers' guide, rather than focusing only on the learning method used.

The results should enable you to revise your materials advisedly, on the basis of the reaction of users.

Repercussions on Attitudes to School

In many countries school rolls are dropping⁴, a development which is attributed to several different factors.

Although it is true that the rate of growth of school rolls in a country depends primarily on the household income, it is also linked to learning conditions. It can thus often be instructive to see if the introduction of the new material coincided with a drop in pupil absences or not.

Robustness of the Book

Although it is relatively unimportant if a pilot book loses pages or rips easily after one year of use, the revised version must be robust, particularly if a large run is to be printed and used nation-wide.

It is important to examine the material after it has been in use for a certain period, so that you can take the necessary technical and financial steps in time to ensure that the revised version of your materials enjoys a long service life.

3. Evaluation Indicators and Instruments

Once you have decided which aspects you wish to evaluate, you must identify the instruments which will help you obtain the results required.

To this end you should take the same approach as you did during the preliminary research phase: firstly formulate indicators, i.e. easily observable, quantifiable or verifiable elements, and then determine which instruments will enable you to verify each of the indicators.

We suggest below a few indicators and instruments which can be used to examine the four aspects quoted above. Analyse them and adapt them as appropriate to your own circumstances.

4. Planning the Activities

Ideally you would be able to use all the instruments you have listed, but this will not always be possible.

When you come to draw up a systematic plan for the evaluation phase you will be able to identify which ones you will actually be able to use. You should draw up your work schedule, taking the following elements into account.

32. Identification of Evaluation Instruments
Aspects-Indicators-Instruments
Effectiveness of Material
School results
Attainment tests
Verification of the rate of learning (in teacher's lesson plan for instance)
Daily self-evaluation grid
Classroom observation
Shortcomings of material
Teaching process
Daily self-evaluation grid
Classroom observation
Voluntarily kept log-book
Learning process
Daily self-evaluation grid
Classroom observation
Analysis of pupils' exercise books
Repercussions of the materials
Parents' attitude
Talk with parents
List of school attendance rates of their children
Teachers' attitude
Talk with teacher
Verification of the frequency with which the material is being used, by checking its physical state
Daily lesson plan
Pupils' attitude
Talk with pupils
Physical aspects of the book
Strength when handled frequently
Examination of books
Ease of handling
Examination of books
Classroom observations
Talks with teacher

Institutional Priorities

In general, the existence of pilot materials in itself reassures the education authorities enough to stop them exerting undue pressure on authors to prepare a final version.

But if financial assistance has been pledged for printing and distribution, it is not unusual for time-limits to be set for the revision phase. In this case you will have to see how you can respect the deadlines without compromising the quality of materials which will then be used for several years in the schools of your country.

Human, Physical and Financial Resources

This is the second aspect to be examined when you come to plan your evaluation activities.

If you refer back to the experience in the Tef'Boky Project as presented earlier in this chapter, you will see that the authors delegated the responsibility for numerous tasks to a so-called evaluation group.

If you do not have this sort of back-up, and if your technical and financial resources are limited, plan your activities accordingly. Distinguish between what is desirable and what is possible, as you did during the preliminary research phase.

Scope of the Work

Time and special skills are always needed to develop instruments, but in developing countries, where research conditions are more complex than in industrialised countries, you will have to examine the entire evaluation phase, to avoid planning activities which are not feasible with the available resources.

In particular, no instruments should be used in the field without first undertaking a series of well-targeted preparatory measures.

It is, however, difficult to foresee all the work which instrument x or y will entail. To give you an idea of the scope of the work that lies ahead we list below the activities which we feel are indispensable to obtain significant results, if you opt for a comparative analysis of school results. Analyse these and draw your own conclusions for your specific circumstances.

Work Involved in a Comparative Analysis

The work involved in conducting a comparative study of school results is sporadic, it is true, but the tasks are many and varied, and are generally spread over an entire year. Here is a list of the principal tasks:

Identification of Test Schools

- Define a common profile for schools to be selected from the group of test schools and from outside this group (e.g. geographical location, teacher:pupil ratio, etc.)
- Undertake a first theoretical selection of schools having used the material to be evaluated
- Conduct a field visit to verify the data for the first set of schools
- Undertake a first theoretical selection of the control schools, followed by a field visit to check the selection
- Take the necessary administrative steps to allow you to operate outside the test zone.

