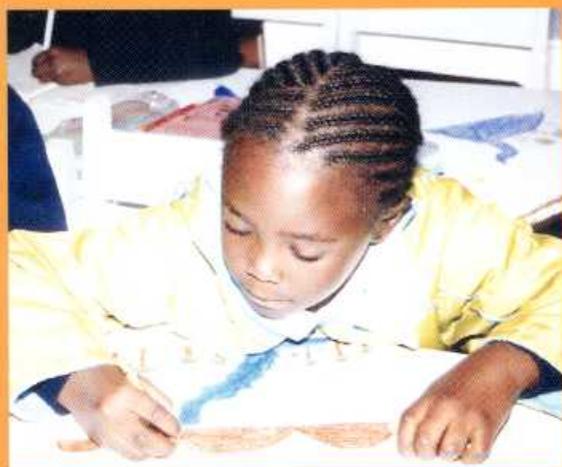




# The Textbook Writer's Manual

Eddah Gachukia and Fay Chung

Edited by  
Margaret Crouch



International Institute  
for Capacity Building in Africa  
United Nations Educational, Scientific and  
Cultural Organization

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# Contents

Acknowledgements	v
The Contributors	vi
Foreword	vii
How To Use This Manual	viii
<b>Introduction</b>	<b>1</b>
<b>Part I: Applying Education Policy and Learning Theory</b>	<b>5</b>
<b>1 – Goals and Objectives of Education</b>	<b>7</b>
1.1 Meeting National Goals	7
1.2 Meeting Personal Goals	8
1.3 Fostering National Unity	8
1.4 Providing for the Acquisition of Positive Knowledge, Attitudes and Skills Necessary for Development	9
1.5 Promoting Sound Moral Values	10
1.6 Promoting Social Consciousness and Responsibility	10
1.7 Promoting Respect for the Development of a Nation’s Varied Cultures	11
1.8 Promoting International Consciousness and Positive Attitudes towards Other Nations	12
1.9 Instilling a Culture of Hard Work	12
1.10 Laying a Firm Foundation for Technological and Industrial Development	13
1.11 Selecting Content	13
1.12 Conclusion	15
<b>2 – Learning Theory as a Guide to Textbook Writers</b>	<b>16</b>
2.1 Moving from the Known to the Unknown	16
2.2 Biological Development and Readiness for Learning	17
2.3 Attention Span	18
2.4 Multiple Opportunities to Practise a Skill	18
2.5 Bloom’s Taxonomy	19
2.6 Limiting or Extending the Child’s Mental Development	20
2.7 Types of Intelligence	22
2.8 Conclusion	24
<b>3 – Cultural Reflection and Textbook Writing</b>	<b>25</b>
3.1 Factors Influencing Culture	25
3.2 Incorporating Cultural Values into the Textbook	26
3.3 Incorporating a Time Perspective	26

3.4	Incorporating National Issues into the Textbook	27
3.5	Incorporating International Issues into the Textbook	28
3.6	Incorporating Values into the Textbook	28
3.7	Language Use	28
3.8	Conclusion	29
4 -	Teaching/Learning Methodologies	30
4.1	Teacher Centred Methods	30
4.2	Pupil Centred Methods	31
4.3	Considerations in the Selection of Teaching/Learning Methods	34
4.4	Conclusion	37
5 -	Textbooks and the Integrated Curriculum	38
5.1	Approaches to Curriculum Integration	38
5.2	Integration of Different Subjects in Textbook Writing	40
5.3	Conclusion	41
6 -	Assessing Learning Outcomes	42
6.1	Assessing Pupils' Performance	42
6.2	Types of Evaluation	43
6.3	Assessment Methods	44
6.4	Points for Consideration in the Preparation of Pupil Assessments	47
6.5	Preparing Learners for an External Examination	48
6.6	Conclusion	48
<b>Part II:</b>	<b>Getting Down to Business</b>	<b>49</b>
7 -	Textbooks and Gender	51
7.1	Why Gender Is a Critical Issue in Textbook Writing	51
7.2	Making Textbooks Gender Responsive	53
7.3	What a Gender Analysis Is All About	53
7.4	Conclusion	55
8 -	Some Language Issues in Textbooks	56
8.1	Language Policy	56
8.2	All Teachers Are Language Teachers	57
8.3	Language Standardization	58
8.4	Conclusion	58
9 -	Technicalities of Textbook Writing	60
9.1	The Syllabus	60
9.2	The Flow of Text	60
9.3	Making the Most of Headings	62
9.4	Illustrations	62
9.5	Examples and Exercises	63
9.6	Glosses	64
9.7	Research and Information Sources	64
9.8	Length of the Book	65
9.9	What the Book Will Look Like	66
9.10	Conclusion	66
	Conclusion	67
	Bibliography	69

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*Eddah Gachukia and Fay Chung*

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# Foreword

**E**ducation is a fundamental human right, guaranteed by many international human rights instruments, which include the 1948 Universal Declaration on Human Rights, the Convention on the Rights of the Child (1989), and the Organization of African Unity (OAU) Charter on the Rights and Welfare of the African Child (1990). All children are entitled to quality education, and the role of textbooks is critical in this aspect. The information in this manual contains a framework to guide textbook writers committed to the provision of quality education and learning resources.

In the recent past, Africa has experienced significant expansion in basic education, especially with the governments' commitment to the achievement of Education for All (EFA) goals by 2015. Many writers have responded to the need for textbooks, to cater for the growing numbers of learners.

While many textbooks are commendable in content and layout, educationalists have been concerned about the quality of a number of the textbooks that are produced. It is this concern that has culminated

in the production of this manual, intended to guide textbook writing. This is especially in recognition of the difficulties in teaching and learning processes without proper textbooks, which in many cases are the only sources of information for teachers and pupils.

The manual is meant to be a contribution to the learning and teaching process in Africa and outside, in an effort to enrich the achievement of EFA goals. All textbook writers are encouraged to read and use this manual as a guide in their writing. They are free to translate, reproduce or use the information contained in the manual, as long as they acknowledge the source.

*Joseph N. Ngu, PhD*  
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Deputy Director  
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# How To Use This Manual

This manual has been developed as a guide for textbook writers. The guidelines are provided around some critical issues that need to be considered by textbook writers for the production of more focused and appropriate textbooks, for the achievement of educational goals and objectives.

It is recognized that textbook writing for specific subjects and levels of learners is guided by the national education philosophy, which in turn guides educational goals and objectives. In this regard, issues of concern that textbook writers need to bear in mind are:

- ◆ Goals and objectives of education.
- ◆ Learning theory as a guide to textbook writers.
- ◆ Cultural reflections and textbook writing.
- ◆ Teaching and learning methodologies.
- ◆ Integrated curriculum approaches in the textbook.
- ◆ Assessing teaching and learning.
- ◆ Consideration of language as a medium of instruction.
- ◆ Gender responsiveness as a critical factor in textbook writing.
- ◆ Language issues.
- ◆ Technical requirements for manuscript production.

The manual provides a broad

framework to guide textbook writers in consideration of these issues. The manual is meant to empower writers with the knowledge and skills needed to produce useful, usable, practical and appropriate textbooks. A consideration of the issues raised in this manual forms the basis for a well-balanced text for different levels of learners. It is therefore hoped that the discussions brought out in the manual will help textbook writers to develop quality books that encourage all-inclusive learning outcomes, including cultural and gender responsiveness.

Part I contains six chapters that provide an overview of education policy and learning theory as they apply to textbook writing. The three chapters in Part II then lay out some specific norms the textbook writer needs to consider in preparing the text.

The manual does not intend to be exhaustive, but leaves ample room for the writer to select and use other resources and guidelines, especially those that are relevant to the situation of the country of focus. Writers are encouraged to be more creative and to come up with formats, illustrations and content appropriate to the national education philosophy, goals and objectives, the level of learners, and the socio-cultural context.

The user of the manual is reminded that any textbook derives

its general content from the ideals articulated in the national syllabus, in line with the goals and objectives of education generally, and those relating to each subject area in particular. It is important that textbook writers recognize as their primary mandate the need to undertake thorough research in their specific subjects and the topics and subtopics to be covered in the text. Although many examples are given on the issues raised here, they are intended to be just that – illustrations of possibilities that will hopefully spark the creativity of the writer. The sample exercises and activities provided in the various chapters of the manual are either generalized or context specific. They need to be substituted with appropriate and relevant examples. The idea is to show the importance of providing the teacher and the learner with sufficient examples, exercises and questions to facilitate demonstration that each topic or subtopic has been thoroughly understood. Chapter 6 in particular focuses on the multiple ways of assessing the outcomes of the learning process.

The writing of textbooks demands that the textbook writer possess certain essential capabilities. The intention of the manual is to enhance – not replace – such capabilities. These include:

- ◆ Knowledge of a particular subject and how to break down facts into manageable units.
- ◆ Know-how on how to conduct research for background information pertinent to the subject area being covered.
- ◆ Knowledge of how learners learn and the conditions conducive for learning.
- ◆ Knowledge of varied teaching/ learning methodologies and how to avoid monotony in the teaching/ learning processes.

- ◆ Appreciation of visual, audio and other teaching/ learning aids and how to prepare them cost-effectively.
- ◆ Capacity for innovation, creativity and improvisation.
- ◆ Familiarity with and first-hand knowledge of learners of various ages and abilities.
- ◆ Ability to communicate effectively in addressing the needs of teachers and learners.
- ◆ Knowledge of the context, in many cases multiple contexts, in which the textbook will be used. These include geographical, ethnic and racial contexts, rural/urban backgrounds, socio-economic groupings, and religious diversification.

All these concepts pose the challenge of inclusiveness, yet recognition of unique needs of specific groups.

Education that is efficient and thorough needs to incorporate knowledge, values, skills and attitudes. This means that education does not consist of mere facts and figures. It is a dynamic process that integrates a nation's broader goals and objectives into every subject and activity. The teaching/ learning methodologies adopted for every lesson should strive to achieve more than the subject matter, to inculcate values and attitudes such as those highlighted in the Introduction. Chapters 4 and 5 provide the whole spectrum of teaching/ learning methodologies that would guarantee thoroughness in learning, informative, enjoyable and integrative processes within the discussion setting.

The manual summarizes tested theories on learning and teaching and provides examples on how theories should be translated into classroom practice. It is critical that the author be familiar with them in order to facilitate learning rather than create obstacles

to the learning process. Reproduction of these theories in Chapter 2 should enable the writers of textbooks to capitalize on all the capabilities of each learner by highlighting what teachers must do within the classroom setting.

Teachers and learners do not learn in a vacuum. They have a specific context in which the learning process must be rooted, if education and knowledge are to be meaningful and relevant. The socio-cultural context of the learner is of particular significance, especially in Africa where traditional

culture was eroded by colonialism and the adoption of foreign media of communication. Chapters 3 and 7 highlight the importance of establishing critical links with the reality of the world in which the learner lives and operates. Gender biases, for example, are frequently rooted in stereotype roles of women and men, as if socio-cultural development is a static process.

The last chapter details some of the technical points of manuscript production to ensure that the material is presented as effectively as possible.

# Introduction

The process of learning is influenced by many factors. Besides the state of the learner's brain, the learning materials can stimulate the learner in a way that reinforces learning. Since textbooks form an important medium for the learning process, the way materials are written and presented is important. Equally important is how learning takes place. Thus an overall view of learning theory and how it can be used to guide textbook writing is worth consideration.

## Learning Theory

A number of issues within learning theory are important in guiding textbook writing. These are discussed in detail in the chapters in Part I, and can be summarized as follows:

- ♦ **Cultural and experiential familiarity:** This is particularly important for young children who come to school having already acquired a large number of skills, concepts, knowledge, values and attitudes. Texts should begin from the known and familiar, and progress to the unknown and unfamiliar. School and therefore textbooks should in general reinforce learning that has already taken place. Some learning may be retrogressive, however, and should

not be reinforced, e.g., gender bias. It is therefore important to identify what the child already knows and work towards what is unfamiliar or unknown to the child.

- ♦ **Attention spans:** Many people have a short attention span, especially children, that may be no more than five to ten minutes long. Beyond this span the learner is easily distracted, interest will waver and learning will be interrupted. The actual length of time will depend on the age and interest of the learner, the complexity of what is being learnt, and the way the material is presented.
- ♦ **The practice of skills, concepts, knowledge, attitudes and values:** Practice sessions should be spaced over the time available. The textbook writer should consider not only the short term (less than one year), but also a complete education cycle, e.g., the whole of primary education, the whole of secondary education. This is because many skills take years to develop and are often hierarchical. The learner begins with simple skills and builds up to more sophisticated ones at later stages in the education cycle.
- ♦ **Bloom's Taxonomy:** This is a tool for checking the level of skills being

developed in the curriculum and textbook. Many textbooks develop only low-level skills and thus do not prepare learners for higher level learning processes. Pupils may acquire a great deal of knowledge, but may have developed very few concepts, and perhaps cannot utilize the knowledge except for repetition in rote-learning examinations.

- ♦ **School curriculums and textbooks:** These are known to either extend or limit the child's learning. Some curriculums offer only a narrow range of skills, concepts and knowledge, and sometimes these are learnt at a very superficial level. Other curriculums may offer a wider range and may also encourage the development of higher-level mental skills.
- ♦ **Cultural values:** These are considered to be very important by parents and society. Parents may prefer a religious school, for example, even if the curriculum is narrow, because the school reinforces the community's culture and values.

## National Aims and Objectives of Education

Every society and nation has certain goals that it expects to accomplish by educating its people. These include factors that touch on core values such as democracy, human rights, national unity and patriotism, along with strategic concepts such as family planning, health education, a scientific approach to problem solving and agriculture as the basis of development. For educationalists, the most critical factor is how these general principles can be interpreted in the syllabus and in the textbooks in connection with each subject – e.g., mathematics,

**Begin from the known and familiar and progress to the unknown and unfamiliar, from the simple to the more complex.**

building, language – and for the various class levels.

### **Curriculum Aims for Each Subject Area**

Subject area objectives incorporate skills to be developed, specific concepts to be introduced, and underlying values and attitudes. Areas of concern for textbook writers include:

- ♦ **Technical correctness:** It is essential for the textbook to present accurate, up-to-date information and research in the subject area. Archaic and out-of-date concepts, knowledge and skills in our textbooks are retrogressive. Every effort should therefore be made to ensure the relevance and technical accuracy of what is taught.
- ♦ **Specific skills:** These should be introduced hierarchically from simple to more complex.
- ♦ **The amount of time needed to teach and practice the skills:** The textbook should be planned in such a way that there is sufficient opportunity to practise these skills spaced over time (three months, six months, one year, three years, six years, etc.) so that important skills are fully internalized. It is therefore important that specific skills be clearly identified, and that all of them be thoroughly covered.
- ♦ **Integration of concept and knowledge:** These should be identified clearly. For example, the

ability to use the simple present tense is a skill. The concepts and knowledge that can be covered to teach the simple present tense can vary widely, by using examples that illustrate both the verb tense and a range of applications that apply to the learner's world.

### ***Profile of the Student***

Consideration should be given to the background and present profile of the student, and the expected final profile. That is, the textbook writer should have clearly in mind what the outcome of learning should be.

### ***The Language Question***

The language (or languages) used as the medium of instruction is defined within a country's education policies and guidelines. Textbook writers need to be aware of this, and develop the text accordingly, depending on the level of the learners.

### ***Cultural Reflection in the Curriculum***

Cultural perspectives should be given high consideration. It is important to root the learners in their own context while at the same time exposing them to other people's cultural realities. Also important is the fact that cultures are dynamic, and that they vary from local to national and international.

### ***Teaching and Learning Methodologies***

The most important idea here is not only to use child centred approaches in teaching but also to ensure that learning is fun. Writers must be flexible to include teaching/learning methods for a wide variety of teachers both trained and untrained. This consideration should be given to both pupils' textbooks and teachers' guides.

### ***Integrated Learning***

Different subjects across the curriculum need to be integrated for a holistic learning process to enhance individual development and self-fulfilment

### ***Evaluation of Textbooks***

Each textbook must be evaluated for its effectiveness in achieving national education goals as well as specific subject objectives. The evaluation should include the gender responsiveness of the textbook.

### ***Pupil and Student Assessment***

Examinations tend to be very important in Africa, as they provide widely accepted ways of screening children's access to limited secondary and higher education opportunities.

Issues to consider in textbook writing include:

- ♦ How far the textbook will provide for this need.
- ♦ Types of examination questions.
- ♦ The types of assessment and how these affect learning.
- ♦ Whether the assessment system encourages certain types of learning and thinking.

### ***Piloting the Textbook***

It is essential to test the textbook before it is finally printed. This is done with a few teachers and children in a few selected schools. The way it is done depends on the expected targets, as it is critical that feedback be received from these. The outcome of the trials should be taken seriously, since the success of a textbook is judged not only by its technical content, but also by its usefulness to the teachers and pupils, in terms of language, gender responsiveness, page layout and readability in general.



