Mkombozi
Centre for Street Children

Practice Handbook:

Methodology for delivering and practicing **N**on-**F**ormal **E**ducation in Tanzania

■ Empowering children ■ Engaging families ■ Enabling communities ■

Mkombozi...

is one of the leading child focussed agencies in northern Tanzania, working with over 1,000 vulnerable children and families a year in Kilimanjaro and Arusha regions. We help vulnerable children and youth to grow in mind, body and spirit and to build a more caring society for all.

We want a world where...

all children and youth are prioritised and can access opportunities to become well rounded, inquiring and productive people, who are working towards a more just and democratic society.

We believe that...

we can promote social justice through participation and collaboration. We capture local potential through learning and reflection and act as a catalyst for holistic development.

Our "change vision" of the future...

is to move ahead in a determined and proactive way as a leading NGO in the field of child rights. This vision defines our intentions to be an innovative, grassroots NGO that others choose to follow and it inspires our work to change the public perception of vulnerable and street children.

Written by Kate McAlpine (Director, Mkombozi), William Raj, Amani Lucas, Theobald Mariki, Michael Kweka and Simon Nyembe with a huge debt of gratitude to the International Baccalaureate Organisation's Primary Years Programme.

Edited & designed by Tanja Kisslinger (Communications, Mkombozi).

Table of contents:

List of Figures:

1. Introduction

This handbook was initially intended for Mkombozi educators who are delivering Non-Formal Education (NFE) to street children in our care or on the streets. However, its principles and practice are applicable in a school-based context and would, in Mkombozi's opinion, be of value in the Tanzanian Education system, since they work towards building learners who are collaborators, communicators, learners and, ultimately, productive members of society.

1.1 What are the beliefs & values that drive Mkombozi's NFE?

Mkombozi's NFE aims to synthesise the best research and practice from a range of national systems, such that the wealth of knowledge and experience in international schools creates a transdisciplinary curriculum which is relevant, challenging and engaging for learners in the 5-16 age range. The driving force behind Mkombozi's NFE programme is a deeply held philosophy about the nature of education. This philosophy is best expressed and understood as emerging from joint consideration of the following:

- Mkombozi's mission (i.e. a statement of our purpose as an organisation)
- Mkombozi's philosophy of education (i.e. our beliefs and values about student learning)
- Mkombozi's NFE student profile (i.e. the goal of the curriculum)
- Mkombozi's beliefs and values paradigm (i.e. language, mathematics, science / technology, and social studies perspectives which, together, form the vehicle through which learning outcomes are explored; see FIGURE 1 ON P.6).

Mkombozi's mission...

To help vulnerable children and youth to grow in mind, body and spirit and to build a more caring society for all. We believe that we can promote social justice through participation and collaboration. We capture local potential through learning and reflection and act as a catalyst for holistic development.

Mkombozi's philosophy of education...

We believe learning is the key to human life. It is an ongoing and evolving process. We encourage the development of the whole child.

By understanding the individual, social, emotional and physical needs of our children we can help them to be the best that they can, both inside and outside the classroom.

For children to become their very best...

We (staff) foster responsibility of personal and institutional development through positive decision-making and shared authority.

We use democratic teaching methods, which are participatory, experiential, creative and promote active learning.

We are encouraging the development of critical thinking, creative and inquiring learners who are actively engaged in democratic living.

The learner is assertive, caring and has a deep sense of respect for him/her self and others. Through facilitation we hope learners will be transformed into fully functioning and capable global citizens. They will be independent and confident, taking control and action within their own lives.

Mkombozi's NFE Student Profile...

We are helping children to become articulate, self-aware, effective decision-makers who are able to live and work with others. We encourage them to value and appreciate beauty (art, music, the environment), to build their self-esteem and confidence, to inculcate a value and desire for self-development, and to aspire to something better in life. We provide opportunities for them to become social activists, to interact with people from different backgrounds, to volunteer and to challenge the status quo in a society that tends not to value young people. We want them to behave responsibly, honestly, openly and creatively.

In fact, Mkombozi has identified a particular set of skills, attitudes and behaviours considered to be essential assets for youth who will become self-reliant, productive members of society -- the NFE Student Profile. This profile is key to the NFE programme at Mkombozi, because it represents the objectives, it drives the curriculum, and it determines the process of assessment which "closes the circle" of our work with students.