Development of Tests

- Identify attainment targets to be evaluated
- Draw up a list of criteria referring to the contents, presentation, course of tests, marking scale and interpretation of results
- Develop the tests
- Illustration, layout and preparation of an adequate number of tests
- Select at least two schools, which correspond to the criteria laid down for the schools selected for the final test and administrative steps to allow you to run a preliminary test there
- Issue detailed instructions to those in charge of running the preliminary tests
- Conduct the preliminary tests
- Process results systematically and interpret these
- Make any modifications to the tests or the instructions given to those in charge
- Prepare a sufficient number of the final version of the tests.

Holding the Tests

- Plan the tests (e.g. identify those responsible for running the tests, available transport, sources of financing; draw up a schedule for holding tests school by school)
- Take necessary administrative steps and inform each school in writing when the tests will be held and what they will involve
- Issue instructions to those responsible for running the tests
- Make effective preparations for the field visit
- Conduct evaluation work in the field
- File immediately and systematically the tests and all other documentation collected in the schools on this occasion.

Systematic Processing and Interpretation of Results

- Issue instructions to those in charge of processing the data, regarding marking systems as agreed on earlier
- Examine and mark each test
- Draw up statistics
- Interpret the results
- Draw up a document presenting the procedures adopted and the results of the evaluation
- Distribute it to all interested parties.

5. In Conclusion

By way of conclusion we would just refer you to chapter 3 to refresh your memory about the follow-up work, in particular devising instruments, work in the field and data processing, and to some of the evaluation instruments which were used to evaluate *Garabola* and which may be useful to you, if not as a model, then at least for reference purposes⁵.

Notes

¹ This always happens when the financing for a large run is available before the evaluation work is finished. The situation is not exceptional, but is always unpleasant for authors; time considerations often take precedence over the issue of quality.

² With *Garabola* first-grade pupils learn only 21 letters of the alphabet, whereas the current curriculum also provides for pupils learning 13 of the complex graphemes in Malagasy. It was thus particularly important to inform the education authorities about the results obtained in reading and writing.

³ In the Tef'Boky Project the learning progress tests revealed that the writing exercise book was inappropriate given the current educational context in Madagascar. This led the authors to modify the make-up of the materials designed to teach writing in grade one of primary school. Cf. Chapter 4.

⁴ "Although the rate of increase in enrolment declined at all levels of education, the drop was most pronounced at the first level, where it fell from 8.4 percent (approximately 2.9 million

additional pupils each year) between 1970 and 1980 to 2.9 percent (approximately 1.4 million additional pupils each year) between 1980 and 1983.” In: World Bank “Education in Sub-Saharan Africa” p. 28.

⁵ The evaluation work is described in its entirety in KOMAREK K. Dossiers II, 1993.

Recommended Reading

ABERNOT, Y. *Les méthodes d'évaluation scolaire. Techniques actuelles et innovations.* Paris: Bordas, 1988

DE KETELE, J.M. *L'évaluation, approche descriptive ou prescriptive.* Brussels: De Boeck, 1987

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MAGER, R.F. *Comment mesurer les résultats de l'enseignement.* Paris: Bordas, 1986

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Glossary

Attainment

The total of results obtained at a certain level in a given subject. In general, the education authorities attach great importance to attainment in the initial evaluation of the impact of a new textbook. These figures should, however, merely be taken as a rough indication as to the effectiveness of the book, and must be examined in more detail.

The evaluation of attainment is not in itself enough of a basis on which to revise a pilot textbook.

Author of School Textbooks

In the traditional publishing chain the author is responsible for providing texts.

In general these will be texts which address pupils (reading texts, exercises, captions for photographs or illustrations) and teachers (preface, presentation, table of contents, instructions and information on the cover of the textbook, as well as the entire teachers' guide and complementary didactic materials).