# Part I

## Applying Education Policy and Learning Theory

1 – Goals and Objectives of Education

2 – Learning Theory as a Guide to Textbook Writers

3 – Cultural Reflection and Textbook Writing

4 – Teaching/Learning Methodologies

5 – Textbooks and the Integrated Curriculum

6 – Assessing Learning Outcomes



# Goals and Objectives of Education

**P**reparation of school textbooks, like the syllabus, is based on the assumption that the country has well articulated national goals and objectives for all educational programmes, subject areas and activities at different levels of education. Every country has its clearly stated educational goals and objectives. Education is associated with the achievement of these goals and objectives, which in turn leads to national and personal development.

While many goals are common to many nations, some are unique and specific to individual countries. The emphasis placed on each goal may also differ depending on the development needs of the country. Some countries insist that their education systems stress religious and moral values, while others prefer to leave these to parents and society. Others emphasize economic development as the overriding goal of education. The importance of these and other values, skills and attitudes means the education process is a catalyst and prerequisite for development.

## 1.1 Meeting National Goals

Among the most frequently cited goals and objectives of education are:

- ◆ Enabling learners to acquire knowledge, skills, expertise and attitudes needed to exploit their individual potential and talents, for a desirable and sustainable quality of life.
- ◆ Promoting positive attitudes towards healthy lifestyles including appreciation of physical activities such as good health and environmental protection.
- ◆ Developing the ability for inquiry, critical thinking, rational judgement, thinking through enquiry, and the use of all the senses.
- ◆ Laying a firm foundation for technological, industrial and other areas of development including mastery of the basics for entrepreneurship and productivity.
- ◆ Fostering national unity within a multi-cultural, multi-ethnic, multi-lingual and, where relevant, multi-racial diversity.
- ◆ Instilling the values of democracy and promoting social justice, moral responsibility and obligation, including harmonious coexistence among the people.
- ◆ Enhancing understanding, appreciation and respect for other people, their cultures and religions.
- ◆ Promoting conscious appreciation of the need for international understanding, cooperation between nations and respect for the concept of peace.

- ◆ Inculcating respect for the elderly, and promoting understanding and appreciation of the abilities and limitations of people with special needs and other disadvantaged groups in society.
- ◆ Fostering love for the country (nationalism and patriotism).
- ◆ Instilling moral values, promoting their practice and developing an understanding of God.
- ◆ Developing communication skills.
- ◆ Fostering national understanding of the history and socio-cultural milieu of own traditions.
- ◆ Developing leadership qualities and self-confidence.
- ◆ Developing understanding and appreciation of cultural and recreational activities and the ability to participate in them.
- ◆ Developing positive attitudes and cultivating a culture of happiness.

## 1.2 Meeting Personal Goals

Education is also expected to inculcate in learners:

- ◆ Capacity for creativity, innovation and critical thinking.
- ◆ Culture of hard work and the need for participating in productive activities.
- ◆ Positive attitudes towards healthy lifestyles such as nutrition, family planning and well being, environment, water and sanitation.
- ◆ Self-reliance and self-confidence in knowledge acquisition and readiness for positive change.
- ◆ Inquisitive minds and thirst for knowledge.
- ◆ Sound moral values that incorporate integrity, understanding and tolerance.
- ◆ Social consciousness, responsibility towards others and family values.

- ◆ A firm foundation for participation in social and economic affairs of the nation.



### Discussion Points

The Thailand National Education Act (1999, amended 2002) articulates one of the objectives of education thus:

“Education shall aim at the full development of the Thai people in all aspects: Physical and mental health; intellect; knowledge; morality; integrity; and desirable way of life so as to be able to live in harmony with other people”.

1. Get a copy of your country’s blueprint on education and/or the syllabus and find out how the goals and objectives are stated.
  - Which ones are not included in the Thailand list?
  - Which of the listed goals and objectives are also critical to your country?
2. Define and elaborate each objective along the lines presented in this chapter.

## 1.3 Fostering National Unity

In a country with people from different ethnic groups, cultures, religions, languages and races, it is important for education to help them to live and interact as one nation. This can be achieved if the values of coexistence, appreciation and respect for others are integrated into the curriculum.

Education must inculcate a sense of nationhood in young people through

the promotion of positive attitudes of mutual respect that contribute to harmony and nationalism. Education for national unity emphasizes the



**Example**

How would you as a science writer foster unity on the topic "Pollution"?

factors that unite people and plays down divisive elements. It helps to build characters that champion these values. In many African cultures, there exist traditional prejudices that are frequently expressed by adults concerning the food, customs, and social and cultural attributes of one ethnic group or clan or the other. The education system should strive to wipe out such prejudices and enable learners to view and treat each other with mutual respect and understanding.

Right from an early age, children should be taught and organized in a way that forces them to learn about other cultures. Art, drama and music lend themselves to cross cultural appreciation.

## 1.4 Providing for the Acquisition of Positive Knowledge, Attitudes and Skills Necessary for Development

Education is widely acknowledged as a prerequisite for development. This is because the human resource is the primary asset a nation has for triggering and accelerating development. Education needs to equip young people with relevant knowledge, skills and attitudes for

creative thinking, critical decision making, innovation, self-reliance and entrepreneurship. It should also inculcate the culture of hard work and the ability to make right choices.

The content and methodologies of education should reflect and encompass critical areas of social, economic and cultural development. They should integrate appropriate attitudes towards technological and industrial development. Education at all levels should incorporate pertinent issues in development such as environmental conservation, good health, proper nutrition, and issues relating to water conservation and management. Teaching and learning methodologies should be so structured as to influence young people for knowledge acquisition, for example through broad reading and sharpening the curiosity to know and to learn.

Attitudes are best shaped through character portrayal, counselling and role modelling. Skills can be acquired through formal teaching, by emulating others and by engaging in creative, practical activities. A textbook can support this by providing instructions for the development of a particular skill, e.g., recipes in cookery, guidelines on how to undertake a scientific experiment, or examples of how people perform certain desired roles.

The art of critical thinking can be cultivated through well calculated and graded levels of questioning during the course of any one lesson. The guidelines spelt out in the textbook

Theoretical learning produces robots while practical experimentation and discovery as modes of learning produce thinking individuals with concrete knowledge and skills.

should guide the teacher in asking in-depth questions that compel learners to think creatively and to freely and convincingly give their opinion.

## 1.5 Promoting Sound Moral Values

Education needs to provide for the development of knowledge, skills and attitudes that can instil the moral values essential for enabling children to grow into responsible, self-disciplined and self-reliant individuals. Language, literature, history and maths textbooks should highlight characters that are worth emulating, characters that help learners to make sound judgements in the face of negative pressure. The content of all subjects should aim at rewarding virtue and condemning vice. The presentation of role models provides the most effective method of instilling positive character and discipline. The entire education system should emphasize the need for learners to distinguish between right and wrong and also the need for zero tolerance of negative, antisocial behaviour.

### ?! ? Examples

1. What do you think will happen when we add ..... to .....
2. Why do you think Judy behaved the way she did?
3. Compare a lemon with an orange by explaining similarities and differences.
4. "The government is performing badly". Discuss.

Integrity should never be compromised. Such emphasis at the different levels of the education system

### ?! ? Example

1. In a religion lesson, a writer could pose a question like the one below:

Samira, a school leaver, was looking for a job. When she went to the first office the manager insisted on being given a bribe before employing her.

*What should Samira do?*

- In answering the question, the learner will take a stand for or against corruption.
2. In writing about a topic on "Drug Abuse" the textbook writer will not only discuss what it is and all it entails, but can encourage the teacher and the learners to visit the streets, look at the way of life of street children (many of whom are drug addicts) and offer help to them.

will hopefully minimize corruption and other vices in society, when backed by an effective legal system and social support. One of the roles of the school is that of providing a common ground for exposure of desirable values for the majority in a country. The textbook writer needs to be aware of this at all times.

## 1.6 Promoting Social Consciousness and Responsibility

Within an education system that provides for equal opportunities for all, education should promote the concept of social responsibility

**Move from the known to the unknown, build from the simple to the complex.**

and concern about the needs of others. This can be achieved through numerous opportunities for activities that foster social consciousness and service across social, economic, gender and geographical divides. It can also be inculcated through the portrayal of positive characterization. Social awareness, when deliberately cultivated, leads to personal development that is not selfishly motivated.

Textbooks should emphasize values and practices that socialize the young towards respect for the elderly and the sharing of whatever resources are available. The values of cooperation, sharing and appreciation of each participant's contribution need emphasis in subject areas. Young people need constant reminders about minding the welfare of the less fortunate in society. The textbook can reflect young people and adults who actually practise such concerns, for example taking care of the elderly or assisting orphaned children.

## 1.7 Promoting Respect for the Development of a Nation's Varied Cultures

One of the evils of colonialism was the denigration of African cultures and traditions. Although most nations have engaged in efforts to restore the African character to history and culture, there is still the hovering danger of cultural and economic colonization. Young people are particularly vulnerable when they are bombarded with cultural attributes of other people that are supposed to be superior to their own.

In order to avoid the dangers of media images from foreign cultures, education needs to instil in young people a firm understanding of their nation's varied cultures and an appreciation of their validity and value within contemporary society. Well grounded in their cultures, young people would be less likely to be swept away by the waves accompanying rapid social changes in development. Like national unity, national cultures in their different manifestations should feature in school textbooks as background information and in

### Examples

1. In a history lesson on traditional society, points can be shown in two columns as follows:

#### Practices not acceptable today

- Witchcraft
- Female genital mutilation
- Forced marriage
- Early marriage

#### Practices acceptable

- Reconciliation
- Belief and worship of God
- Hard work
- Respect for life
- Sharing

2. In conclusion the writer can give the dangers of continuing unacceptable practices and encourage learners to practice what is acceptable.

their own right as learning material. The textbook should be suggestive of different but valuable traditions, practices and other attributes of culture, e.g., examples of dress, housing, food, music and drama. It should also draw the learners' attention to negative aspects of their own cultures and traditional practices – that is, no culture is perfect.

## 1.8 Promoting International Consciousness and Positive Attitudes towards Other Nations

No nation is an island by itself. We are all part and parcel of the wider society regionally and internationally. Media influence and the rapid process of globalization are also ensuring that information dissemination is more efficient, and that what happens in other nations influences and affects everybody. It is therefore important that young people learn to become part and parcel of this larger global community and to appreciate their rights, benefits, obligations and responsibilities.

As young people grow older, it is also important that their world and their experiences be broadened beyond their nation's boundaries to other nations and communities. The ideal practice in education is to move from the known to the unknown. However, the school and the textbook are not the only agencies of education. It is therefore critical that formal education take media influences into account and help young people to see beyond their own boundaries, while at the same time empowering them not to be swept by negative aspects of globalization.

## 1.9 Instilling a Culture of Hard Work

Ideally this can be achieved through the processes of efficient time management in and out of class, through creative and interesting activities, and through a practical approach. A boring and theoretical lesson will kill the interest and enthusiasm of the learner. In addition to the teachers' guide, the textbook needs to be suggestive of the teaching/learning methodologies to be adopted and also give suggestions on teaching/learning aids. All subjects of the curriculum lend themselves to such interpretation.

Students need sustained motivation to discover for themselves. Time spent listening to the teacher needs to be brief, and to be preceded and immediately followed by action. Children may also need guidance on how to spend their free time. This is not to deny them leisure or self-motivated play, but to provide for longer-term improvement in planning their lives, rather than "hanging out". Exercises and manageable homework, which the children do out of class, can achieve two goals: monitoring how well what is taught/learned has been understood and internalized, and teaching children to work without necessarily being supervised. The latter is a lifelong skill all learners need. It reinforces commitment to and persistence in the completion of a task.

Details of effective teaching/learning methodologies, resources and activities are provided in Chapter 4.

A boring and theoretical lesson will kill the interest and enthusiasm of the learner.

## 1.10 Laying a Firm Foundation for Technological and Industrial Development

It is important that education inculcate in the learner knowledge about and positive attitudes towards the economic sectors that form the backbone of the country's economy so as to capture the aspirations of the nation for future development. A country whose agricultural base is important, for example, will ensure the emphasis and appreciation of agricultural skills and technology in the curriculum. How agriculture is taught/learnt in school determines the interest of future citizens in the sector. The countries of Southeast Asia – Singapore, Malaysia and Thailand – are well known for their involvement of the private sector in determining curriculum content, and for providing job attachment programmes for students.

As future employers the private sector knows what skills it needs and can help ensure that these are integrated into the school curriculum and teaching methodology. Textbook writers can include contacts with the



### **Discussion Points and Exercises**

1. Discuss exercises that connect school with industry.
2. Design a debate that compares two professions/occupations.
3. Identify a classroom project that would engage children in agriculture/entrepreneurship and excite them about it.

The overall goals and objectives for one country's (Kenya) education include:

- Fostering national unity
- Providing for the acquisition of knowledge, attitudes and skills necessary for development.
- Promoting sound moral values.
- Promoting social consciousness and responsibility.
- Promoting respect for and development of the nation's varied cultures.
- Promoting international consciousness and fostering attitudes towards other nations
- Instilling the culture of hard work.
- Laying a firm foundation for technological and industrial development.

private sector as essential components in the learning processes, e.g., through visits, career talks and projects. In addition, learners should be deliberately encouraged to work with manipulative toys and tools from an early age to appreciate the value of technology in development.

## 1.11 Selecting Content

Content selection, while adhering to what is articulated in the syllabus, will take into consideration teaching/learning approaches that are appropriate for integrating the values identified above. These values are best tackled when integrated into teaching methodologies. They cannot

be taught in isolation of educational content. For this reason they must be clear in the minds of textbook writers. The rationale for the selection of the content should also be guided by certain principles, from human rights to the development of human potential and the age level of the learners. These principles are detailed below.

### **1.11.1 Education as a Basic Human Right**

Education is today recognized as a basic right of all individuals. Nevertheless, education has a purpose and is not merely an end in itself. If we define content as the subject matter of education, it needs to include knowledge, values, skills and attitudes. The World Declaration on Education for All, Article I, defines basic learning content as

knowledge, skills, values and attitudes required by human beings to be able to survive, to develop their full capacities, to live and work with dignity, to participate fully in development, to improve the quality of their lives, to make informed decisions, and to continue learning.

Education is vital for personal and social development. It should provide the learner with a firm foundation of knowledge for further learning and development. The acquisition of literacy triggers the possibilities of self-reliance in knowledge acquisition since

The content should aim at equipping learners with knowledge and skills essential for survival, for developing their individual potential and for enhancing their quality of life.

learners can now read and search for needed information independently and on their own.

### **1.11.2 Acquisition of Skills and Knowledge, and Development of Individual Potential**

At each level, the content should aim at equipping learners with knowledge and skills essential for survival, for developing their individual potential and for enhancing their quality of life. It should also promote their capacity for making rational and informed decisions on any issues affecting them.

The preparation of the curriculum including textbooks therefore needs to take into consideration the content that is relevant and of greatest value at any level of the education system. It is also necessary to develop criteria for what should be included and the level of understanding expected. This is determined by the breakdown of the syllabus into units and topics. The criteria should also incorporate issues such as the national philosophy, and the adequacy of information needed or desirable at a particular level, in line with the goals and objectives set to meet local, national and global socio-economic challenges in the syllabus.

### **1.11.3 Specific Goals and Objectives of Education**

The treatment of goals and objectives of education will vary according to the age of the learner. Early childhood education, for example, is often referred to as preparation for learning. Its goals may include monitoring the child's physical development, providing an enabling environment for emotional development, stimulating the child's mental development, enhancing communication and creative skills, and continuing the socialization process by instilling in the young

desirable habits and manners. Most learning will necessarily be based on group experience and activities that train children to express themselves in a variety of media – oral as well as non-verbal.

#### 1.11.4 Age/Level of the Learners

The age and the level of the learner are major determinants of content. It is important not to bombard young children with concepts and knowledge they cannot understand or do not need. Also critical is the inclusion of mechanisms for monitoring and



#### **Discussion Points and Exercises**

**Engage in a brainstorming session on the best ways of integrating critical economic issues/sectors into the curriculum – syllabus, textbooks and methodologies – with particular reference to specific subjects. For example, the value of agricultural production – food crops and cash crops – can be the subject of language learning where learners are given comprehension passages containing relevant examples in agriculture. It can also be highlighted in mathematical problems/calculations such as:**

**Mrs. Mwakio is a small-scale farmer. Every Thursday, she takes her produce to the market for sale. Last week she sold:**

**A sack of beans for \_\_\_\_\_**

**Two bunches of bananas for \_\_\_\_\_**

**Three dozen eggs at \_\_\_\_\_ per dozen.**

**How much money did she get that day?**

evaluating comprehension and quality assurance. In countries with inadequacy of access, such evaluation would lead to a way of determining who moves on to the next level and what factors should determine transition besides the age of the learner. Examinations and entry tests are usually designed to indicate which learner is ready for the next level.