According to the profile, Mkombozi's NFE students are:

Inquirers: They investigate a problem in depth, because their natural curiosity has been nurtured. They have skills necessary to conduct purposeful, constructive research. They actively enjoy learning and this love of learning will be sustained throughout their lives.

Thinkers: They exercise initiative in thinking critically and creatively to make sound decisions and to solve complex problems.

Communicators: They receive and express ideas and information confidently in more than one language, including the language of mathematical symbols. They can listen, give and receive feedback, offer opinions and build on the contributions of others. They are able to confer with others and reach a compromise. They are able to discuss, share their points of view, build new meaning and develop a plan for action.

Risk-takers: They approach unfamiliar situations without anxiety and have the confidence and independence of spirit to explore new roles, ideas and strategies. They are courageous in defending that in which they believe.

Knowledgeable: They have spent time exploring themes which have global relevance and have acquired a critical mass of significant knowledge. They can take more than one idea or subject and interlink it with others harmoniously. They also have knowledge of themselves - of their history, identity, desires and behaviour patterns. They can set and work towards their personal targets for change.

Principled: They have integrity, honesty, a sense of fairness / justice and a sound grasp of moral reasoning.

Caring: They show sensitivity towards the needs and feelings of others. They have a sense of personal commitment to action and service.

Open-minded: They respect the views, values and traditions of other individuals and cultures and are accustomed to seeking and considering a variety of perspectives. They have confidence in the loyalty, strength and veracity of other people.

Well-balanced: They understand the importance of physical and mental balance and personal well-being.

Reflective: They can look within to begin a process of personal change. They give thoughtful consideration to their own learning and analyse their personal strengths and weaknesses constructively.

Collaborators: They can work with others towards a common goal. They can identify their own and others' talents and build on them. They can cooperate to make change and to better their own and others' lives.

FIGURE 1: MKOMBOZI'S BELIEFS & VALUES PARADIGM

Language Perspective

We recognise that language, our major means of thinking and communicating, is fundamental to learning. It underpins and permeates the entire curriculum.

Emphasis is placed, not only on learning language, but also on learning *about* language and *through* language. An appreciation of the richness of language, including a love of literature, should be nurtured.

Traditionally, language is regarded in a fragmented way, with separation of the strains within language (i.e. listening, speaking, writing, reading). Language is also treated separately from other areas within the curriculum. Mkombozi's approach to language seeks to decrease such fragmentation. While the four communication strands of listening, speaking, writing and reading can be observed separately, they are interrelated and interactive, with learning in one supporting learning in another. In this sense, every teacher is a language teacher.

Notably, language does more than promote cognitive growth - development of the mother tongue language is crucial for maintaining cultural identity and emotional stability. Acquisition of more than one language enriches personal growth and helps to facilitate international understanding.

BELIEFS + VALUES

Mathematics Perspective

Our rapidly changing technological world is placing ever increasing demands on the mathematical skills and understanding of its citizens. It is clear that the role of mathematics in the curriculum is as a service discipline, providing a global "language" through which we make sense of the world around us.

In our view, the failure of traditional mathematics curricula to teach the discipline well stems from the attempt to impart "a body of knowledge" (rather than a "way of thinking") to students. We believe students acquire mathematical understanding by acquiring and constructing their own meaning, concept by concept, through ever increasing levels of abstraction.

The power of mathematics lies in its potential as a highly effective tool for analysing problems. Thus, Mkombozi wants students to become fluent users of this language and to regard mathematics as a way of thinking rather than as a fixed body of knowledge.

Moreover, it is fundamental to our philosophy that mathematics must be taught in relevant, realistic contexts, since that is how it will be employed.

In this way, students can appreciate the intrinsic fascination of mathematics and learn to explore the world through its unique perceptions.

BELIEFS + VALUES

BELIEFS + VALUES

Science / Technology Perspective

Science is viewed by Mkombozi as the exploration of behaviour and the inter-relationships among the natural, physical and material worlds using the rational process of scientific inquiry. Technology is viewed as the application of the principles of science.

We recognise the importance of science, since it is universal and cuts across and transcends gender, cultural, linguistic and national bias / boundaries.

The inclusion of science and technology within the curriculum leads students to an appreciation and awareness of the world as it is viewed through the eyes of the scientist. It develops an understanding of, and competence in, using the facilities of a rapidly changing scientific and technological world, while gaining a positive appreciation of science and technology and its contribution to the quality of life today.