When the author does not have a good publishing structure behind him he may also have to assume certain editorial responsibilities, of a financial, technical, graphical and commercial nature.

Authorisation to Print

Authorisation issued by the education authorities to the authors to go ahead and have a given textbook printed.

Body Size

The size of a type character.

The size is expressed in points; by way of example the main body of the text of this book is printed in 10 point characters, while the chapter headings are printed in 22 point.

Character Count

Calculation of the number of characters and spaces in a text manuscript which allows one to calculate the approximate length of the text after typesetting and the number of pages in the book.

Character Spacing

The blank space between two characters within the same word.

The character spacing in a text may be normal, condensed or wide, and this choice has repercussions on the typographical readability of the text.

Copy

Typed text with instructions for typesetting and layout.

The authors should bear in mind the fact that the copy contains the complete, definitive text of the book, and should refrain from making their own corrections at a later stage, which always entail delays and additional costs.

Creating Words

Lexical additions to a language which can take the form of neologisms, or loan words from other languages.

In textbooks written in national languages which have not yet been adequately standardised, technical and scientific terms will have to be created; in the absence of an institute of applied linguistics, the authors will have to check themselves whether or not the technical terms they need already exist, and where none exist will need to create new words, and ensure that they can be disseminated so that they will be generally accepted and used.

Development

Link in the publishing chain.

During this phase the textual and graphic elements that will make up a page are produced and combined.

The term development is sometimes preferred to simply “writing” since it underlines the fact that during this phase not only are texts written, but a text-image unit is created.

Devising the Contents

Devising all texts to be included in a textbook.

For a reading book, this phase involves choosing and/or defining the attainment targets, identifying the subject matter to be covered, the mandatory steps to be respected and the arrangement of this subject matter within the book.

In developing countries the difficulties are increased by the fact that textbooks ought to correspond to the official curricula, while the work involved leads authors to examine or reconsider targets which deviate too much from the reality in the schools of the country, otherwise the product may be totally inappropriate before it is even printed.

During this phase it is important for authors to be able to judge how much leeway they have to move away from the official guidelines.

Devising the Form

Devising the physical aspects (format, number of pages, binding) and graphic features (type, number and size of illustrations, rough layout, type of printing) of a book.

It is crucial that the form be devised before the writing and illustration phases so that the texts and exercises can be produced to fit a pre-defined framework. The importance of this work is, however, rarely appreciated by teams of publishers-authors, which accounts for the “home-made” appearance of some of their products, which is totally disproportionate to the high costs.

Distribution of Textbooks

Important link in the publishing chain. In many developing countries the distribution of textbooks to rural areas where the majority of the school population live is difficult, and thus often constitutes an education project in its own right.

Documentation Specialist

Person put in charge by the publisher of finding all the documents to accompany the texts of a book, and of checking them for pertinence and technical quality.

Double Page

Visual unit made up of the left-hand page, which will bear an even number, and the right-hand page which will bear an odd number.

The double page is the basic layout unit.

The layout artist assembles the pages two by two, arranging text and illustrations on the basis of a framework known as the grid, which covers the two pages at once.

Evaluation of a Textbook

All activities which aim to provide information about the way the textbook is used in classrooms.

When the evaluation phase is designed to provide information for the revision of the book in question it must not only determine the extent to which the attainment targets can be achieved with the help of the material in question, but must also give precise information as to what aspects of the contents, the physical form and the graphics must be revised.

Evaluation Grid

A research instrument which makes it possible to examine the contents and form of a textbook.

Evaluation grids are useful and should be used systematically by authors running a final internal check on their own manuscript.

They are not, on their own, enough to allow you to revise a pilot textbook and must be supplemented by other instruments (classroom observation, attainment tests, etc.).

Exercise Book

Didactic material considered appropriate or even indispensable for some subjects, such as learning to write. Exercise books are always expensive because they can only be used once.

Any decision based on the assumption that a set of materials must include an exercise book should be reviewed with great care by authors in developing countries.

Exercise-Image Unit

The contents and the form of an exercise.

In a good exercise, the contents and form will complement one another; the form can be a text-illustration, or may present the underlying mechanism of an exercise.