At the elementary or primary level, the goals would include initiation into more formal learning, mastery of language and other communication skills, and literacy, numeracy and writing skills. Following the main principle in all education that learning should move from the simple to the more difficult, and from the known to the unknown, at this stage also familiar content is introduced such as descriptions of the child's family, school and community. Learning will also begin to take the shape of distinct subjects around which knowledge is classified.

## 1.12 Conclusion

National educational goals and objectives as articulated in this chapter are intertwined with the national educational framework, usually demonstrated within the development policies. Education policies, where they exist, are based on the national development goals and indeed educational objectives in particular. This chapter has put a lot of emphasis on the learners and factors that enhance learning, an understanding of which is important to textbook writers. Critical to these, and as rightly discussed, is the whole field of learning theory and children's development and mental maturation. This concern is discussed in the next chapter.

# Learning Theory as a Guide to Textbook Writers

**W**hat we know about how the brain works and how we learn is of interest in the expected textbook output. Yet despite considerable research and speculation in these areas, this science is still in its infancy. Only in the last decade have we managed to develop the technologies to measure what happens in the brain in the form of various techniques for brain scans. These brain scans have shown that different parts of the brain are responsible for different types of mental functions, strengthening the findings of educational psychologists such as Howard Gardner who had posited that there are different types of intelligences. At the same time, the development of sophisticated computer software has thrown light on how the brain works, particularly through the development of computer systems that mimic learning and problem solving.<sup>1</sup>

Teachers and textbook developers have to rely on what is already known in order to improve the ways of teaching and learning. Educational psychology over the last few decades has brought out a great deal of knowledge about how learning takes

place, even among children. This chapter looks pragmatically at learning theory and how it can be utilized as a guide in textbook writing.

## 2.1 Moving from the Known to the Unknown

When children come to school they already know many things. They have already learnt a language that they are able to speak fluently and they know hundreds if not thousands of words in their mother tongue. They have established strong relationships with their family and community members. They know their neighbourhoods, and most important of all they have developed some of the values and attitudes that characterize their culture. Young children thus come to school having already acquired a large number of skills, concepts, knowledge, values and attitudes.

School, and therefore textbooks, should in general reinforce the learning that has already taken place. It is therefore important to identify what the child already knows. Movement should be from the known to the unknown. Textbooks, especially for the early grades of primary school, need to build on the knowledge and skills that the child brings to school. The textbook

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<sup>1</sup>See Steven Pinker, *How the Mind Works*, Penguin Books, 1997, which advances theories on how the mind functions in line with work on physical brain scans and computer programming.

should link up to and even reflect the culture the learner is familiar with. The textbook should also link up to the earlier experiences and values of the child. This means that it is important for the textbook writer to study the child's culture and to incorporate it into the textbooks.



### **Discussion Points and Exercises**

1. Find out how many words the child already knows in the mother tongue. How would you go about doing this?
2. What are the main interests of a child of six? What skills does the child already have?
3. What are the important relationships for the young child?
4. What type of values and attitudes are common:
  - ◆ In the child's family?
  - ◆ In the community?

## **2.2 Biological Development and Readiness for Learning**

Modern educational theory and practice is strongly influenced by the work of Jean Piaget (1896-1980), whose detailed case studies of children's thought and learning processes led directly to the development of educational processes based on biological maturation, physical experience and social interaction. Piaget, whose initial training was in biology, observed that children's thought processes developed through relatively constant, invariant and successive stages from the simpler to the more complex, linked closely

to biological development. At each of these stages Piaget concluded that the child reached an intellectual equilibrium that had to be disturbed by internal and external stimuli, internal being inborn and external being the intervention of environment, experience and society, before the next stage could be developed. This process of equilibrium, followed by disequilibrium, assimilation, accommodation and re-equilibration, would lead to ever higher levels of mental activity. Thus Piaget's scheme was based on dynamism and transformation from lower to higher levels of mental processes.

As a result of Piaget's work, educationalists today accept the theory of maturation, a readiness for learning that is partially biological and partially experiential. This has influenced classroom practice considerably. Today classroom activity, particularly in the lower grades, is concerned with preparation for learning as much as with learning itself. Words are more closely linked to objects and to actions. There is more understanding that there are chronologically successive models of intelligence, necessitating different classroom methodologies ranging from the more concrete to the more abstract.<sup>2</sup>

Piotr Galperin, an educational researcher, tested Piaget's ideas with an experimental group of six-year-olds. This group did better not only than the control group but also than 10- and 11-year-olds. Galperin's five steps included creating a preliminary conception of the task, through observation and play. Whilst this was not actual knowledge, it created

<sup>2</sup> E. Stone, *An Introduction to Educational Psychology*, Methuen, London, 1966, pp. 134-50, gives a good summary of Piaget's work.

the condition for the discovery of knowledge. Second, it involved mastering the action using objects, because the child cannot learn in a purely theoretical way. Instead, learning originates from material objects and physical actions. Third, the child had to verbalize what was learnt. This verbalization frees the child from the necessity of manipulating external objects. Fourth, the child transfers the action from the verbal to the mental plane, through whispers that become silent thoughts. Finally, the child consolidates the mental action. At this stage the child can anticipate the action. It has been internalized.

Galperin suggests that the formation of mental action proceeds in these definite stages, and if one stage is not adequately mastered, subsequent learning is impaired.<sup>3</sup>

### **Examples**

A teacher will effectively prepare learners by:

- ♦ Giving them specific tasks.
- ♦ Encouraging manipulation of objects in the environment.
- ♦ Encouraging verbalization as manipulation is going on.
- ♦ Giving the child a chance to internalize what has been learnt.
- ♦ Finding out whether the objective is achieved (through follow-up exercises).

### **Exercise**

Prepare a 40-minute geometry lesson on "Volume" following the stages suggested above.

<sup>3</sup> P. Galperin, "An experimental study in the formation of mental actions", in E. Stone, *Readings in Education Psychology, Learning and Teaching*, Open University Set Book, Methuen, London, 1977, pp. 145-53.

## 2.3 Attention Span

As indicated in the Introduction, attention span is an important issue for consideration in textbook writing. People have short attention spans, especially children. The textbook should take this into consideration. Lessons should be broken up into seven to ten minute sections, with opportunities to teach a new skill (or concept, or piece of knowledge), and several opportunities spaced over time to practice these skills in different ways.

### **Discussion Points and Exercises**

- ♦ Prepare a 40-minute lesson teaching one specific skill, but providing for changes in activity every 7-10 minutes.
- ♦ What types of activity are suitable for a young child as compared with a teenager?

In particular, more learning takes place through action or when doing something, rather than through passively listening to a teacher. Thus attention can be increased if the learner is able to learn through doing. Children will learn more if after listening for a few minutes, they are given an opportunity to put what is learnt into practice, by writing about it or by making a drawing, or by talking to a classmate about it.

## 2.4 Multiple Opportunities to Practise a Skill

Knowledge and skills can be temporary or permanent. Before a skill becomes permanently entrenched, it has to

be practised many times, as well as in many different ways. This is an important point for the textbook writer to note. Practice of skills, concepts, knowledge, attitudes and values is critical, and this practice can be spaced over the time available. As pointed out in the Introduction, the textbook writer should consider not only the short term (less than one year), but also the whole education cycle – the whole of primary education, or the whole of secondary education. Many skills take years to develop. Skills are often also hierarchical, and can be developed either in simpler or in more complex ways.

Moving knowledge from the superficial to the “innate” is an important task. An example of this is learning to ride a bicycle or to drive a car. Initially these skills have to be deliberate, and take a lot of concentration and practice, but once the knowledge and skills have been fully internalized, they become second nature, and we can ride a bicycle without thinking about every move we make. The same is true of mental skills: many skills may be difficult to acquire at the beginning, but after they are mastered they become second nature.

It is therefore important to work out which knowledge and skills are absolutely essential to master to the level of second nature, whereas other knowledge and skills may be seen as ephemeral. It is often possible to identify key skills (such as basic reading skills and basic mathematical skills) and to ensure that they are fully mastered. A language teacher may want to concentrate, for example, on only five sentence patterns in Grade 1, ensuring that these sentence patterns are fully internalized. In order to teach and learn these five sentence patterns many different concepts and words may be introduced, particularly

utilizing those concepts and words that are relevant to the interests of the learners at that stage of development. Thus whilst the same five sentence patterns may be relevant tools for a six-year-old, a teenager and a middle-aged learner, these three groups will be interested in very different subjects. A teenager may be more interested in learning the sentence patterns through rap or pop music, whilst an adult may be interested in utilizing the sentence patterns within a professional context.



### **Discussion Points and Exercises**

- ♦ Give ten different ways in which a skill can be practised. How can these be incorporated into the textbook?
- ♦ How would you space practice opportunities over the course of a year?
- ♦ What sort of differences would you envisage in preparing practice materials for a six-year-old as compared with a teenager?

## **2.5 Bloom's Taxonomy**

Bloom's Taxonomy is a critical tool for assessing the level of skills being developed in the curriculum and textbook. Many textbooks develop only low-level skills. For example, pupils may have a good grasp of English for day-to-day communication, but may be totally unable to read simple scientific texts. Pupils may have a great deal of knowledge, but may have developed very few concepts and perhaps cannot utilize the knowledge except for repetition in rote-learning examinations.

Bloom hypothesized that the lowest level was knowledge, followed

by comprehension, then application. Knowledge may consist of being able to repeat what you have heard coherently. Comprehension entails being able to repeat the knowledge in your own words. These are recognized as lower forms of thinking. Thus the learner who can apply knowledge to reality or to new circumstances is utilizing a higher level of cognitive development than one who can merely repeat knowledge coherently.

Analysis is a higher level than application. Analysis involves breaking up a piece of knowledge into its component parts. Synthesis, the ability to create something new from elements of old knowledge, involves creatively using a more in-depth knowledge of the subject. Finally, evaluation, or the ability to judge, was seen as the highest level of cognitive development.<sup>4</sup>



### **Discussion Points and Exercises**

1. Choose a skill you are trying to write about in your subject area (e.g., reading, arithmetic, science), and create lessons to develop learning at the various levels identified by Bloom such as knowledge, comprehension, application, analysis, synthesis and evaluation.
2. Exchange your lessons with your colleagues, and analyse each other's lessons utilizing Bloom's Taxonomy.
3. Develop examples of how to teach the various levels of cognitive skills in your subject area.

<sup>4</sup> For a more detailed understanding of Bloom's Taxonomy consult B. Bloom, ed., *A Taxonomy of Educational Objectives: The Classification of Educational Goals*, Longman, London, 1956.

## **2.6 Limiting or Extending the Child's Mental Development**

School curriculums and textbooks can extend or limit the child's learning. Some schools offer only a narrow range of skills, concepts and knowledge, and sometimes these are also learnt at a very superficial level. Other schools may offer a wider range and may also encourage the development of higher-level mental skills. Some textbooks may offer a lot of verbiage, but develop very few skills.

Soviet psychologist L.S. Vygotsky looked at the role played by society and culture in the formation of the mind. Vygotsky's experiments demonstrated that social relations and social demands play a critical role in the development of various levels of thought. The human mind is not only acted upon by internal and external stimuli as in Piaget's model, but can also actively modify the environment and reality. Human beings can invent and perfect tools that can transform the surrounding environment, and this can be done cumulatively such that history can transform the future. Not surprisingly, Vygotsky called his approach "historical", "cultural" or "instrumental" psychology. In other words, the human mind can be stretched or extended by the demands of human culture through education. An undemanding culture and education will fail to develop the human mind to its highest levels. Vygotsky believed that:

The tasks with which society faces the youth as he enters the cultural, professional and civic world of adults undoubtedly are an important fact in the emergence of conceptual thinking. If the environment presents no such tasks to the adolescent, makes no new demands

on him, and does not stimulate his intellect by providing the sequence of new goals, his thinking fails to reach the highest stages, or reaches them with great delay.<sup>5</sup>

He added:

With assistance, every child can do more than he can by himself – even though only within the limits set by the state of his development.... Therefore the only good kind of instruction is that which marches ahead of development and leads to it; it must be aimed not so much at the ripe as at the ripening function.<sup>6</sup>

Vygotsky's experiments with children showed that there is a hierarchy of mental development ranging from the primitive or natural stage, corresponding to pre-intellectual speech and pre-verbal thought as a baby, to a pre-conceptual stage in children, which he called complexes. Complexes resemble real concepts or real thought, but lack logic and depth. Whilst Vygotsky to some extent confirms Piaget's findings of the need to go from the concrete to the verbal and finally to abstract conceptualization, he goes further to show that language can be used as a short cut to abstract concepts without the necessity of going through the concrete, physical and experiential stages. Language enables the child "...to form concepts, ...to draw conclusions from assumptions, to master logical connections, to cognize (*sic*) laws, far surpassing the boundaries of direct, personal experience".<sup>7</sup>

Vygotsky's work is relevant to quality in primary education in so far

<sup>5</sup> L.S. Vygotsky, *Thought and Language*, MIT Press, Cambridge, Mass., 1977, pp. 58-9.

<sup>6</sup> *Ibid*, pp. 103-4.

<sup>7</sup> A.R. Luria, quoted in E. Stone, *An Introduction to Educational Psychology*, Methuen, London, 1966, p. 122.

as it emphasizes that the demands made by society generally through its education system will affect the child's level of conceptual attainment. Members of societies that make a lower demand, such as the illiterate peasant society studied by Vygotsky's colleague, A.R. Luria, were unable to make theoretical abstractions, whereas those who belonged to an intermediate group of people who had taken some courses or worked on a collective farm were able to categorize and abstract.<sup>8</sup>

Another aspect of Vygotsky's work, as he explained in "Play and Its Role in the Mental Development of the Child", is his perception of play as the "leading edge" of the child's psychological development. Play affords the child a "zone of proximal development" through which both these new motivations and a new kind of attitude towards reality are created. The critical point is that in play children create an imaginary situation to guide their actions – a world of meaning is created that then has motivational force.<sup>9</sup>

This emphasis on play is important. Play allows children to come to grips with reality and is also part of their introduction into the socio-cultural structures and values of their society. As such the common trend in modern education is to see play as a fundamental and inextricable part of the learning process. Play to children is real work, as it allows them to remake reality as well as to internalize the social and psychological controls and parameters imposed by society. The concept of play as an essential and

<sup>8</sup> A.R. Luria, *Cognitive Development, Its Cultural and Social Foundations*, Harvard University Press, Cambridge, Mass., 1976, pp. 77-8.

<sup>9</sup> From L.S. Vygotsky, "Play and its Role in the Mental Development of the Child", quoted in J.V. Wertsch, ed., *Culture, Communication and Cognition: Vygotskian Perspectives*, Cambridge University Press, 1986.

integral method children use to understand and re-create the reality around them has profoundly affected teaching and learning methodology and processes. Learning through various forms of play is today an accepted educational methodology.

Vygotsky's stress on the critical importance of human intervention, and on the accumulation of these interactions in language, naturally led to his conception of language as the "storehouse of human knowledge". Special cultural instruments like writing and arithmetic enormously expanded humans' powers, making the wisdom of the past analysable in the present and perfectible in the future.<sup>10</sup>

Language, in literacy, is therefore critical to mental development. Thought itself cannot exist without the help of language. Language organizes behaviour and creates culture. Vygotsky identified language as a key to intellectual development.

## 2.7 Types of Intelligence

Some people are better at mathematics, others at sports or music, and others still at languages. Howard Gardner, in his book *Frame of Mind: The Theory of Multiple Intelligences*,<sup>11</sup> looks carefully at seven different forms of intelligence. These are:

- ◆ Linguistic intelligence
- ◆ Musical intelligence
- ◆ Logical-mathematical intelligence
- ◆ Spatial intelligence
- ◆ Bodily-kinaesthetic intelligence
- ◆ Outer directed personal intelligence
- ◆ Inner directed personal intelligence

<sup>10</sup> A.R. Luria, *The Making of Mind*, Harvard University Press, Cambridge, Mass., 1979, p. 44.

<sup>11</sup> Howard Gardner, *Frame of Mind: the Theory of Multiple Intelligences*, Basic Books, Harper Collins, New York, 1993.



### Discussion Points and Exercises

Give examples of lower level demands as compared with higher level demands your society makes on children.

1. Can you give such examples for different disciplines such as language and mathematics?
2. How would you integrate play into a language lesson for seven-year-olds? A science lesson for ten-year-olds?
3. Is play important only for young children? Is there a role for play in adult education or the teaching of teenagers? How would you integrate play into a science lesson at secondary school level?

#### 2.7.1 Linguistic Intelligence

Language is one of the most important tools used by human beings. Gardner has identified four aspects of linguistic intelligence. The first one is the ability "to use language to convince other individuals of a course of action". The second is the capacity to use language to help you remember information, which can vary widely. Language can also be used for explanation. Much of teaching and learning occurs through language in either spoken or written form. Language remains one of the most important tools for conveying meaning, whether this is about feelings or about scientific discoveries and inventions. Language can be used for analysis or for creation.<sup>12</sup>

<sup>12</sup> Ibid, pp. 77-8, 96.