The science / technology learning process, by encouraging hands-on experience and inquiry learning, enables the individual to make informed and responsible decisions, not only in science and technology but in other areas of life as well.

The science / technology learning process encourages children to build their practical competence and builds their interest for scientific discoveries.

BELIEFS + VALUES

Social Studies Perspective

Social studies is viewed by Mkombozi as the study of people in relation to their past, their environment and this society. It helps students to develop their personal, family, ethnic and cultural identities, to make formed and reasoned decisions about their classroom, the school and the world, and to understand themselves in relation to the past, the environment and society. Social studies teaches tolerance of social and gender. Emphasis is placed on the reduction of prejudice and discrimination in the classroom, the school and the world. Social studies is grounded in a strong and unequivocal stand for universal human rights, justice and equality. The pluralistic nature of communities within and among nations, and the relationships between local and global concerns and issues, are addressed through the study of Tanzania and the culture of people not directly represented in Mkombozi's community.

Social studies is an integrated area of inquiry. The perspectives of a number of disciplines contribute to our understanding of human activity. In our curriculum, these disciplines have been grouped as follows:

History: Students develop an understanding of themselves and their society in relation to the past, its influences on the present and its implications for the future.

Geography: Students develop a sense of their physical world, where they are in it and the variety of human activity.

Society: Students develop an understanding of how human values shape social systems.

1.2 Can Mkombozi's NFE be applied to older / younger / special needs children?

The NFE documented here offers a foundation whereby children learn to live with others, develop ethical behaviour and build the skills, knowledge and attitudes that enable them to become enquiring learners. Although Mkombozi tends to work with children between the age of 5 and 16, our NFE approach provides a necessary foundation for any young person and, consequently, can be delivered to an older youth who has missed out on these vital building blocks (because of inability to access education). Likewise, the approach can be delivered to children as young as 3 years, since it is based on the sound principles of early childhood development. Furthermore, by focussing on a child's individual needs, the programme is also suitable for children with emotional and behavioural difficulties as well as those who are capable of being academically stretched.

Mkombozi works with street children, many of whom have been victims of abuse and trauma. Many of them demonstrate the following:

Possible effects of sexual abuse:

- Age inappropriate, sexualised behaviour.
- Physical indicators (in genital and anal areas).
- Behavioural indicators (general and sexual) which must be interpreted with regard to the child's level of functioning and development.

Possible effects of physical abuse:

- Bruises, burns, sprains, dislocations, bites, cuts.
- Improbable excuses given to explain injuries.
- Injuries which have not received medical attention.
- Injuries in places not normally exposed to falls / injury.
- Repeated urinary infections.
- Unexplained stomach pains.
- Refusal to discuss injuries.
- Withdrawal from physical contact.
- Arms and legs kept covered in hot weather.
- Fear of returning home or of parents being contacted.
- Showing wariness or distrust of adults.
- Self-destructive tendencies.
- Being aggressive towards others.
- Being very passive and compliant.
- Chronic running away.

Possible effects of emotional abuse:

- Physical, mental and emotional development is delayed.
- High anxiety or persistent fatigue.
- Showing delayed speech or sudden speech disorder.
- Fear of new situations.
- Low self-esteem.
- Inappropriate emotional responses to painful situations.
- Extremes of passivity or aggression.
- Drug or alcohol abuse.
- Chronic running away.
- Compulsive stealing.
- Obsessions or phobias.
- Sudden under-achievement or lack of concentration.
- Attention-seeking behaviour.
- Lying.

Possible effects of neglect:

- Frequent hunger or stealing / gorging food.
- Failure to grow.
- Poor personal hygiene.
- Constant fatigue.
- Inappropriate clothing (e.g. summer clothes in winter).
- Frequent lateness or non-attendance at school.
- Untreated medical problems.
- Low self-esteem and / or poor social relationships.
- Compulsive stealing.
- Drug or alcohol abuse.