It is always a major challenge for textbook authors to develop exercises which allow for a strict progression of learning, ensure an agreeable visual effect and make the underlying mechanism transparent for teachers and pupils alike.

Feasibility Study

Study which precedes a textbook project and focuses not only on the demand for textbooks but also looks at the conditions in which the book is to be developed, produced and distributed.

No textbook project should be launched before a feasibility study has been conducted. Otherwise it is imperative for the preliminary research phase to include a study on the environment in which the books will be used.

Film

The reproduction of a document on a transparent film which will then be used to make plates.

Finishing

The step which transforms the printed sheets into a finished book.

Finishing work, which comprises mainly folding, gathering the signatures and binding, must be closely supervised by the publisher, or the authors, in order to ensure that all the work to date has not been in vain.

Folio

The page numbers in a book. The even numbers will be on the left hand page, while the odd numbers will be on the right hand page.

Graphics Dossier/File

All the graphics documents for a book to be printed.

For a textbook this will include not only drawings and photographs, but also hand-written models of writing in cursive style.

Grid

Document which lays down the margins and the basic structure of a book and which helps to typeset a manuscript precisely and to produce various models, and make-ups.

The stencil is an indispensable tool for books with a complicated layout, as textbooks generally are.

Hierarchy of Text

Order and classification of the different parts of a text.

When there is little publishing back-up the authors themselves will have to check the organisation of their texts, clearly indicating the level of titles and text blocks to ensure that the photocompositor can process them accordingly.

In a partly theoretical work, like a teachers' guide, the hierarchy of the texts is often particularly complicated to establish.

Imposition

Setting out the pages of the book on the sheet so that once the sheet is folded the pages will appear in the correct order.

Careful imposition can keep cost down by putting pages with colour illustrations together on one or two sheets thus limiting the number of sheets to be printed in two or four colours.

Initial Quotation

An estimate of the costs of printing and finishing a textbook, which the printer can draw up at the end of the conceptual phase. The initial quotation allows authors to compare the physical and graphic features they have planned with the budget available.

Innovation

Intentional transformation of an education system with a view to achieving the existing objectives or defining new, more appropriate objectives.

In a textbook project innovation is at the centre of all action and it is not easy to have it accepted. It concerns first and foremost the education authorities: the conception and execution of a project demands expertise and attitudes which are not always encouraged within a bureaucracy.

Innovation involves all those who are indirectly affected by the book: the curriculum unit, teacher training unit, field supervisors, i.e. amateurs, educational advisers and inspectors, as well as parents.

Innovation is naturally geared to the teachers, whose resistance to change is often exaggerated, since their work in the field often makes them excellent change agents.

Finally innovation concerns the authors who often become the locomotive of change. Their status as civil servants, their professional training, their integration in the system and their aspirations are often barriers to a frame of mind that welcomes innovations, without which, however, no transformation worthy of the name is possible.

Instructions for Teachers

Precise, practical instructions for teachers printed in the textbook itself or in the teachers' guide, to help them with every-day lessons.

Textbook authors who aim to provide teachers with an effective tool in this way, find themselves confronted by the problem of how to ensure immediate effectiveness without surrounding the teacher with repetitive and stupefying instructions, which will in the long run cramp his or her teaching style and prevent him or her from developing and being inventive.

The shorter the learning time available the more carefully planned lessons must be and the more acute this dilemma.

Job Envelope

All the text and graphics documents to be submitted to the printer so that he can print the entire book.

Some of these documents are submitted in their final form, while others are accompanied by precise instructions as to how they are to be processed (enlargements or reductions of illustrations for instance).

Language of Instruction

Language used as a medium of instruction.

Sometimes this is the mother tongue of the pupils, and sometimes it is another language of which they have a more or less good command.

During the feasibility phase of a textbook project it is absolutely crucial to determine which is the language of instruction.

Language Taught

A language which the pupils must learn as a subject in its own right. In most developing countries, pupils must learn a European language in their first few years of school.

During the conceptual phase of the textbook the authors must determine the grade as from

which pupils learn this language and the amount of time accorded to it, so that they can determine how much time is left to learn the mother tongue.