### 2.7.2 *Musical Intelligence*

There are some children who are naturally talented in music, with a good ear for tunes and an innate sense of rhythm. Music is often linked to emotions, and to affective development, i.e., to the development of the feelings and values of people. Gardner rightly regarded this form of intelligence as an important area for education.

### 2.7.3 *Logical-Mathematical Intelligence*

Gardner saw this form of thought as linked to

a confrontation with the world of objects. For it is in confronting objects, in ordering and reordering them, and in assessing their quantity, that the young child gains his or her initial and most fundamental knowledge about the logical-mathematical realm. The individual becomes more able to appreciate the actions that one can perform upon objects, the relations that are obtained among those actions, the statements (or propositions) that one can make about actual or potential actions, and the relationships among those statements (going from the concrete to the abstract).<sup>13</sup>

### 2.7.4 *Spatial Intelligence*

Spatial intelligence is linked to the ability "to perceive the visual world accurately, to perform transformation and modifications upon one's initial perceptions, and to be able to recreate aspects of one's visual experience, even in the absence of relevant physical stimuli. One can be asked to produce forms or simply to manipulate those that have been provided." In other words, spatial intelligence is the ability to perceive and to create visually and

<sup>13</sup> Ibid, p. 129.

artistically. It includes areas such as geometry and architecture. Spatial intelligence may be fundamental to engineering and mechanics, areas of knowledge that may be quite different from linguistic skills.

### *Discussion Point*

From an educational point of view it is possible to use spatial intelligence to strengthen learning. A picture, diagram or graph may be much easier to understand than a written description. Even the way the explanations and exercises are organized on a page may help or hinder meaning.

### 2.7.5 *Bodily-Kinaesthetic Intelligence*

The linkages between the body and mind are fundamental. One of the best known adages is that of "A healthy mind in a healthy body". Sports, for example, have been seen for centuries as a means of building character, leadership and unity. Bodily-kinaesthetic intelligence is the development of physical skills, linked not only to sports, but also to dance and drama. The body can express the mind, and conversely the mind can control the body. Bodily-kinaesthetic skills can be developed within the classroom and school environment, for example using dance and music to teach mathematics or language.

### 2.7.6 *Personal Intelligence*

Personal intelligence is described as understanding oneself and understanding others. Understanding oneself, such as understanding one's own feelings and motives, requires a long period of development. Personal and character developments are integral parts of education, including

the development of personal and societal values. People's behaviours are linked to their understanding of themselves, of their own emotions and personal needs. The other aspect of personal intelligences is



### **Discussion Points and Exercises**

1. Would you accept the seven types of intelligence identified by Gardner? Discuss the impact of trying to develop different forms of intelligence in textbook writing.
2. Try combining different forms of intelligence within the same lesson, e.g., developing personal values linked to mathematics or science, or developing spatial intelligence when teaching science, or using linguistic intelligence to teach values.
3. Can music and dance be used to teach academic subjects such as language and mathematics? Work out a lesson that combines these different types of intelligence.

the understanding of other people, including their feelings, their motivations and their intentions. Understanding human nature is one of the most important as well as most difficult set of skills to learn: it begins from early childhood, and continues throughout life.

## **2.8 Conclusion**

Subject goals are based on wider educational objectives. One educational goal shared by African nations is the preservation of cultural heritage, no matter how varied this may be for any given nation. As such, cultural reflection is an important aspect of textbook writing. It is in recognition of this aspect that the next chapter is devoted to culture, and especially the importance of its consideration in formulating curriculums and textbooks.

# Cultural Reflection and Textbook Writing

**C**ulture can be identified as the basic worldview of a society. It encompasses the values of the society. For example each society defines its important and valid aims in life. It also defines the types of relationships, with their rights and duties, that are acceptable within that society.

The worldview may be incorporated into a religion (such as Buddhism, Christianity, Islam, etc.) or into an ideology (such as capitalism, liberalism, socialism, etc.). Even when it is not officially incorporated into a religion or ideology, culture exists in the accepted rituals and relationships within the society. It involves the way people behave, with some forms of behaviour being acceptable in some societies, but not others.

Culture also includes the institutions and legal frameworks within a society, such as the marriage system, the property ownership system and so on. These institutions provide the framework for human interaction within the society. The school is an important institution for inducting learners into the world in which they will live. The school is a

Culture involves the basic world view that determines how people behave in a particular society.

microcosm of society, as pupils learn how they are supposed to behave in the world as a whole.

Values differ from society to society, although there are some core values, shared by all people. These core values are encapsulated in codes such as the Ten Commandments and the instruments of human rights such as the United Nations Declaration on Human Rights.

## 3.1 Factors Influencing Culture

Culture is dynamic. In a rapidly evolving society children's culture may be very different from that of the parents. Culture has changed dramatically over the past century all over the world, through the impact of education, wars, migration – as well as new technologies.

The two World Wars not only altered the balance of power, they changed cultures in almost every country. The powerful influence of information and communications technologies, such as television and computers, has changed the world, making it into a global village. It is also possible to influence culture deliberately, through social engineering, advertisements and social marketing, legislation, or other means.

The school has become one of the most important systems of socialization, and therefore of cultural influence. Within the school system, the textbook is one of the most powerful tools for social acculturation.

Cultural values enter into the curriculum, either consciously or in a hidden way. The "hidden" curriculum may not be clearly enunciated but it is taught nevertheless. For example, the time-tabling used in a school may familiarize children with the world of work by making them accustomed to time keeping and continuous concentration. The hidden curriculum may also induct them into the prevailing social hierarchy, such as the class system in Britain or the caste system in India. It may include gender bias even though everyone may vehemently deny there is any gender bias within the school system! This hidden gender bias may be subtly or not so subtly inculcated in the classroom behaviour expected of boys and girls.



### **Discussion Points and Exercises**

1. Discuss what you would consider to be some of the significant cultures within your country.
2. Are young people's cultures significantly different from those of their parents? Of their grandparents?
3. Are there contradictory as well as complementary cultures in your country?
4. What are the overt curriculums in your school? What hidden curriculum can you detect in your school?
5. Examine an existing textbook. What are the values inculcated by the textbook? Is there any example of a hidden curriculum?

## **3.2 Incorporating Cultural Values into the Textbook**

Given the critical importance of culture, it is important to take this aspect into consideration when preparing a textbook. Even a mathematics or science textbook may contain a great deal of cultural attitudes and values, as the following examples illustrate.

- ♦ One mathematics book teaching about "sets" asked the teacher to choose one boy, and then asked the boy to choose four girls. Then a second boy was chosen, and he was asked to choose four girls. Thus two "sets" each consisting of one boy and four girls were formed! Thus the mathematics lesson provided a vivid display of gender bias as well as of social values.
- ♦ Another example of the hidden curriculum is when men and boys in textbooks are pictured in active roles such as working and making decisions, whereas women and girls are pictured in passive roles, such as listening to the radio and lounging around. Doctors and pilots may be depicted as men, whereas nurses and secretaries are nearly always depicted as women.

## **3.3 Incorporating a Time Perspective**

An area that concerns the textbook writer is how much the textbook should concentrate on the past, such as the past culture and history, and how much it should look ahead, such as the future that the children will face as grownups. Of course the past is important in terms of pride in one's cultural heritage and



### **Discussion Points and Exercises**

An important aspect of textbook development is to work out and discuss with colleagues the attitudes and values that you would like to incorporate into the textbook. Examples can include:

1. **Respect for authority:** Through obedience or development of individual opinions and individual decision making powers. How far do present textbooks emphasize individual decision making, say, in science or language teaching?
2. **Faith in one religion or respect for different religions:** Can both be combined, say, in the ethics curriculum or the language learning curriculum?
3. **Hierarchy or equality and equity:** Try doing a mathematics or technical subject lesson that emphasizes equity.
4. **Population control as a social responsibility:** How would population education enter into the textbook? For example, how many children are depicted in families in your textbooks? Is there a population policy and how is it reflected in the overt curriculum? In the hidden curriculum? Try doing a mathematics lesson based on your country's population policy.
5. **HIV/AIDS:** Can learning about HIV/AIDS be incorporated into different subject curriculums?
6. **Gender issues:** How would you incorporate gender issues into the different subject textbooks?

learning from both the achievements and the mistakes of history.

On the other hand, it is important to introduce the challenges and possibilities the children will face as adults, such as possible work



### **Discussion Points and Exercises**

What are the generally agreed aims of your society, e.g., democracy, human rights, family planning, health education, national unity, national pride, a scientific approach to problem solving, agriculture as the basis for development, urban industrialization as the basis for development, etc. Do some research to find out possible approaches, and hold a panel discussion on how these points should be dealt with in your book.

experiences or exercises in social responsibility through elections and parliament, as well as other realities of modern life. Once again these points would apply to almost any subject. Teaching of science can be related to the science utilized in the community or in the country's industries. Teaching of mathematics could be linked to elections. Teaching of language could be linked to future work and family responsibilities.

## **3.4 Incorporating National Issues into the Textbook**

One of the ways of deciding what to include in addition to the published curriculum is to examine state plans for different areas. This could provide a pointer to areas of importance.

One of the pitfalls to avoid is the inclusion of current political figures in the textbook. Whilst this may be a quick way of winning favour with the powers of the time, the popularity is likely to be short term. Many textbooks have been thrown away just because they incorporated political figures who later lost power. A rule of thumb is not to include anyone who is still alive in the textbook.

### 3.5 Incorporating International Issues into the Textbook

A broad international consensus has been built around certain issues, and large numbers of countries have signed pledges to support and implement these concepts or frameworks. These include the United Nations Declaration on Human Rights, the pledge of Education for All, population education, environmental protection, the fight against HIV/AIDS



#### **Discussion Points and Exercises**

1. What aspects of the Declaration on Human Rights can be incorporated into a language textbook? A mathematics textbook?
2. How would you include environmental protection in a science textbook? A mathematics textbook? A language textbook?
3. How can population education be included in the science textbook? The mathematics textbook? The language textbook?
4. How can the fight against HIV/AIDS be incorporated into the science textbook? The mathematics textbook? The ethics textbook?

and others. Textbook writers need to be aware of these and incorporate them into relevant texts.

### 3.6 Incorporating Values into the Textbook

Since values must always enter into every textbook, it is important for the writers to think through the type of values they would like to incorporate into the textbook and discuss this with colleagues very thoroughly. Examples of values could include counting guns instead of counting chickens in an early grade mathematics textbook. Pictures of soldiers with guns may be a way of glorifying war, something commonly found in literature of liberation movements.

### 3.7 Language Use

Language as a medium of instruction is defined within a country's education policies. It is generally accepted that children can handle two languages quite well. Generally these would be the child's mother tongue and an international language. The teacher and the textbook writer should consider how the two languages can be used to ensure optimal learning.

Since children come to school already knowing their mother tongue, it is generally accepted that initial literacy should be in the language the child already knows. This also is important in terms of the basic educational principle of going from the known to the unknown, from the familiar to the new. By utilizing the language the child already knows, it is possible to develop basic literacy often within a few months. Some children become literate within a few weeks.

Children can be introduced to the second language aurally and orally



### **Discussion Points and Exercises**

1. Values may be introduced through examples given for exercises, for example counting the number of people owning houses compared with counting the number of people with malaria may provide the same skills development, but may introduce very different concepts.

The same can be true of the sentence pattern examples: In introducing, say, 5–10 sentence patterns a year, it is possible to utilize, and to encourage students to create, many different examples for practice. Create a mathematics lesson or a language lesson teaching one skill, but introducing different concepts and values.

2. Utilizing the interests of the learners to enhance learning is a well known teaching tactic. What values would be suitable for a young child of 6 as compared with a teenager of 16?
3. What traditional values are common in your society and how would you incorporate some of them into different subjects like mathematics, science, language?
4. What new values are entering your society and how would you incorporate them into the different subjects like mathematics, science, language?

– that is, they will hear it and speak it, but do not need to read and write it until they have mastered literacy in their mother tongue. Literacy in the second language should be introduced later, usually at least three months later. If the same script is utilized for both languages this can be a simpler and more complementary exercise. Where the scripts are different, there may be difficulties.

Sometimes it is useful to teach important concepts in both languages. For example secondary science can be taught in an international language, but supplementary reading could be made available in the mother tongue. This is a useful strategy because some children are perfectly capable of understanding the principles and concepts, but are hampered by their poor command of the international language.

### **3.8 Conclusion**

Establishing cultural links with the world in which the learner lives and operates helps to make learning both easier and more relevant. Culture comes into every subject. When the cultural issues are not examined carefully, the hidden curriculum can negate what is required in the overt curriculum. Learners may become averse to a subject because it contradicts their culture, or because it appears alien. Negative self-images may be formed – or reinforced – if the textbook provides negative role models. For example, some textbooks extol and romanticize life overseas, whilst denigrating life in their own country. Racism and sexism may creep into the hidden curriculum. The textbook writer should be aware of these challenges.

# Teaching/ Learning Methodologies

**A** textbook should include a number of different methodologies for teachers to choose from. Some teaching methodologies may be specific to particular teachers and subjects being taught. However, achievement of the set objectives and the level of the learners are important factors in selecting the methodologies. The choice of teaching/learning methods greatly influences the learning process. Methods should be learner centred, with emphasis on what has been learnt rather than what has been taught.

## ?! Teaching/Learning Methods

- ♦ Play especially for young children
- ♦ Lectures
- ♦ Experiments and demonstrations
- ♦ Group discussions and debates
- ♦ Site visits
- ♦ Nature walks
- ♦ Question and answer sessions
- ♦ Dialogue
- ♦ Quizzes and puzzles
- ♦ Projects

## 4.1 Teacher Centred Methods

Teacher centred learning means the teacher dominates, is the source of knowledge, and tells pupils what to learn and how to learn it. The amount

of teacher dominated teaching varies from teacher to teacher. Probably half of school time is presently devoted to teacher centred learning. Teacher centred methods of teaching/learning include lectures, demonstrations and modelling. They should be used sparingly because the child is inactive while the teacher is in motion – this can lead to boredom and inattention.

### 4.1.1 Lectures

Lectures form an essential mode of teaching for all levels of schooling, as they are often the fastest way of providing information. This method can be improved if:

- ♦ In preparing lessons the teacher keeps in mind the seven-minute attention span of most learners.
- ♦ There is a change of activity periodically, for example allowing pupils to repeat what they have understood, to write down what they have understood, to ask questions or to apply what the teacher has said to real life situations.

### 4.1.2 Demonstrations/ Experiments

In this form of teacher dominated teaching, the teacher undertakes a demonstration or experiment. It is easily organized, as only the teacher needs to do the experiment, and it can be highly effective.



### Discussion Points and Exercises

1. Examine a primary school textbook. Determine the percentage that is teacher centred learning and that which is pupil centred.
2. Prepare a textbook lesson that involves the teacher explaining one specific skill for seven minutes. Add seven minutes of activity in which the pupils work in pairs applying what they have learnt from the teacher. Add another ten-minute activity in which the pupils write down in their own words what they have learnt. Then add another activity where the pupils draw or make a graph where this same point is illustrated. Finally, get the pupils to either judge their own work or judge each other's work. This will require an assessment framework, which the whole class can agree upon beforehand.
3. Given that much teaching and learning will remain teacher centred, prepare a lesson where the teacher's presentation can be lived by:
  - ♦ An experiment demonstrated by the teacher
  - ♦ An audio-visual presentation
  - ♦ Maps, diagrams, graphs

#### 4.1.3 Modelling a Skill

Modelling involves demonstrating how something is done step by step. It means the teacher actually performs the skill rather than only speaking about it. For example, pupils can form sentences along a model given by the teacher. Pupils often find it simpler to follow a model than to follow spoken or written instructions. Modelling is learning by seeing and doing, rather than only by listening and obeying.

## 4.2 Pupil Centred Methods

Pupil centred teaching/learning methodologies are numerous. They range from group work to nature walks, structured play to story telling. The following sections describe several such methods.

### 4.2.1 Working in Groups

This methodology is particularly important in a multi-grade situation where two to four grades may be working in the same classroom. The teacher may be working with one group while the other groups work on their own. If group work is to function successfully, the teacher must be very clear about the work the children are to do for the period, the procedures to be followed, the outcomes expected and the agreed ways to measure the learning. Group work thus requires careful preparation by the teacher, with adequate learning materials made ready beforehand. In preparation for the multi-grade classroom, many of the activities incorporated into the textbooks and teachers' manuals would entail group work.