2. Knowledge

2.1 What is "curriculum"?

Mkombozi employs a broad and inclusive definition of "curriculum" which emerges from, and is comprised of, three inter-related elements:

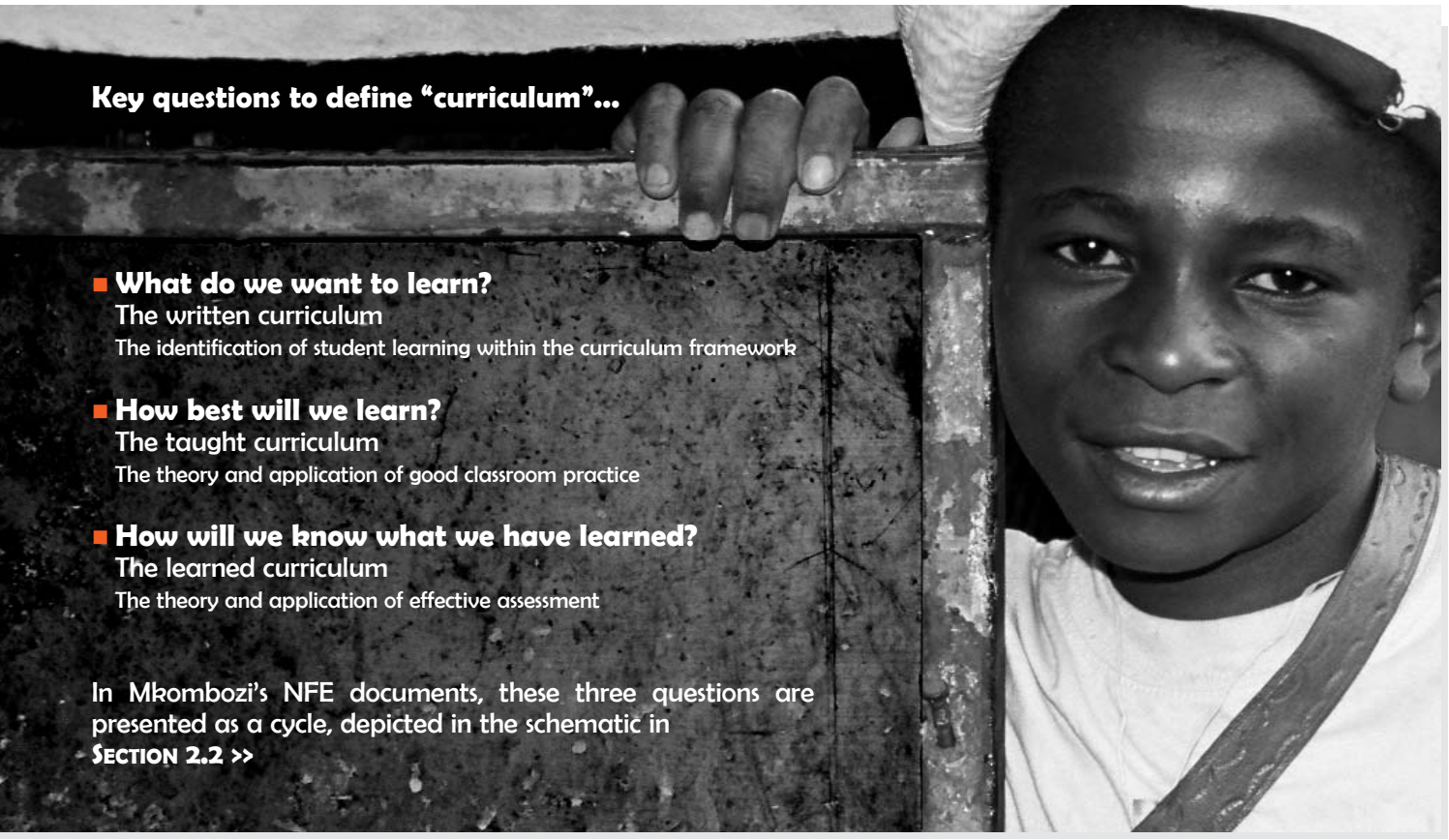
1. Student activities: Mkombozi's curriculum includes all student activities (academic and non-academic) for which the NFE programme takes responsibility, since they all have an impact on student learning.

2. Methodology and application: Given Mkombozi's commitment to continuous improvement, the development of the written curriculum - the expression of ideas on paper - is necessary, but this alone is not sufficient. The interpretation of these ideas into daily practice, by educators working in classrooms, is vital. Mkombozi therefore gives equal emphasis to methodology, to application, to suggestions for examining and improving our practice, and to the provision of in-service support.

3. Assessment strategies: Assessing the actual learning which takes place for each student is frequently neglected in traditional curricula. To Mkombozi, the development of a range of meaningful assessment strategies is seen as the focus of the learned curriculum, one which brings balance to our work and reminds us of its purpose.