Layout

Arrangement of the blocks of text and graphic elements on a page.

An examination of primary school text-books produced forty years ago shows that the layout is the one element which has evolved most in the course of time and which is thus the clearest sign of modernity. Today there can be no doubt that good layout is not a luxury but a necessity for a textbook. But it must play second fiddle to pedagogical and didactic demands, and it must stay within the limits of what is acceptable to the target group.

The layout of a textbook emerges little by little parallel to the content matter. It is still vague during the conceptual phase, becomes more definite during the writing phase and takes on its finished form just before the book is printed. It is up to the authors to ensure that it performs its primary task - to help learners.

Layout Grid

A grid for arranging the elements on a page in line with vertical, horizontal and diagonal axes.

Newspapers and journals often need complex grids; in spite of the relative simplicity of the layout of a textbook the elements should not be arranged by chance, but in line with a few major axes.

Layout Plan

Guide for the layout of the book being produced, double page by double page. The layout plan is prepared at the end of the conceptual phase and should show the contents of each page and the approximate layout of illustrations and text.

Letter Card

Piece of card on which one letter is printed. Letter cards are commonly used by teachers to develop analysis and synthesis skills when pupils begin to learn to read. They are useful and inexpensive.

Letter cards are only suitable for use by individual pupils when good storage facilities are available in the classroom.

Line Length

Length of lines of a typeset text, often expressed in millimetres.

A text is said to be justified when all lines are the same length; in a reading book for beginners the text is always justified at the left side only leaving the text unjustified right, which means that the lines are of different lengths. This avoids having to split words which would get in the way of the efforts of beginners to decode the text.

Loan

The act of one language borrowing an element from another language.

By extension, a loan word is a word used in a given language that has been borrowed from another language.

Manuscript

Hand-written document. By extension text written by authors and submitted to the publishing

unit after typing.

National Language

The mother tongue of a social group which is generally dominated socially or politically by another group, which speaks a different language.

Most national languages have a difficult and hotly contested entry into schools. While recognising that they allow pupils to better assimilate knowledge, their detractors point out that they are not properly normalised and standardised.

Authors working on textbooks in national languages where this is the case should check the congruence of the alphabet, see that spelling and punctuation rules are respected and enrich the language by creating the technical and scientific terms they need.

Nationwide Introduction

Phase in the production of textbooks in developing countries.

In the typical production cycle, authors will produce a textbook which is then tested, evaluated and revised before a large run is printed and distributed to the various parts of the country for widespread introduction.

Non-Text Information or General Information

Texts which accompany the contents of a book.

These are texts which appear on the cover and the first and last pages of a book and give the reader general information.

In a textbook the authors must generally write these pages too. They must be written with particular care since they will be the visiting card of sorts of the book.

Official Approval

The official authorisation of the education authorities to use a textbook or other materials freely in schools.

When official approval is mandatory, as is the case in the Federal Republic of Germany, the titles thus selected are presented in a catalogue on the basis of which the education authorities, ad hoc committees and teachers can make their choice.

In pilot projects to produce textbooks in national languages, the education authorities often insist on checking to ensure that the particular socio-linguistic and socio-cultural features of the target group have been respected, to verify that the attainment targets are pertinent (i.e. that they do not deviate significantly from the official targets), and to ensure that an appropriate methodological approach has been adopted.

One-Teacher Schools

Schools where one teacher teaches all classes at primary level and also assumes the responsibilities of head teacher.

When the majority of the target group can be found in one-teacher schools the didactic materials produced must be geared as soon as possible to as independent a learning style as possible, which will allow the teacher to pay some attention to the other classes.

Pagination

The sequence of page numbers of a printed book.

Paper Wastage

Paper wasted due to a disharmony between the format of the book on the one hand and that of the sheets of paper and printing presses on the other.

Paper wastage should always be kept to an absolute minimum; in developing countries where the price of the paper may account for one-third or even half of the total costs of producing the book, this is all the more important.

Passed for Press

Authorisation issued by the publisher or the publisher-authors to the printer to expose the plates and print.

The blueprints must be signed to confirm that the assembly and the imposition are correct and that the work is ready for engraving.