Groups usually consist of five to eight pupils, which is a small enough number to allow everyone to participate fully. Larger groups may leave some children as passive observers, an undesirable outcome. However, much depends on how the group work is organized. Group work should develop into a routine that takes place every day in an orderly manner. Different forms of group work include:

- ♦ **Ability grouping**, where children of the same level of learning are placed together, for example advanced learners work together with other advanced learners, and slow learners work together with other slow learners. This is a useful way of allowing bright

students to move ahead as quickly as possible, whilst slow learners are not discouraged by having to compete with very advanced pupils. The teacher could spend more time with the slow learners. Depending on what is being learnt, however, ability grouping may only be useful for certain activities. Limiting ability grouping to just one or two periods a week is usually sufficient to allow the high flyers to achieve their full potential.

- ♦ **Mixed ability grouping**, the most common, as it allows the better pupils to help the weaker pupils to learn as a group. The different groups can compete against each other to see which group is best. This is generally more socially acceptable than individual competition. In a multi-grade situation, an older and more advanced pupil can be placed in charge of an activity, e.g., reading or mathematics for a period.
- ♦ **Interest grouping**, which implies dividing the children according to an expressed interest and is particularly useful for project work. Children interested in cars, for example, can do a project on cars, while those interested in pets do a project on pets. This type of grouping can be very useful in a multi-grade situation, especially where there is a shortage of books and other educational materials. Thus one group could be doing mathematics as another is doing reading and another science.

#### 4.2.2 *Play as a Methodology*

Play is the cutting edge of the child's psychological development. As discussed earlier, play is a normal activity for all children, and is a way through which they learn to cope

with reality. It is a most useful way of learning. Play is to a child what work is to an adult, and children may learn more from play than by merely listening to the teacher all the time.

Play helps children to internalize social and psychological controls and parameters imposed by society. For example, through play learners learn sharing as all members of a team need to be given a chance to play or to use equipment. Conflicts will arise and they will need to resolve them amicably. Leadership is also built, as the choice and acceptance of leaders in each game and activity is desirable.

Examples of playful activities and games that can be used include:

- ♦ Card games
- ♦ Crosswords
- ♦ Guessing games
- ♦ Number games
- ♦ Playing with sand
- ♦ Skipping games
- ♦ Spelling games
- ♦ Spot the words
- ♦ Story telling
- ♦ Water play

Play materials should be included in the classroom, and set periods allowed for this play. These should generally include aspects of community, family and adult life. Children like role play, for example playing as mother, father, farmer, doctor, teacher. Play also provides the opportunity to practise what has been introduced. Thus an addition and subtraction lesson can be put into practice through playing shopping where pupils buy articles from a shop or market. Language learning can be

The emphasis is on what is learnt, rather than on what is taught.

### **Activity**

Which game would be the most appropriate for teaching young learners the multiplication tables?

put into practice in play, e.g., greetings and conversation.

#### **4.2.3 Pupils Doing Their Own Research**

This requires access to a library and other resource materials. The multi-grade project could aim at developing a small and low-cost class library, which would allow pupils to find out and utilize information on their own. Another important resource is the community itself. Interview techniques through which pupils can collect information from their own families and communities are important aspects of this methodology.

#### **4.2.4 Experiments and Demonstrations**

These involve practical activities through which a variety of lessons in a subject can be learnt, using everyday objects or specified equipment. They are ideal for learning, since students observe and participate actively.

#### **4.2.5 Story Telling/Mime/Role Play**

Story telling is very effective in teaching especially when it is dramatized by the pupils. Puppets and imitations may be used to make it even more interesting. Telling stories and other dramatizations:

- ♦ Help boost children's imagination.
- ♦ Help learners explore their own ideas, attitudes and feelings.
- ♦ Help them develop familiar topics relating to their lives.

### **Example**

Pupils can be given instructions to demonstrate the various forms of water: solid, liquid and gas.

Experiments and demonstrations succeed where:

- ♦ There is enough information concerning the procedure of the experiments. For example: In this experiment you may start with a block of ice and give details of how this will be turned to a liquid and later to a gas.
- ♦ The resources to be used in a particular experiment are stated exhaustively. For example: In this experiment you will need a source of heat, the block of ice and a container for heating.
- ♦ Advice on how some of the material can be improvised if not available is provided. For example: In this experiment, a candle can be used as a source of heat.

Note: If the school has no access to ice, the experiment may be limited to only two forms of water, but can move from liquid to gas and back to liquid.

- ♦ Enhance creativity.
- ♦ Develop learners' communication skills.

Mime also promotes the skills of observation and interpretation.

### **Activity**

Select a topic that can best be taught through story telling, giving the details of the props needed.

#### 4.2.6 Group Discussions

Group discussions help learners to:

- ♦ Learn to take turns.
- ♦ Share books and other facilities being used, such as paint and tools.
- ♦ Learn and practise cooperation.
- ♦ Learn to consider the interests of others, not just their own.
- ♦ Listen to other people's opinions.

Competition in teams enables learners to support one another in an endeavour to ensure that their team wins.



#### Activity

Let the learners discuss in groups:  
"How does the spread of HIV/AIDS affect a country?"

"What is the impact of modern media on traditional culture?"

#### 4.2.7 Nature Walks/Study Visits/ Field Trips

Getting outside the classroom not only breaks the monotony of learning in class, but can enhance learning by enabling the learner to come into contact with real objects and situations. Concepts learnt in class are grasped and understood faster in this way. Relevant sites that can be visited, depending on the age of the learners and the objective of the learning, include: the school compound, the neighbouring community, game parks, animal orphanages, zoos, museums, rehabilitation centres, streets, children's homes, factories, farms, railway yards, among others! Good preparation is needed, especially if parents are to be involved in payment of some fees. Consultation with school authorities should be put into consideration too. Proper supervision and safe transportation are other important factors.

#### 4.2.8 Use of Resource Persons

These are people who are experts in certain areas. They can be members of staff in the school, parents, or people outside the school such as doctors, pilots or social workers. The resource persons should be selectively chosen to ensure that the topic of discussion is well tackled. They should be briefed on the general needs of the learners. The learners, too, must be prepared to ask relevant questions as they interact with the resource persons.

#### 4.2.9 Questions and Answers

This is a very effective way of teaching because it enhances pupil involvement in the learning process. It can be used at different times in the course of the lesson:

- ♦ At the beginning of a lesson to review the previous lesson or to introduce a new topic.
- ♦ In the course of the lesson to monitor understanding of a concept.
- ♦ At the end of a lesson to find out whether the stated objectives have been achieved.

Through this technique, the teacher is able to identify the needs of the pupils and therefore plan for them effectively.

### 4.3 Considerations in the Selection of Teaching/ Learning Methods

A writer must have adequate information about the general needs of the reader and the age/level for which the textbook is intended. Other considerations are the type of teaching/learning activities that might be appropriate and the type of resources that are needed – and likely to be available.



### **Using Questions Effectively**

An important issue is the type of questions that are asked by the teacher. Do they require parrot-like repetition, or do they develop higher level thinking?

- ◆ Questions can vary from the simplest form of allowing pupils to repeat what has been learnt in their own words, to applying what has been learnt to new situations or creating new knowledge based on previous learning.
- ◆ The teacher's skill in formulating questions leads to whether the pupils' learning is lower level (e.g., parrot learning) or higher level (e.g., ability to make deductions from given information).
- ◆ The teacher, using Bloom's Taxonomy as a framework to test whether the questions will elicit lower or higher levels of cognitive development, utilizes different types of questions.
- ◆ A teacher can ensure that all pupils have an equal opportunity to answer questions during a lesson by giving them one minute to write down their answers before the answers are given orally.
- ◆ Another way would be to divide the class into groups of five to eight pupils per group, and get each group to work on a problem. This could be the same problem across the groups, thus providing an element of competition between groups, or different problems for different groups, thus enabling more to be covered.

#### **4.3.1 Age Group**

A book for children aged 12-14 years will have a different perspective from one for younger or older children.

The writer needs to bear in mind the emotional, psychological, physical and mental changes occurring in children's lives at different ages, in an endeavour to address them. This background is important as it influences:

- ◆ The use of language.
- ◆ The concepts and skills being taught.
- ◆ Illustrations being used.
- ◆ Examples and exercises.
- ◆ The length of the book and of each chapter, and the degree of simplicity/complexity of words and sentences.
- ◆ The explanation of words and statements used.
- ◆ Assessment tests and other modes of evaluation.
- ◆ Methodologies recommended for use.

#### **4.3.2 Level of the Learners**

A textbook writer should bear in mind that some of the textbook users might be learners with special needs and therefore look for ways of accommodating them. For example, some exercises and assessments should cater for "slow" learners. Examples should be graded from very simple and straightforward to more complex.

The textbook writer will need to come up with effective teaching/learning activities, which aim at achieving the stated objectives, based on specific topics in a subject. The writer also needs to ensure that the national goals are being addressed through the activities.

#### **4.3.3 Teaching/Learning Activities**

A teachers' guide and the pupils' textbook should include a variation of teaching/learning activities, specifically



### **Discussion Point**

Obtain a copy of your country's syllabus and find out how the goals and objectives are stated. Write a lesson on the topic "Environment Conservation". Include teaching/learning activities that aim at achieving national goals and objectives of education as stated in the syllabus.

selected to help the learners grasp the concepts being taught, acquire the knowledge and apply it in day-to-day activities. These too must be carefully tailored to enable learners to achieve the lesson objectives and the national goals. Learning activities should:

- ♦ Adequately enhance the understanding of the concepts.
- ♦ Be tailored to the level of the learner.
- ♦ Be challenging enough to develop the human mind.
- ♦ Stimulate the child's intellect.
- ♦ Enhance discovery and curiosity.
- ♦ Provide sustained motivation for learners to find out for themselves.
- ♦ Involve a lot of action.
- ♦ Encourage the learners to work without necessarily being supervised.
- ♦ Have clear instructions to avoid misunderstanding.

There is a wide selection of activities that can be incorporated into the textbooks. They include:

- ♦ Chanting
- ♦ Demonstration
- ♦ Dramatization
- ♦ Drawing
- ♦ Exposition
- ♦ Field trips
- ♦ Group discussions
- ♦ Nature walks
- ♦ Observation

- ♦ Practical work
- ♦ Projects
- ♦ Question and answer
- ♦ Reading
- ♦ Recitation
- ♦ Role play
- ♦ Singing
- ♦ Story telling
- ♦ Visits

### **4.3.4 Teaching/Learning Resources**

Teaching and learning resources are things that are used to help a teacher achieve learning objectives. They are crucial to the learning process because they help the learners to use more than one sense (sight, smell, hearing, taste, touch), thus increasing understanding. They also enhance retention, interest, curiosity and attention and make concepts and ideas more real.

The teachers' guides for a textbook need to include suggestions for several appropriate resources depending on specific topics. This enables the teachers to be well prepared for the lessons. Some of the resources can be included in the pupil's text, as well, such as diagrams, graphs, tables and pictures.

An author may select teaching/learning resources from many categories, including:

- ♦ Living things – plants and animals
- ♦ Non-living things such as:
  - Metals – batteries, wires, nails and tins
  - Non metals – wood, charcoal, plastics, rubber, paper, glass, fibres, soap, bulbs, candles
  - Liquids – water, ink, milk, kerosene

Other possibilities are listed in the box below – which is not likely to be exclusive!



### **Selected Teaching/Learning Resources**

- ◆ Atlases
- ◆ Audio tapes
- ◆ Charts
- ◆ Cutting tools
- ◆ Drawing tools
- ◆ Encyclopaedias
- ◆ Environment
- ◆ Films
- ◆ Flash cards
- ◆ Games equipment
- ◆ Glue/paste
- ◆ Guest speakers
- ◆ Historical sites
- ◆ Hymn books
- ◆ Libraries
- ◆ Maps
- ◆ Models
- ◆ Museum
- ◆ Musical instruments
- ◆ Newspaper cuttings
- ◆ Photographs
- ◆ Pictures
- ◆ Posters
- ◆ Radio
- ◆ Recorded materials
- ◆ Regalia
- ◆ Relevant magazines
- ◆ Rulers, metre sticks
- ◆ Teacher advisory centres
- ◆ Test books
- ◆ Toys
- ◆ Video tapes
- ◆ Workers' tools

## **4.4 Conclusion**

Conventional wisdom holds that there are as many teaching/learning methodologies as there are teachers and learners. This chapter has highlighted some of the commonly used methodologies in the teaching/learning process. Specific, practical methods depend on the circumstances of the teacher, the learners and the learning environment, as well as the availability of teaching/learning resources. Even in constrained circumstances each subject may have its own specific methodologies of teaching/learning.

As a textbook writer, it is important to have knowledge about different methodologies so that you can effectively develop the skills and concepts – and the intelligence of the learners – through their use. The choice of a specific methodology will be determined by the topic at hand. For example:

- ◆ A topic about plants and animals or the environment would best be learnt by suggesting the need to visit a farm, game reserve or a national park.

- ◆ A topic on HIV/AIDS can most effectively be learnt through research, where learners are encouraged to read magazines, newspapers and books, watch documentaries on television, and inquire from resource persons in the community to get as much information as possible on the specified topic.
- ◆ A book for young learners should involve various suggestions of songs, games, mimes, drawings, paintings and recitations, which are very exciting ways of learning for them.

In general, teacher centred methods of teaching should be kept to a minimum, mainly in introducing new topics or activities. The main methodologies and those that are most effective are the learner centred.

Integrating elements of different subject matters is another important approach to learning. An integrated curriculum requires a combination of subjects for holistic learning. This is discussed in the next chapter, although the methodologies highlighted above apply across the board.

# Textbooks and the Integrated Curriculum

One of the frequently desired, as well as fashionable, teaching methodologies is that of the integrated curriculum, for example combining mathematics with social studies, or science with language, or building construction with ethics. It can be very difficult to integrate subjects, however, because teachers, who are among the most important players in curriculum reform and interpretation, have generally been trained to teach subjects separately, and may become quite agitated and disorientated if the subject boundaries are not respected.

A teacher of physics may not feel qualified to teach English, or a teacher of accounts may not feel comfortable in handling ethics. Teachers feel they have been trained to teach a particular subject, and they are good at teaching that subject, but they do not feel confident teaching an integrated curriculum. But a good example of how an integrated curriculum can work is the issue of HIV/AIDS, which may cross many subject boundaries such as values, science, environment, sociology, health and so on through individual and group behaviour, peer pressure, etc.

Teachers may express discomfort at dealing with such a subject because they do not know enough about it. This is where the textbook writer can bring in information across the spectrum.

Despite the reservations of many teachers, an integrated approach to teaching and learning can be an enriching experience both for the teacher and for the pupils. Rather than trying to integrate every subject, it may be best to begin by introducing some integrated curriculum for two or three hours each week, whilst maintaining the separate subject format most of the time. The textbook writer must keep in mind that it is the teacher who implements the curriculum, and so the textbook must be teacher friendly.

## 5.1 Approaches to Curriculum Integration

Among the approaches the textbook can present to support an integrated curriculum are projects, problem solving and team teaching methodologies. These are discussed briefly below.

### 5.1.1 *The Project Method*

The project is done either individually or by a small group. It centres on a topic that is of interest to the pupils and by its nature is often multi-disciplinary. A topic could be dealt with in a number of different ways, such as historically, statistically, scientifically. Pupils can collect most of the information by themselves,

organizing their own research and presentations.

Projects enable topics to be linked in a common theme. They stimulate interest and encourage learning across several curriculum subjects. Topics such as air, water, shapes, clothes, plants, animals, homes and transport are effectively taught through projects.

This can be demonstrated with water, for example, in the following ways:

- ♦ In language, vocabulary such as stream, flow, splash can be used. Activities in water, e.g., swimming, fishing, waves, can be discussed. A composition can be written on "The Uses of Water". A discussion can also focus on how to avoid polluting water. Use real or imagined stories relating to water.
- ♦ In maths, measurement of liquids can be enhanced, e.g.,  $\frac{1}{4}$  litre of water,  $\frac{1}{2}$  cup or bottle, the number of cupfuls that fill a container.
- ♦ In science, an experiment can be conducted to show the three different states of water: solid, liquid, gas.
- ♦ In art, one can find pictures showing different sources of water, e.g., rain, rivers, springs, or draw wavy patterns and sceneries depicting water.
- ♦ On the environment, learners can collect pictures showing pollution of water and articles on environmental and water conservation.
- ♦ In music, sing songs about the sea. There are songs connected with water, rain, lakes, seas and oceans, clouds, floods, and storms.

### 5.1.2 Problem Solving Approach

What is learnt in the classroom can be applied to analysing and solving real-life problems. Questions are posed that require a multi-disciplinary approach to answer. Pupils then have to find



### Activity

Write down how a topic on "Animals" can be taught effectively using the project method. Record how this topic can be integrated into:

- ♦ Languages
- ♦ Maths
- ♦ Religious studies
- ♦ Science
- ♦ Art
- ♦ Environment
- ♦ Music

different possible solutions to these problems. The practical application of learning provides good opportunities for integrated learning.

### 5.1.3 Team Teaching

This provides opportunities for integrated teaching and learning. A science teacher and a language teacher can work together to teach certain programmes, each utilizing their own specialization effectively.



### Discussion Points and Exercises

1. Devise some topics for project work that would require an integrated approach.
2. Consider problems the community is facing at present, and how teachers and pupils can address some of these issues in the classroom.
3. Devise some exercises that would enable teachers from different disciplines to work together, e.g., the mathematics teacher with the social studies teacher, the ethics teacher and the science teacher.

## 5.2 Integration of Different Subjects in Textbook Writing

Many textbooks are written with emphasis on their specific subject and no connection between that subject and another. The textbook writer needs to know that for young children, especially, knowledge is knowledge – children do not see it as isolated subjects. The national goals for each subject are also not recorded

by subject. For example in Kenya, one of the national goals is to foster nationalism, patriotism and national unity. All textbooks must therefore aim at achieving this goal. Deliberate action needs to be made by textbook writers to link the content of each subject to other subjects. This can be done in a number of ways.

### 5.2.1 Integrating Computers into Different Subjects

Learning computers is becoming increasingly important. Computers



#### Selection of Computer Learning Programmes

Subject	Programme	Company
<b>Kindergarten</b>		
Maths	ABC 123	Word Perfect Mainstreet, 1995
English	ABC 123	Word Perfect Mainstreet, 1995
Art & Craft	Music Colour Book	Disney Interactive, 1996
Reading	Lion King, Casper	Disney Interactive, 1995
<b>Primary</b>		
Maths	ADI Maths	Sierra Edutainment, 1995
English	ADI English	Sierra Edutainment, 1995
Kiswahili	Crosswords (Made in Riara)	Expert Software, 1995
Geography	Encarta Encyclopaedia	Microsoft Corporation, 2000
History	Encarta Encyclopaedia	Microsoft Corporation, 2000
Art	Crayola Art Studio	Davidson and Associates 1995
Reading	Casper 2, Pocahontas	Pixel Genius Entertainment Inc. 1995
<b>High School</b>		
Maths	GCSE Maths	Davidson and Associates, 1994
English	GCSE English	Davidson and Associates, 1995
History	GCSE History of the World	Davidson and Associates, 1995
Geography	GCSE Geography	Davidson and Associates, 1995
Biology	GCSE Biology	Davidson and Associates, 1995
CRE	The Bible	Davidson and Associates, 1995
KCSE revision	Tutorial Revision	Interactive Learning, 1990
Physics	GCSE Physics	Davidson and Associates, 1995
Chemistry	GCSE Chemistry	Davidson and Associates, 1995

**Key:**

GCSE = General Certificate of Secondary Education

CRE = Christian Religious Education

KCSE = Kenya Certificate of Secondary Education

create different images in the learners' minds and help them perform tasks faster. Learners at all levels should be aware – and unafraid – of how computers work. Students should be able to use computers in learning mathematics, languages, science and other subjects.

- ♦ In maths, computers aid calculations. Even a “slow” computer can add hundreds of thousands of numbers in one second. Powerful computers can add millions of numbers per second. Learners can do arithmetic, mistake free, with the use of computers, a major step from manual exercises.
- ♦ In language, learners can use computers to sort, add and rearrange words in any way desired. Computers are particularly helpful in doing self-correction.

Computers can be programmed with information in different subjects, which learners can refer to. The information in the box on the previous page shows programmes already developed and in use in Kenya, among other countries.

In writing a text, an author should include information on how the computer can be used to reinforce the concept being taught in different subjects. Computers can also be programmed in such a way that lessons can be taught/learnt without the teacher's presence. They enhance self-learning.

Teachers' guides should give details on how lessons should be programmed for effective use by learners.

### 5.2.2 *Integrating Art into Other Subjects*

The growth of the mind is enhanced by the ability to perceive and to create visually and artistically. Art enables learners to express themselves, think and decide, develop observation, and hone eye-hand coordination. The following are examples of how readers can involve their art skills in various subjects:

- ♦ Geography lessons, by drawing maps to visualize concepts learnt to strengthen learning.
- ♦ Mathematics questions on area, perimeter, volume are better understood when learners visualize and draw them.
- ♦ Science by making models of organs and their functions.

## 5.3 Conclusion

Approaches in teaching/learning need to take on board the integration of different subjects across the curriculum. The integrated approach enhances holistic learning for individual development and self-fulfilment. It also makes sense, as the learners understand fully the existing interrelationship between them and the social and physical world. The next chapter deals mainly with modes of assessment, with the first section pointing out that integration of knowledge from other subject areas forms one criterion for evaluation.

# Assessing Learning Outcomes

Since educational opportunities are limited in most African countries, examinations have been utilized to screen pupils, allowing only a small minority to acquire secondary schooling and an even smaller percentage to move into higher education. Because of this, pupils, parents, teachers and school authorities tend to measure their school success in terms of their success with examinations. The curriculum is therefore closely tied to the examinations. The textbook writer must take assessment and examinations seriously into account.

It is unfortunate that most examinations at primary and secondary school levels in Africa tend to concentrate on lower level cognitive skills, and almost totally neglect affective skills. Yet an education system that promotes only lower level skills seriously handicaps its people. The textbook writer can help to counter this tendency by thinking carefully about how to assess the learning the textbook is intended to promote.

Bloom's Taxonomy of cognitive and affective skills (see Chapter 2) provides the foundation for the development as well as for the testing of skills that can be nurtured through education. As textbooks are key in the achievement of these skills, writers

need to be certain that their textbook provides the medium through which the skills are learnt.

## Example

The ability to use the simple present tense is a skill. A wide range of concepts and knowledge can be covered in the context of teaching the tense. Examples include, "I have a gun", "I like farming", "We have many animals", "Democracy is good". Each of these sentences uses the simple present tense to convey important concepts, knowledge, attitudes and values.

## 6.1 Assessing Pupils' Performance

There is need to continually assess pupils' performance in order to:

- ♦ Find out whether the objectives of the lessons have been achieved.
- ♦ Ensure that the specified skills have been learnt.
- ♦ Monitor a pupil's progress throughout the course of study.
- ♦ Motivate learners as they work harder and for longer hours when examinations and tests are near.
- ♦ Test the effectiveness of teaching.
- ♦ Stimulate high-level thinking and formation of attitudes.

- ♦ Test recognition of facts, ability to make simple generalizations and ability to apply information and principles.
- ♦ Identify individual learning needs of pupils (help a teacher to improve teaching skills).
- ♦ Form the basis for individual pupil's performance report.

## 6.2 Types of Evaluation

Among the common types of evaluation that guide the pupil assessment process are diagnostic, formative and summative.

### 6.2.1 Diagnostic Evaluation

This type of assessment can be carried out at the beginning of the lesson or during the course of the lesson. The purpose is to establish what skills have been learnt or not learnt. This gives the teacher direction on the areas to concentrate on in presenting the lesson.

### 6.2.2 Formative Evaluation

These assessments enable the teacher to collect data that help identify areas of

### Example

In a science lesson on "Differences between Plants and Animals", it is important to ask questions such as:

- ♦ What qualities do plants have that animals do not have?
- ♦ What do animals do that plants cannot do?
- ♦ What differences are there in the way people use plants and animals?

These questions will help you to find out what learners know and what they do not know so that you can concentrate on what they do not know and build on what they know.

difficulty or those that require change of methodology. The evaluation is carried out in the process of teaching.

A form like the one below will facilitate this type of evaluation.

### Example

#### MATHEMATICS ASSESSMENT

Subject	Assignment	Date	Teacher's comments	Sign
Shape	Card 16	21st	Lesson well understood	
Measurement	2Kg	19th	Square number concept not grasped	
Number	Card 17	17th	Order of size understood	
Measurement of angles	Page 14 Ex 14	15th	Measurement of angles well understood	

#### Pupil's comments on week's work:

*I had difficulty understanding the work on measurement.*

#### Teacher's comments on week's work:

*Achieng, your work has been encouraging this week. Do your best to get high scores in all the exercises. See me on Wednesday at break time so that I can explain the topic on measurement.*

NB: The teacher will need to change the method used in teaching "measurement" so that Achieng can understand.

### 6.2.3 Summative Evaluation

These examinations play a major role in grading learners for promotion to the next level, e.g., national examinations. It should go without saying that the textbook should cover the information required for the national examination.

## 6.3 Assessment Methods

There are three main methods of assessment: choice free, choice type and multiple choice.

### 6.3.1 Choice Free Assessments

In these types of assessments, no alternative solutions are provided. Specific types include:

- ♦ **Structured assessments**, in which the questions mainly test recall of facts, as the learner is expected to fill in blank spaces. Answers are recorded as single words or short sentences. Such questions are highly recommended for lower primary levels, where learners are still developing their language skills.

#### ?! ? Example

A \_\_\_\_\_ is a non-living thing.

\_\_\_\_\_ is one of the values we have learnt about during this lesson.

- ♦ **Practical work**, where learners are given tasks such as modelling or drawing. The teacher then assesses and rewards accordingly. These assessments test ability to perform given tasks and behaviour change. Checklists like the one provided below can be used effectively to evaluate learners' progress as they go through their practical lessons.

#### ?! ? Example

Group: B  
Number in Group: 4  
Name of pupil: Razak  
Subject: Art and craft:  
Mosaic creation  
Task: To create a beautiful mosaic as instructed by the teacher.

#### Criteria

Plans how to carry out work	✓
Willing to share materials	✓
Very talkative	x
Good listener	✓
Gives others an opportunity	✓
Works easily with group	x
Easily distracted	x
Patient enough to complete task	✓
Interested in the task until it is complete	✓
Remembers to tidy up the working surface	✓

- ♦ **Essay assessments**, where the learner is given a main topic to write on. This open-ended questioning technique requires detailed, well organized information. It stimulates a learner's creativity. The essay type of assessment is not recommended for lower primary learners.

#### ?! ? Example

Learners are asked to write an essay on the following topic:  
"Industrialization Is the Key to Development in Any Country".

- ♦ **Oral questions in class.** Question sessions can be very effective as they help the teacher to establish the learners' ability and memory, and to monitor the concentration of learners and the effectiveness of teaching.
- ♦ **An oral test,** which is very useful at all levels especially lower primary where learners' learning ability and concentration are targeted. Pupils tell the teacher what they know about the topic of discussion.
- ♦ **Observation of behaviour,** as part of a process to assess skills, attitudes and behaviour change. Observation is effectively used when learners are dramatizing, singing, going on study visits, reciting, miming, chanting, playing games, interviewing resource persons and doing other practical work. Individual attitudes and behaviour can be evaluated as the lesson goes on.



### Sample Observation Checklist

Attitudes/Behaviour	
Patient	x
Considerate	✓
Accepts responsibility	✓
Hard worker	✓
Tidy	x
Easy to work with/pleasant	✓
Keeps time	✓
Willing to share	✓

- ♦ **Questionnaires and attitude scales,** which involve questions specifically tailored to elicit reactions from learners to help in finding out whether the necessary values have been learnt. A questionnaire like the following could be used here. Such a questionnaire can provide a lot of information about a learner's behaviour and attitude towards learning.



### Sample Questionnaire

Tick in the box containing the answer that is closest to the way you feel.

1. Do most pupils in class like you?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
2. How would you rate your handwriting?	<input type="checkbox"/> GOOD	<input type="checkbox"/> POOR
3. Do you enjoy making new friends?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
4. Do you enjoy sports activities?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
5. Do you find it difficult moving to new work?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
6. Are you talkative?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
7. Can you concentrate for long periods?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
8. Do you often ask questions in class?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
9. Do you often forget your assignments?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
10. Are you good at spelling?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
11. Do you enjoy creative writing?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
12. Do you plan before starting any practical work?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
13. Are you always present in class?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
14. Are you always punctual?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
15. Do you like school?	<input type="checkbox"/> YES	<input type="checkbox"/> NO

### 6.3.2 Subjective Choice Type Tests

There are two major examples of subjective choice questions:

- ♦ **Alternative response**, which presents a right answer and a wrong answer. The learner is expected to highlight the right one.

#### ?! ? Example

Write true or false:

1. Milk is a form of matter. \_\_\_\_\_
2. The young of a goat is a calf. \_\_\_\_\_

- ♦ **Matching items**: Two columns are provided. Learners are expected to match the items on the left-hand side with those on the right-hand side.

#### ?! ? Example

Match the following nations with the continents to which they belong.

Nation	Continent
1. Namibia	___ Europe
2. Austria	___ Asia
3. India	___ Africa

### 6.3.3 Objective or Multiple-Choice Questions

These consist of written questions or incomplete statements, which are known as the stems, and a number of choices to complete the statement. One of the choices given is correct but the other three are distracters. There are five types of multiple-choice questions depending on what they test:

- ♦ **Knowledge**, in which the questions test whether the learner remembers the facts taught.

#### ?! ? Example

The sun rises in the

- a) North
- b) South
- c) East
- d) West

- ♦ **Comprehension**, which requires a learner to know more than one type of information.

#### ?! ? Example

Which of the following planets is closest to the sun?

- a) Saturn
- b) Mars
- c) Venus
- d) Jupiter

*The learner is expected to know the order of the solar system so as to select the right answer.*

- ♦ **Application**, in this type of question, knowledge learnt is used to solve new problems or situations. This type is recommended for upper primary and high school pupils.

#### ?! ? Example

How best can you help beggars?

- a) Give them food.
- b) Help them to get employment.
- c) Tell them God helps those who help themselves.
- d) Tell them to ask their relatives for help.

*Although the learner is aware that helping a beggar is good, the question requires coming up with the most effective way to do so.*

- ♦ **Analysis**, in which the information learnt is broken down into component parts, making its organizational structure clearer. In this way a learner can analyse a question. These types of questions are recommended for learners in upper primary and high school.



#### **Example**

Which of the following pairs of qualities do you think are most important in marriage?

- Joy and peace
- Gentleness and goodness
- Patience and self-control
- Love and faithfulness

*The learner is expected to know the importance of each quality in marriage, and to identify the pairs of qualities that greatly strengthen a marriage.*

- ♦ **Synthesis**, which is a combination of distinct ideas into a complete whole.



#### **Example**

The following statements describe the characteristics of a certain soil type:

- ♦ Has very fine particles
- ♦ Is heavy and contains little air
- ♦ Is sticky when wet
- ♦ Cracks when dry

The soil described above is likely to be:

- Sandy soil
- Loam soil
- Silt
- Clay soil

*The learner is expected to know enough about the characteristics of all types of soil to identify the correct type of soil according to the question.*

## 6.4 Points for Consideration in the Preparation of Pupil Assessments

One principle for pupil assessments is to divide test questions roughly into three parts, with one third that can be successfully tackled by any student who has followed the course. This third would cover lower level skills such as recall, being able to repeat what has been learnt more or less coherently and in their own words. The second third should be more difficult, but could be tackled by any serious student. This would test middle level skills. The last third should be difficult, so that only the very best students can succeed with them.

Tests devised in this way would help discriminate between the weakest and the most able students, whilst at the same time allowing weak students who work hard to attain at least a third of the marks. Other elements of the assessment, discussed briefly below, include creativity, diversity and fairness, complemented by teachers' teamwork.

### 6.4.1 Creativity

This is the ability to come up with solutions to stated problems. A good assessment should give learners the freedom of coming up with their own solution to a problem rather than limiting them to specific answers from which the choice is made.

### 6.4.2 Diversity

There is need to use a variety of assessment methods to ensure that all the objectives have been achieved. Each method has its own disadvantages.

The assessment of the learning outcome is a continuous process and does not end with the textbook.

### 6.4.3 Fairness

To make a fair assessment there is need to:

- ◆ Recognize different levels of ability and achievement of individual learners so that the assessments are neither too hard nor too easy.
- ◆ Provide enough examples and exercises in each chapter. This enhances the understanding of the learners, as they are able to confirm areas of doubt with teachers.

### 6.4.4 Teamwork

Teachers need to work as a panel while preparing for assessments. Areas of consideration are:

- ◆ Topics to be tested.
- ◆ Number of questions to ask.
- ◆ How long the test should be.
- ◆ Types of questions to ask.

The textbook writer should stimulate the teachers to consider these issues, for example through the activity given below.

#### Activity

As a guide to teachers, suggest the following:

- ◆ Prepare a 30-minute assessment involving both choice and choice-free types of assessment, starting with simple and moving to difficult questions.
- ◆ Explain how you will effectively assess the attitude and behaviour of your learners in class.

## 6.5 Preparing Learners for an External Examination

As mentioned earlier, examinations are largely used in screening learners as they move into secondary school and institutions of higher learning. It is therefore of paramount importance for the textbook writer to give guidelines to the learners on ways of preparing effectively for external examinations.

#### Example

Advise the learner to take the following points into consideration:

- ◆ Important topics that must be revised.
- ◆ Different ways in which examination questions may be asked.
- ◆ Topics that need more revision than others.
- ◆ Preparation of a revision time table.
- ◆ Study techniques.
- ◆ Proper way of conducting oneself during exams.
- ◆ Importance of counselling.