Pedagogical Specifications

List of the most important pedagogical and didactic aspects to be taken into account in the materials to be produced.

In large publishing houses the Publishing Manager draws up the pedagogical specifications, which then constitute a detailed frame of reference for the authors.

In developing countries, this is rarely the case. It is almost always the authors themselves who draw up the pedagogical specifications on the basis of an in-depth analysis of the status quo.

Pilot Textbook

Provisional version of a textbook which is tested in a number of schools so that it can be analysed, and revised as necessary. In a developing country this phase should always last at least one academic year.

Preliminary Research

Important link in the publishing chain to produce textbooks in many developing countries.

Preliminary research is indispensable when the available data on the teaching and learning conditions are incomplete or unreliable.

Authors should carry out the lion's share of this work if not all of it, to ensure that they are in possession of all the facts, and to allow them to start work on the textbook on the basis of a common level of information. But, although they always bear the overall responsibility they will have to call on the services of specialists: a sociologist, a statistician, sometimes an anthropologist, an expert in teaching second languages if the project in question involves bilingual education and a linguist where textbooks are to be produced in a national language.

Preliminary Testing

Preliminary testing of the evaluation instruments in a smaller number of schools which are nevertheless representative of the conditions in schools in the country as a whole, before using them on a wider scale.

The attainment tests should always undergo preliminary testing and then be revised. When the technical and financial framework permits, the authors should conduct a second preliminary test if major revisions proved necessary.

Printer

The individual responsible for printing and finishing a book.

Each of the tasks performed by a printer to transform an imposition scheme into a finished product is either performed on the instructions of the publisher (e.g. purchase of paper, or choice of binding) or supervised by the latter (e.g. reading proofs before signing them ready for press, or checking the blueprints before marking them ready to engrave).

The printer should never be forced to take on tasks that are the responsibility of authors (correcting or completing texts) or of the illustrator (completing a page with illustrations), layout person or graphic artist (making typographical choices and deciding on layout).

Printing

Major link in the publishing chain.

Printing is not the sole responsibility of the publisher or the authors. But, during the conceptual phase it is up to them to ensure that the printing conditions are such that the work they plan can be effected at a later date (no 4-colour printing if the machines are not sufficiently precise, for instance). During the printing phase they are also responsible for checking that the results correspond to the terms of the contract with the printer.

Proof Reader

Individual whose skills and/or status is such that they can give textbook authors valuable suggestions or encouragement.

No publication should be printed until it has been screened by a number of proof readers. Time and energy are needed, however, to organise this phase, and textbook authors would do well to consider it a mini project in its own right.

Proofs

Provisional print-out of a text that has been set and composed by computer. Proofs must be re-read and corrected.

Publisher

Person who plans and directs the publication of a literary piece of work, and manages the promotion and marketing. In developing countries it is common for the publisher not to assume all the tasks within the editorial chain that would be the responsibility of a publisher in industrialised countries. This work is then distributed among the various other actors, and is often assumed by the authors alone.

Publisher-Author

Neologism which refers to the many individuals in developing countries who are incorrectly termed "authors".

In addition to the writing work, publisher-authors take on a greater or lesser part of the work that would traditionally be performed by the publisher.

Publishing Chain

All operations involved in translating an idea into a book, and publicising this book.

In textbook production it refers specifically to all the operations taking place from the start of the publishing project until the pupils have the finished books in their hands.

Publishing Specialist

Manager or specialist involved in the publishing chain.

Large publishing houses have many publishing specialists with well defined roles. In developing countries the responsibilities of the various individuals involved are often modified, and it is common for authors to have to assume some of the responsibilities generally borne by the publisher.

When textbooks are being produced in a national language, a few more specialists are required. Teams of authors must often call on the services of anthropologists, sociologists, statisticians, linguists and/or experts in the teaching of a second language.

Ream

Package of 500 sheets of paper of the same format.

Recto

The right-hand page of an open book where the book has an odd number of pages. It is the page that one tends to see flicking through a book. The title of a book should always start recto, as should the chapters as far as possible.

Research Institute

Research or teaching centre which may be private or public.