## 6.6 Conclusion

This chapter has discussed issues related to the assessment of the result of the teaching/learning processes. Textbook writers must be aware of these issues and provide for them in the text. The assessment of the learning outcome is a continuous process, however, and does not end with the textbook. Teachers must incorporate it into their lesson preparation routine, and the textbook and teachers' guide can provide pointers for doing so.



## Part II

# Getting Down To Business

7 – Textbooks and Gender

8 – Some Language Issues in Textbooks

9 – Technicalities of Textbook Writing



# Textbooks and Gender

**G**ender as a concept refers to the roles of girls, boys, women and men as defined by their society. The process of the definition is continuous and goes on from childhood to adulthood. The actual definition for each society is reflected through the division of labour (gender roles), available opportunities and allocation of responsibilities, as well as the whole aspect of access to and control of assets, resources and decision making processes.

Many institutions reinforce the social construction of future women and men from that of girls and boys. Among these institutions formal schooling has been the most important.

## 7.1 Why Gender Is a Critical Issue in Textbook Writing

Textbooks are important socializing agents. They present a world from which girls and boys adopt respective role models that influence their thoughts, attitudes and life aspirations, and relations with the opposite gender. Textbook writers are themselves the products of a socialization process with held values, attitudes and assumptions about girls, boys, women and men. Their attitudes and values influence the images they portray and the

relationships they build among the characters they select.

Although in many cases the writer's input in a textbook is a technical skill, such as simple mathematics or grammar, the writer can make learning more practical and interesting by creating a world with human characters doing things. The process of humanizing even highly technical subjects especially at the primary level makes learning real and practical. It helps learners to visualize themselves in the textbook context, and can be used in all subjects through texts, stories and illustrations, for example:

- ♦ Narratives about how people live, relate with each other and organize themselves.
- ♦ Problem solving based on people's actions and reactions towards the physical and social world around them.

A major challenge for textbook writers is to portray relationships between girls and boys, men and women, without perpetuating gender stereotypes.

The cultural attitudes and values held by textbook writers are readily reflected in the books they produce. Whether subtly or overtly, illustrations and narratives in the textbook tell a story about the life of girls/boys and women/men as they relate with one another. The textbook thus portrays the gender realities of the social world.

### **Discussion Points and Exercises**

Some common attitudes and held values regarding gender in different cultures:

**Men and boys are:**

Aggressive  
Decision makers  
Independent  
Good in maths, sciences and technical subjects

**Women and girls are:**

Submissive  
To be seen not heard  
Dependent  
Good in languages and art

What attitudes and values are held in your community with regard to men and women? Add to the lists above.

As the writer of the textbook you must consciously and deliberately endeavour to portray women and men in complementary roles.

Examples of gender bias are cited in Chapter 3. Section 3.2 points out how teaching methodologies may result in gender imbalance. The section also cites examples of the hidden curriculum, portraying boys and men in active roles, while girls and women are portrayed in passive roles.

### **Activity**

You can identify the hidden curriculum by picking a story and undertaking the following analysis:

- ◆ Who is seen?
- ◆ Who is named?
- ◆ Who is more powerful and how is the power used?
- ◆ Who has access to and/or control over what assets/resources?
- ◆ Who is telling?
- ◆ Who is being told?
- ◆ Who is helping whom?

Source: *ABC of Gender Analysis*, FAWE, 1997.

As learners internalize the messages in the gendered world of textbooks, their self-images and aspirations in life are affected either negatively or positively. Textbook writers need to deliberately encourage girls in Africa to strive for leadership positions by including role models they can emulate.

### **Example**

- ◆ Are girls consistently portrayed in and around homes, doing reproductive roles?
- ◆ Are boys consistently portrayed away from home and performing roles that are of more "value" as compared with those of girls?
- ◆ Are women often failing in what they are portrayed as doing?
- ◆ Are men portrayed as always succeeding as compared with women?

## 7.2 Making Textbooks Gender Responsive

As an important medium of learning/teaching textbooks should be written in such a way that they empower both girls and boys on equal basis. This in turn should have positive influence on their learning, retention, completion and performance within the education process. This can only happen if the writers:

- ♦ Are committed to challenging the unequal relationships that exist between girls and boys and women and men in their societies.
- ♦ Present girls, boys, women and men on equal basis, with relationships that place value on all of them as essential human beings with the rights to prosper and belong.
- ♦ Use gender responsive language and avoid use of gendered terms like mankind, manpower, watchmen, etc.
- ♦ Present girls, boys, women and men performing similar roles, successfully and in equal positions of power.



### *Exercise*

1. Pick any story in any textbook and count how many times:
  - ♦ Girls are portrayed?
  - ♦ Boys are portrayed?
  - ♦ Women are portrayed?
  - ♦ Men are portrayed?
2. Consider:
  - ♦ What each category is doing?
  - ♦ Who is using what resources?
  - ♦ Who is portrayed as powerful?
  - ♦ Whose roles and performance are enviable?

What the exercise above presents is a simple gender analysis to establish the gender responsiveness of a text. The exercise is useful for textbook writers to assess the gender responsiveness of their texts in order to:

- ♦ Measure their successes and failures in mainstreaming gender in their texts.
- ♦ Assess the extent to which they are challenging the unfair and unequal relationships that exist in the societies.
- ♦ Identify stereotypes and other issues of gender inequality in the text for revision.

## 7.3 What a Gender Analysis Is All About

The analysis is a simple gender screen that aims to establish whether the text in question empowers girls and boys, on equal basis. It seeks to quantify the portrayal of women, men, girls and boys under different analytical categories in the textbook. On the whole, the analysis helps to explain qualitatively the gender map of the text and possible implications to the learners, by showing the level of gender awareness within the text.

The outcome of the analysis should be the identification of any gender discrimination and disparities. This may require revision of the text to ensure it portrays a gender responsive perspective. Ultimately, such a portrayal can help contribute to a more humane and gender responsive society, where women and men are seen as important for each other's successes and survival, and for the nation's development.

Textbook writers can design a simple framework against which their text can be screened for gender sensitivity. The framework forms a

A gender analysis intends to identify any gender discrimination and disparities. The outcome of the analysis may require revision of the text to ensure it portrays a gender responsive perspective.

criterion against which the analysis is done, on the basis of issues ranging from narration to speech, from ownership to illustrations.

### 7.3.1 *Narration of the Text*

The analysis considers how the narrative addresses – implicitly or explicitly – the following questions:

- ♦ What activities are girls, boys, women and men undertaking?
- ♦ Who is active / passive?
- ♦ What technology is being used?
- ♦ Who is seen / not seen?

### 7.3.2 *Speech*

The roles of characters are usually reflected in the patterns of their speech. The analysis asks:

- ♦ Who is speaking?
- ♦ What is the nature of speech – e.g., giving orders?
- ♦ Who is giving instructions and who is obeying?
- ♦ Who is providing the answers/ the solutions?

### 7.3.3 *Use of Language*

Societal values and norms are learnt through language, as much as they are learnt through observation and the socialization process. Language is often found to be full of gender discrimination and bias. Terms used may totally exclude or minimize one gender, and in most cases those excluded or ignored are women and girls. Such terms include: mankind, manpower, watchman, fireman,

policeman, chairman, etc. Textbook writers are encouraged to use non discriminatory and gender neutral terms such as workforce, human resource, security guard, fire fighter, police officer and chairperson (or simply chair, as chairperson has itself become a gendered word and in general use refers only to a female chair) .

Pronouns can still present a problem. One simple way out is to use plural nouns and their pronouns – children/they – in cases where the personality is not specifically named and the gender is not relevant. Changing pronouns from he to she simply accentuates bias, the use of “he/she” is awkward, and discerning writers avoid the construction “s/he”. Another trick that is particularly useful for giving instructions is to put them in the second person – direct the narrative specifically to the reader.

Other ways biases are exposed through language are in naming characters. Often only or mostly men and boys are named, while girls and women are unnamed. This is especially evident in stories and illustrations. All characters need to be given equal treatment through the use of nouns and naming within the text.

### 7.3.4 *Ownership and Other Forms of Power*

#### *Control*

Gender bias is found in control of resources. The gender analysis asks:

- ♦ Who is in ownership positions and for what assets/resources?
- ♦ Who is in what position of power?
- ♦ On whom is the power being used?

### 7.3.5 *Illustrations*

Images are powerful. Children identify with the people they see in the pictures in their books. The gender analysis should examine the images carefully and consider the following:



### **Discussion Point and Exercise**

Take any textbook and do a simple analysis of the illustrations:

1. Count how many times girls, boys, women and men appear in the illustrations.
2. What different activities are the girls, boys, women and men doing?
3. Who is more visible in the illustrations?

- ◆ What are the girls, boys, women and men doing?
- ◆ Is there any gender stereotyping?
- ◆ What are the sizes of the girls compared with those of the boys?
- ◆ What are the sizes of the women compared with the men?
- ◆ How is colour applied for each gender?

## 7.4 Conclusion

An ideal textbook represents girls/boys and women/men in such a way that they relate on equal terms in language, illustrations and narration. This is one way in which textbook writers can contribute towards the establishment of a society free of gender bias and where issues of human rights are upheld and respected.

Needless to say that gender responsiveness should be an essential criterion among those used to determine the approval of any textbook for official use in education.

# Some Language Issues in Textbooks

**L**anguage is the medium of learning most concepts. Besides the gender and social consciousness issues discussed in earlier chapters, textbook writers must keep in mind that the kind of language they use and the way they use it can hinder or facilitate learning. The specific language used in textbooks is determined by a country's education policy. Other considerations relate to the way language is used to present the technical content.

## 8.1 Language Policy

A policy guideline is especially necessary in a country that has multiple languages and dialects – commonly referred to as mother tongues. For example in Kenya the majority of children are faced with a trilingual situation very early in their school life. Besides English being the official language, Kiswahili is the national language. All three languages – English, Kiswahili and the mother tongue – are expected to feature with varying degrees of emphasis at the various levels of the education system.

In general, the use of the mother tongue as the medium of instruction is recommended in the first three years of primary school. The Kenyan system teaches English as a subject

up to the end of third grade, after which it assumes the role of medium of instruction. Kiswahili is taught as a subject throughout primary and secondary education. Other languages, including French, Arabic and German, are offered as optional subjects at the secondary school level. Both English and Kiswahili are examinable at all levels of education and therefore tend to be taken very seriously.

The teaching of literacy in the various mother tongues is handicapped by the lack of textbooks and other learning materials. This is because most publishers are unwilling to print books whose market is limited to small ethnic groups. Other countries have different language scenarios.

As indicated above, the mother tongue is strongly recommended as the medium of instruction for beginners. This is because of the need to link school with home and to ensure that early learning takes cognisance of the child's preschool experiences. It is also because of the essential relationships among language, culture and concept development. Even when handled well, the introduction of a second or foreign language does interfere with these essential components of development since language is critical to the expression of concepts and culture.



### Activity

1. Using your country's Education Policy, outline the language policy at the various levels of education.
2. What textbooks and other materials are available for use in each language?
3. Discuss the impact and quality of the teaching/learning process in each identified language at the various levels.

## 8.2 All Teachers Are Language Teachers

How often have you heard this statement?

As a means of communication, language belongs to all subjects in the curriculum and all subjects need language to express themselves. It is also a well acknowledged fact that language cannot be learned in a vacuum. Language revolves around issues and concerns affecting language users everywhere.

### 8.2.1 Language Textbooks

Writers of language textbooks therefore need to be very familiar with such issues and endeavour to expose learners to them even as they prepare materials on listening, speaking, reading and writing skills. It is in the language learning area more than anywhere else that the concept of integrated learning becomes most relevant. Sentences and passages for reading and comprehension, précis, and written compositions should reflect concerns such as good behaviour/ manners, environmental

issues, health and nutrition, HIV/ AIDS related information, economic and technological development, and scientific discoveries, among others. Literature, whether integrated into language or as a separate subject, is ideal for reflecting these and many other issues specific to other subjects of the curriculum.

It follows therefore that the language textbook writer should reflect on the content of other subjects and work closely with experts in those subject areas to ensure appropriate inclusion of essential information in language and literature textbooks.

### 8.2.2 Other Types of Textbooks

In a similar vein, it is important that teachers of subjects other than language recognize the critical role they can play in advancing language learning and use. They will do this more efficiently if language learning is integrated into the content of each subject and its correct usage is made deliberate in all lessons. For example, science teachers may introduce scientific terminology that is unfamiliar, difficult and complicated in meaning, without realizing the importance of the appropriate methods and processes recommended for thorough understanding. They would do well to sit with language teachers and learn modalities of introducing new words and terminologies to ensure such new learning is thoroughly understood and remembered.

Terminologies learned theoretically are easily forgotten. This takes us back to the classic formula of moving from concrete to illustrative to abstract. No wonder so many students in high school chemistry have a problem with terms such as "mole concept"! At face value, no student can connect the phrase with any previous knowledge of language. Its introduction therefore needs to be

thorough and comprehensive, relating it to its scientific rather than ordinary meaning. In order to demystify science, it is important to start by demystifying scientific language.

The other area that needs attention is the correct use of language by all teachers, beginning with writers of textbooks. Unless other teachers use language correctly, insist on correct use of words, proper sentence structure, punctuation, pronunciation, etc., they can undo what language teachers wish to achieve. All subject areas need to reinforce each other. As a textbook writer, you need to ensure correct use of language in all its forms and especially in the teachers' guide. It is worth noting that any textbook should be reviewed by a professional editor as well as education professionals to ensure that the book actually says what the writer intends to say and says it properly.

Another point for the writer to keep in mind is the mechanics of presenting the material in the classroom, or displaying knowledge on examinations. Handwriting is an essential component of expression. Poor handwriting can lead to illegibility, thus discouraging learners and even causing low marks where a candidate may have the right answer. In the exercises you propose in your textbook, keep reminding teachers and learners alike of these

Any textbook should be reviewed by a professional editor as well as education professionals to ensure that the book actually says what the writer intends to say and says it properly.

essential standards, besides the factual information per subject.

### 8.2.3 Language Level

All textbook writers need to be aware of the language competence of their audience. Textbooks that are written in familiar language facilitate self-learning. This means that students who are self-motivated will not need the teacher all the time.

The order and pace used by language teachers to introduce new language learning items should be adopted for other subjects so that teachers avoid bombarding learners with new linguistic items as this can hinder learning.

## 8.3 Language Standardization

Although it is the final business of the publisher to ensure that textbooks use standard language and approved style, the writer also needs to be aware of these considerations. Standard language avoids the use of slang, dialect and unnecessary mix of languages. Where it is imperative that other languages feature, translation should be made immediately available. For example, it is appropriate that a difficult scientific name of a tree, fruit or flower should be accompanied by its common name in a well known local language. Such equivalents will facilitate faster learning through connection with the real item (or its picture).

## 8.4 Conclusion

This chapter has tried to highlight language as the critical medium of learning and of textbooks. The issue of language policy in education is a political decision that is articulated in

the Education Act. In situations with multiple language use, where names of objects and concepts may need to be taught in two or more languages, translation into other common language becomes an issue.

It is important that language textbook writers familiarize themselves with the content and special names used in the various subjects of the curriculum. Only this way can language lessons reinforce concepts learnt in other subjects. From the other

direction, it is also important for all textbook writers to ensure that they use generally accepted standard and correct language. Textbook writers and teachers of other subjects need to be proficient in all aspects of the language of instruction, especially grammar. Learners need consistency in the use of any language. Correct use of language by all teachers regardless of subject thereby becomes complementary to language learning.

# Technicalities of Textbook Writing

**I**t is time now to discuss some of the “nitty-gritty” issues involved in producing the textbook. These range from the writing style to elements of editorial format, from the way questions are posed to the layout of pages. Not all of these may be under the control of the writer, but they should be considered in the preparation of the text. And before you begin, look again at the syllabus followed in your country.

## 9.1 The Syllabus

The textbook writer’s focus in writing both a pupil’s textbook and a teachers’ guide is to fulfil the requirements of the syllabus. The writer should be guided by the specific objectives stated in the syllabus at each level and more specifically in each topic.

The writer will need to come up with effective teaching/learning activities that aim at achieving the stated objectives, based on specific topics in a subject. The writer also needs to ensure that the national goals are being addressed through the activities.

Information in the text should flow like oil in an engine for maximum readability.

### ?!? Discussion Point

Using your country’s syllabus:

1. Find out how the goals and objectives are stated.
2. Write a lesson on the topic “Environment Conservation”. Include teaching/learning activities that aim at achieving national goals and objectives of education as stated in the syllabus.

## 9.2 The Flow of Text

Information in the text should flow like oil in an engine for maximum readability. The flow will be facilitated if the textbook writer keeps some basic principles in mind.

### 9.2.1 The Importance of an Outline

It seems so elementary, but before you start to write prepare an outline of the material in the way you want to present it. The outline should be detailed enough to indicate not only topics and subtopics in the subject matter, but also the points where there should be exercises or examples to reinforce the material.

## 9.2.2 *Presentation of the Material*

At the beginning of the book the text should tell learners in broad terms what is expected of them by the time they have finished the book, for example how the book fits into the examination process. This is usually well stated in the syllabus and can also be in the teachers' guide.

Similarly, the start of each chapter should give the learner an overview of the chapter's:

- ♦ Contents
- ♦ Sequence (how the subtopics follow each other).
- ♦ Interrelationships (how all topics are connected to each other)

This enables learners to know where they are going and assists them in the reading task. Having done this, the writer should make sure that all the points that are said to be covered are actually included. Readers get confused if they are told to expect something that does not materialize. Similar explanations may be needed at the beginning of major sections within chapters.

## 9.2.3 *Paragraph Organization*

Paragraphs should be organized in such a way that the information given is systematic and logical. This makes the readers' task easier and more enjoyable. Each paragraph should contain a "topic sentence" presented early in the paragraph.

## 9.2.4 *Consistency*

Long-standing conventions guide the use of language in its printed forms - formatting, typography, heading styles, punctuation, spelling, etc. When these conventions are not followed consistently, the readability of the text is affected. Use the same format for different types of information in the textbook - examples, definitions, test

questions, etc. Use the same term for the same use - here we are talking about textbook writers, not authors, for example. Call characters by the same name - a discussion of the late president of Malawi might refer to him as either Hastings Banda or Kamuzu Banda, but should not go back and forth. Spell words the same way every time they are used - the name of the town in Kenya can be either Lokichogio or Lokichoggio, but the textbook should use the same spelling every time.

Consistency also applies to the use of series - sets of ideas or concepts strung together in a single sentence or placed in a list. All the items in the set should be the same grammatical construction. This is known as parallel construction and is one of the marks of a careful writer.

### ? ! ? *Examples*

#### **Parallel Construction**

**Wrong:** "The committee's mandate was the compilation of cases, to analyse the data and evaluating the responses."

**Right:** "Proposed activities for the committee include planning the curriculum, implementing the changes and evaluating the results."

Don't add an item to a series that is not related to the other items without first ending the series:

**Wrong:** "For the field trip the students visited the museum, Parliament, the city park and found much to learn."

**Right:** "For the field trip the students visited the museum, Parliament and the city park, and found much to learn."

### 9.2.5 Capitalization

Use of an initial capital (uppercase) letter sends a signal that the capitalized word is the name of something. When whole words are capitalized, the signal is that the term is important in some way. Used indiscriminately, capitalization:

- ◆ Reduces the importance of words that should be given an initial capital or set in all capitals.
- ◆ Spoils the appearance of a printed page.
- ◆ Confuses readers.

Initial capital letters should be confined mainly to proper nouns. Words in all capitals should be limited to titles and chapter headings.

## 9.3 Making the Most of Headings

Chapter headings and subheadings are signposts on the reader's journey. Let the heading style guide the reader from the main topic through subtopics. Try not to have more than three heading levels, as readers may get lost. The type style used for the headings will probably be chosen by the publisher, but the writer needs to indicate clearly what the different levels are. Headings must be clear, concise and specific. They should help the reader predict what is coming next.

The contents of the heading should be reinforced as soon as possible to

**Illustrations:**

- ◆ Help the reader to visualize concepts learnt to strengthen learning.
- ◆ Add value to the information and make the reader understand it better.
- ◆ Add colour to the information.

### ! ? Activity

Consider the following headings, select the one you prefer and explain why you prefer it.

Urbanization and Agriculture

How Urbanization Influences Agriculture

\* *The second heading is more specific and clear than the first one.*

clarify the subject matter introduced in the heading. The textbook writer must keep referring to the subject of the heading, to remind the reader of what the topic is about. If this is not done, the reader will feel uncertain and insecure about the subject matter.

## 9.4 Illustrations

Illustrations, pictures and other images are an integral and indispensable part of all textbooks. Examples of illustrations include diagrams, maps, tables, photographs and graphs – among others. They must be appropriate and functional. Do not include an illustration just for the sake of it.

Examples of the use of illustrations:

- ◆ Pictures are crucial in children's reader/story books.
- ◆ In a science lesson where a cow is giving birth, this can be presented best through a photograph, not a diagram or a table.
- ◆ In a geography lesson, the temperature of a place representing a certain climatic region is best represented through a bar graph.
- ◆ In a science textbook, information about useful and harmful animals is best represented through a table as shown in the box below.



### Sample Table

Name of animal	Where found	Is it useful?	Is it harmful?
Fly	In the air/on the wall/ around garbage	No	Yes
Flea	On a person or animal/ in cracks in the floor	No	Yes
Mosquito	In the air/on the wall	No	Yes
Bee	In the air/on the window/flowers	Yes	Yes
Gecko	On the wall/behind the cupboard	Yes	No

Tables and figures that illustrate specific points in the text should be numbered consecutively through the book or chapter and clearly labelled. The text should refer to them by number, and they should be positioned to follow the point of reference as closely as is practical given the layout of the page. That is, if the text refers to Table 1, the table should be reasonably at hand so the reader does not have to search through several pages to find it.



### Activity

Select a topic of your choice and consider the best type of illustration to use to add value to your content.

## 9.5 Examples and Exercises

Examples given should enhance the concepts being taught. Adequate examples should be given to explain:

- ♦ Foreign words
- ♦ Technical terms
- ♦ New vocabulary
- ♦ New concepts

In order to enhance the understanding of the work being tackled both examples and exercises should:

- ♦ Be adequate to enable the learner to understand the concept being taught.
- ♦ Be geared to the level of the learner (not too easy or too hard).
- ♦ Have variety (structured questions, essay, multiple choice questions, matching, etc.)
- ♦ Be relevant to the syllabus and the topic being studied.
- ♦ Be challenging to the learner.
- ♦ Stimulate the learner's intellect.
- ♦ Encourage practical experimentation, discovery and curiosity so that the learner naturally wants to read more on the topic taught.
- ♦ Provide sustained motivation and enable learners to continue experimenting and finding out more.
- ♦ Involve a lot of action to monitor what is being learnt.
- ♦ Encourage learners to work without necessarily being supervised.
- ♦ Have very clear instructions to avoid being misunderstood.



### Activity

What examples and exercises can you give to explain the topic, "Political Systems before Colonization in Africa"?

## 9.6 Glosses

There is need for the writer to explain new terms within the text. A textbook that is full of strange new words that are not defined anywhere will be difficult for the learner to understand. The new term should be explained the first time it is used.

A glossary of new words or phrases, in alphabetical order, should be compiled and placed at the end of the text. Glossaries are useful in revision, as they provide meanings of unfamiliar words/phrases. Sometimes they also indicate the pages where the words appear. It is helpful to the reader if the new word or term is set in a different type (e.g., bold italic) the



### Example

In a religion lesson, the following term can be explained:

The ***living dead*** are people who lived during a person's lifetime but have also passed away. If your grandfather passed away when you are alive, he is a living dead according to traditional African beliefs.

first time it is used to signal that its definition can be found in the glossary.

Glossaries should be as simple as possible. They should be written in such a way that readers have the greatest opportunity of understanding. Some considerations in writing glossaries are:

- ♦ Ensure that the grammar is simple.
- ♦ Use familiar words for the level intended.
- ♦ Add examples that clarify the meaning.
- ♦ Think of unusual, memorable ways of making the meaning clear.



### Example of a Glossary

***Aloe*** A plant that produces a sweet-smelling liquid that is used as medicine and as a perfume

***Amen*** A Hebrew word that means "It is so" or "May it be so". It can also be translated "certainly", "truly", or "sure". In Revelation 3: 14 it is used as a name for Christ.

***Barley*** A cultivated grain similar to wheat, grown as a food crop.

***Breastplate*** Part of a soldier's armour made of leather or metal; it covers the chest and sometimes the back, to protect against arrows and the blows of a sword.

***Circumcise*** To cut off the foreskin of the penis. In biblical times it was used as a sign of God's covenant with His chosen people. Israelite boys were circumcised eight days after they were born. Muslims also circumcise their boys on the eighth day.

***Demon*** An evil spirit with the power to harm people; it was regarded as a messenger and servant of the Devil.

## 9.7 Research and Information Sources

The textbook writer will normally spend considerable time doing research on the subject or topic of focus to ensure that the facts presented are correct and that the subject matter is well tackled. There is need to acknowledge the authors of sources of information. This can be done with a



### Activity

1. Select words for glossing on the topic "Transport" for third grade pupils.
2. Compile your own glossary.

reference list or a bibliography. While similar, these are not the same.

A reference list contains only those information sources that are referred to in the text, while a bibliography usually contains those sources plus others that are expected to be of interest. Reference lists are usually used with very technical or scholarly material that requires a citation and reference to support the points made in the text. A bibliography is more general and provides information sources that may not be referred to directly but have helped inform the text. Sometimes a text may have both a reference list and a list of other suggested information.

Either type of list should contain enough information to enable an interested person to identify and locate any of the items on the list. Long accepted conventions require that the lists include:

- ♦ The name(s) of the author(s) of each work, arranged with surname first for the first author
- ♦ Year of publication
- ♦ Title of the work
- ♦ Publisher
- ♦ Place of publication
- ♦ Other appropriate information, such as the name of a conference where a paper was presented

The lists are alphabetized according to the surname(s) of the author(s). If there is more than one work by the same author, they are usually arranged with earliest first. Publishers usually have their own preferred style for

the format of the individual items in the list (for example the order of the information, and whether titles are italicized or enclosed in quotation marks), but it is the responsibility of the writer to ensure that all the elements are included and the information is accurate. And it is very helpful to the publisher if the initial list is presented in a consistent format.

*An example of a bibliography is found at the end of this manual.*

Besides the bibliography, tips can be given on obtaining further information on different topics. This can be in terms of:

- ♦ Supplementary material such as other textbooks and pupils' workbooks.
- ♦ Improvising materials.
- ♦ Types of resource persons who can be contacted to reinforce a topic.
- ♦ Audio or video cassettes, reference books, newspapers and journals, test papers, etc., that may be available in the market and can enhance learning.



### Activity

1. Choose a topic and identify the possible sources of information you need to write on it.
2. Select two textbooks and discuss the way the different writers deal with the issues raised in this chapter.

## 9.8 Length of the Book

It helps when you economize on the information. Unnecessary details will overload the readers' brain with incoming information. This will discourage them from reading further. The following points should be noted:

- ♦ If students are given too many detailed points, major points of information will get lost.
- ♦ The syllabus should be a guide towards economizing the information. Details from the syllabus should not be included in the text.
- ♦ Only the topics and content identified for the learner in the syllabus should be included.
- ♦ The information should aim at achieving the objectives stated for each topic in the syllabus.
- ♦ The length of the book also depends on the age for which the book is intended. A book for 4–5-year-olds should generally be shorter than one for 11–12-year-olds. This is because the amount of content is determined by age and the attention span of the learner, which the writer must determine.

## 9.9 What the Book Will Look Like

While the final responsibility for the book's appearance rests with the publisher, the writer's own ideas are usually important for ensuring that the appearance complements the technical content.

### 9.9.1 Page Layout

This refers to the appearance of the information on a page. It should be done in such a way that it enhances readability and ease of reference. This involves rational use of print sizes or boldness in highlighting topics and subtopics.

Writers are advised to take care using bullets. As with capital letters, when everything is put in bulleted lists they lose their impact and may become boring or even confusing. A good mix of narrative and lists is the better approach.

### Activity

Consider the two different layouts below:

Communication is the passing of messages from one person to another. Long ago people passed messages by beating drums, blowing horns, sending smoke signals or dispatching fast runners.

**Traditional means of communication**

Long ago people passed messages from one person to another by:

- ♦ Beating drums
- ♦ Blowing horns
- ♦ Sending smoke signals
- ♦ Dispatching fast runners

### 9.9.2 Cover Design

The design of the cover is very important. It serves as a poster for the book. The cover should create the impression of "pick me up and read me". This will cause the reader to want to read the content of the book. An unattractive book is repulsive, especially to young readers.

## 9.10 Conclusion

This chapter has looked at some of the points to consider when the textbook writer actually sits down to produce the book. First, of course, is the assumption that the content is up to date and factual, and that it conforms with the national syllabus. The flow of language, organization of material, and provision for illustrations, activities and assessments are all the job of the writer. Heading formats, page layouts and other elements discussed are likely to be the province of the publisher. The writer should keep them in mind, however, because a well organized and presented text is more likely to attract the interest of a publisher.

# Conclusion

**T**his textbook writing manual was conceived with the intention of addressing concerns about the quality of textbooks in Africa and other regions with a similar need. The authors have tried to provide guidance on critical issues to be considered by the textbook writer. The guidelines are those every writer can use to evaluate the material that is presented, and the way it is presented, to ensure that the needs of teachers and learners in specific contexts and environments are taken care of. We must therefore reiterate that the manual is not a prescription. As a textbook writer you must bring your own knowledge, experience and creativity to bear on the ideas presented in the different sections and chapters. You must, as well, situate your textbook firmly within the national curriculum and syllabus.

## Supplementary Materials

The importance of the author's knowledge on effective teaching methods cannot be over emphasized. The following book is very useful in this area:

Dawn Quist, *Primary Teaching Methods*, Macmillan, Malaysia, 2000.

In addition, every textbook writer must have a copy of the syllabus in the subject of choice. This provides direc-

This manual is not a prescription, but a guide to help textbook writers apply their own knowledge, experience and creativity.

tion on what the learners are expected to learn. It is like the compass that guides a pilot through space.

## Textbook Policy

For most African countries, the official policy on textbook preparation and selection is the responsibility of the government. A statement on this is usually contained in the Education Act. Some countries have an officially accredited body for such preparation and selection. Some may have a fully fledged institute, while others have a curriculum research and development unit/department within the Ministry of Education. The rationale for having a specific body is driven by the need to provide for uniformity and equity in the provision of education and to maintain set standards and quality.

In Kenya, for example, the Kenya Institute of Education (KIE) is responsible for prescribing the set of textbooks to be used at primary and secondary levels. It does this through a variety of panels covering each subject of the official curriculum. KIE invites publishers to submit relevant textbooks

in each subject. The KIE subject panels then recommend up to six textbooks the schools can select from. The panels use well known criteria, available to textbook writers and publishers, that include quality issues, correctness of facts, gender responsiveness, cultural awareness and cost.

Some countries leave the issue of textbook selection either to the local education authority or to the school itself. In Malaysia schools are free to select the textbooks from the various sources in the market. Thailand, on the other hand, has its giant teachers' cooperative publishing house undertake the commissioning and publishing of most textbooks. The Ugandan system is more centralized because the government provides textbooks to schools. The government selects books from a set of three per subject approved by an evaluation panel. As in Kenya, private publishers compete in submitting their books for selection.

Whatever process is chosen, it should guarantee quality, the incorporation of up-to-date knowledge, and the affordability and availability of textbooks on a continuous basis.

Essential syllabus changes should be introduced with sensitivity to the time factor. Enough time needs to be allowed for the preparation of new textbooks, their pre-testing and adequate orientation of teachers. Such changes, especially for poor countries, should also be sensitive to cost implications. Parents should not be burdened with the purchase of new textbooks due to frequent syllabus changes.

Teachers need to be actively involved in any syllabus changes and enabled to own the change process. They should always be trained and encouraged to use relevant old textbooks as sources for additional exercises and examples. Such information would be contained in the teachers' guide accompanying each textbook or set of textbooks.

## Assessing a Textbook

Around the world, especially in countries with relatively centralized education systems, the textbook market is perhaps the most profitable for any publisher. Hence there is stiff competition to publish books and materials that would win the approval of selection panels. On the other hand, it is important that the panels be seen to be fair to all publishers. The involvement of all stakeholders in the establishment of a selection criteria is therefore very important. The panels, however, need to be independent of any undue influences.

Both textbook writers and those charged with identifying set books for a given curriculum should judge the textbook carefully to ensure it is appropriate for the subject matter and level of learner. The following are some questions that should guide the assessment of a textbook:

- ◆ Does it integrate the knowledge from other subject areas?
- ◆ What values and attitudes are developed in each subject curriculum?
- ◆ What values and attitudes do the words and pictures carry?
- ◆ Is there gender bias in the textbook?
- ◆ What are the specific curriculum aims for each subject area?
- ◆ Are the specific skills being introduced divided hierarchically from simple to more complex?
- ◆ Is the amount of time to teach and practise the skills worked out?
- ◆ Is the textbook planned in such a way that there are sufficient opportunities to practise these skills spaced over time so that important skills are fully internalized?
- ◆ Are the concepts and knowledge areas to be covered identified?
- ◆ Is the writing clear and easy to follow?
- ◆ Does the layout aid readability?
- ◆ Are the illustrations, tables and other graphics appropriate?

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