In textbook projects for primary level it is a good idea to seek the support of universities and teacher training colleges, so that the workload of the authors can be lightened by delegating some research work and incorporating existing structures in a common project in this way.

In practice, however, the gulf that generally separates these bodies often makes cooperation an uncomfortable affair.

Resource Person

Individual who gives the authors detailed information, generally of a socio-cultural or socio-linguistic nature.

The resource person cannot be considered an author; he provides the information, but plays no part in devising or developing the textbook.

Revised Textbook

Textbook which has been revised after having been tested at a number of schools.

Only a properly revised textbook should be considered for a large run.

School Enrolment

The number of pupils attending school within one class, school or country.

Serif

Small horizontal, vertical or oblique line across constituent parts of the type.

In this guide, the main body of the text is printed in *Palatino*, which displays serifs, while the tables are printed in *Univers* which does not.

Set of Didactic Materials

All didactic materials devised and developed for one subject and grade.

The decision as to the composition of the set must always be well thought through and should depend not only on pedagogical and didactic considerations, but also take into account practical, logistic and financial considerations.

Sheet of Printing Paper

A large sheet of paper on which several pages are printed at once.

The format and the number of pages of textbook must correspond to the dimensions of the sheet to be used.

Signature

A collection of at least four pages, and more often 16 or 32 pages which are printed together on one large sheet of paper. The sheet is then folded several times so that the pages are in the correct order. A book is generally made up of several signatures.

Speaking and Listening

Sub-discipline of the “mother tongue”, in addition to reading and writing.

Survey Report

Document presenting the main results of preliminary research regarding the development of textbooks.

The survey report is not indispensable for authors who are able to start the conceptual phase on the basis of the data they have gathered, but it is important for the education authorities.

To prepare the ground for the new textbook, authors are recommended to prepare a survey report, or have this done, and to present it to the relevant authorities.

Teachers' Guide

Reference book for teachers.

The teachers' guide should always be part of a set of didactic materials; in some cases it can even replace the pupils' textbook.

The teachers' guide must offer teachers with a low level of professional training a supplement to their training and a sort of “script” with detailed instructions on how to conduct day-to-day lessons in a given subject.

The guide is the ideal vehicle for teaching innovations in developing countries, unlike industrialised countries, where innovation generally originates from research institutes and is circulated in specialised technical journals.

Technical Specifications

List of the most important physical and graphic aspects of the materials to be produced.

The technical specifications are generally drawn up by the Art Director, the Commercial Manager and the Production Manager. They are vitally important since they allow those in charge to check the feasibility of the production project: the printer prepares his quotation for the costs of printing and finishing on the basis of the technical specifications.

Testing Textbooks

Link in the publishing chain.

In developing countries the lack of reliable, complete data on conditions in schools and the heterogeneity of teaching and learning conditions make it vital to test the new textbook over a period of at least one academic year in a representative sample of schools.

Textbook Illustrator

Graphic artist who uses his skills to illustrate textbooks, complying with pedagogical, didactic, aesthetic and perhaps financial considerations. A textbook illustrator must work closely with the authors who are generally in overall charge of the illustration work.

Textbook Projects

Education project set up to supply text-books for a developing country.

Textbook projects involve either one phase in the publishing chain, such as large-scale production and distribution of existing books, or the entire chain from the feasibility study to testing, large-scale production, distribution and teacher training.

These projects demand human resources, technical inputs and funds and are often supported by bilateral or multilateral assistance.

Text Exercise

Exercise consisting solely of text, with no concrete or abstract illustration (diagrams, frames, etc.).

Text-Illustration Exercise

Exercise which is made up of a text and a graphics part.

In reading books for primary level these are useful to teach pupils to compose, complete or change words and sentences. There should always be at least one text-illustration exercise to lighten the extreme dullness of text exercises.

Text-Image Unit

The contents and form of a text.

In textbooks which address the primary level, and particularly in reading books, authors must not only devise and write good texts. They must constantly be alert to ensure that their texts lend themselves to illustration.

The interaction of the form and the substance allows the authors to achieve this best.

Time-Table

Official learning time.

Where several different time-tables exist side by side for pupils of the same grade, the authors' work is made more complex by the fact that they must develop one set of materials for all pupils, which will enable the different target groups to achieve the same attainment targets within the same time.

Two-Colour Printing

Generally black and a light colour, which may be printed in a solid block or screened to

produce shading effects. The shades of colour thus obtained relieve the harshness of monochrome print, at a significantly lower cost than 4-colour (four-colour) printing.

Unformatted Typesetting

The typeset text is justified at the left-hand side, but comprises no hyphenation or layout.

This text constitutes the first set of proofs which must be re-read and corrected, before a second set of proofs is obtained, which will take the hierarchy of the text into account. In practice authors often by-pass these two sets of proofs, especially when they have access to a computer.

Weight

Thickness of the lines of a character.

A text may be printed in extra light, light, semi-light, medium, semi-bold, extra bold and ultra bold. Judicious use of these different weights can help underline the hierarchy of the text and enhance the typographical readability.

Width (of Characters)

The visible width of type character. The width of characters can be modified, to make them more condensed or more expanded, which has repercussions on the typographical readability of the text.

Word Card

Piece of card on which one word is printed. Word cards are commonly used by teachers to help pupils make up and change sentences. They are useful for pupils learning to read.

Word cards are only suitable for use by individual pupils when good storage facilities are available in the classroom.

Word Spacing

Blank space left between two words in a sentence.

Word spacing may be normal, condensed or expanded and the choice will have an impact on the typographical readability and the aesthetic quality of a text.



Marie Châtry-Komarek has worked for more than fifteen years in Africa and Latin America on the production of school textbooks in national languages. In this book, she describes the work carried out by a German-Malagasy project, supported by the German Agency for Cooperation (GTZ), the objective of which was to provide teachers and students with textbooks in Malagasy, adapted to their specific needs. She has previously written about the systematic development of texts in *quechua* and *aimara* in a book in Spanish: *Libros de lectura - para niños de lengua vernácula*. At present she is preparing a book on the training of author-publishers of textbooks in developing countries.



The German Foundation for International Development (DSE) is an institution for the initial and advanced training of specialists and executive personnel from developing countries. In addition, it prepares German experts for their assignments in a developing country, and maintains the Federal Republic of Germany's largest centre for documentation and information on development policy.

The DSE works in the areas "Education, Science and Documentation", "Economic and Social Development", "Public Administration", "Industrial Occupations Promotion", "Food and Agriculture" and "Health". Its objectives are an international exchange of experience and the qualification of specialists and executives from developing countries.

Dialogue and advanced training programmes (conferences, meetings, seminars, training courses, etc.) support projects which serve economic and social development. The DSE thereby contributes to an effective, sustainable, and wide-ranging development process.

Since 1960 the DSE, in cooperation with national and international partner organizations, has given advanced professional training to more than 100,000 specialists and executive personnel from more than 140 countries. An increasing part of the programmes takes place in the developing countries, the rest in Germany.

The DSE makes its contribution to development cooperation on the basis of guidelines of the Federal government's development policy. The institutional contribution donor is the Federal Ministry for Economic Cooperation and Development (BMZ).

The DSE was founded by the Federal and Land governments in 1959 on the initiative of the political parties represented in the German Bundestag as a foundation under civil law. Its main seat is Berlin, and its other locations are Bonn, Bad Honnef, Mannheim, Feldafing, Zschortau, and Magdeburg.



Code Europe was established in Oxford as a UK charitable organization in May 1993 as part of the international CODE network which includes CODE affiliates in Canada, USA, and ten countries in Africa (Ethiopia, Ghana, Kenya, Mali, Malawi, Mozambique, Senegal, Tanzania, Zambia and Zimbabwe), and two in the Caribbean (Belize and Guyana). The overall CODE programme includes book distribution, library development, and support for indigenous publishing industries. As part of the worldwide CODE network, it represents the overall organization in Europe, and develops and manages projects in partnership with organizations in the developing countries. CODE Europe's *Partners in African Publishing Programme* aims to increase collaboration between publishers and organizations in Europe and Africa.

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