In keeping with Mkombozi's commitment to inquiry, these definitional elements are expressed in the form of three open-ended questions (presented below), each of which compels us to think deeply about our own practice with regard to student learning. Note that Mkombozi chooses to use the pronoun "we" in each question, rather than referring directly to the students, for reasons which reflect our beliefs. While recognising that Mkombozi's primary responsibility is obviously for student learning, Mkombozi wishes to make clear its position that:

- In a school, which is a community of learners, everyone is a learner; thus, we as teachers must continue to learn, both about the content with which we are engaged and about our own practice.
- Presenting the questions in this form prompts us to present them in a similar way to students, therefore directly engaging them in their own learning.



Key questions to define "curriculum"...

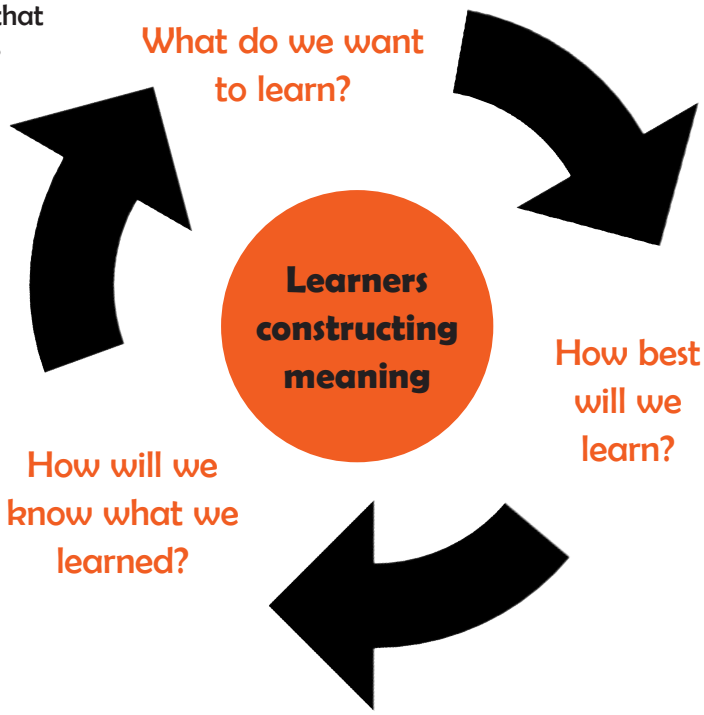
- **What do we want to learn?**
  The written curriculum
  The identification of student learning within the curriculum framework
- **How best will we learn?**
  The taught curriculum
  The theory and application of good classroom practice
- **How will we know what we have learned?**
  The learned curriculum
  The theory and application of effective assessment

In Mkombozi's NFE documents, these three questions are presented as a cycle, depicted in the schematic in **Section 2.2 >>**

2.2 Mkombozi's definition of curriculum schematic

The words at the centre of this diagram convey the belief that students construct their own meaning. Mkombozi is convinced by many of the principles of the constructivist approach to explaining learning. Put very simply, Mkombozi believes that students bring their prior knowledge to the learning situation and that they engage with the curriculum through the activities designed by the teacher.

In the context of this total learning environment, the students make sense of their own experiences or construct meaning. Our responsibility is to identify the students' prior knowledge, provide appropriate experiences, assess their new learning, and begin the cycle anew.



3. What do we want to learn?

3.1 The written curriculum

Mkombozi strives for a balance between the search for understanding, the acquisition of essential knowledge and skills, the development of positive attitudes and the opportunity for positive action. To achieve this balance, Mkombozi emphasises five essential elements of the written curriculum, presented below. In the pages which follow, each essential element is explored more fully so that the reader may gain an insight into the significance of each element, how and why its been selected and how it will be incorporated into classroom practice.

Essential elements of the written curriculum...

1. Concepts:	Powerful ideas which have relevance within and across the disciplines (subject areas) and which students must explore and re-explore in order to develop understanding.
2. Knowledge:	Significant, relevant, subject matter we wish the students to explore and know about.
3. Skills:	Those things the students need to be able to do to succeed in a changing, challenging world.
4. Attitudes:	Dispositions which are expressions of fundamental values, beliefs and feelings about learning, the environment and people.
5. Action:	Demonstrations of deeper learning in responsible behaviour through positive action and service, a manifestation in practice of the essential elements.

Mkombozi's NFE is based upon and derived from the Primary Years Programme (PYP) of the International Baccalaureate Organisation (IBO)...

The IBO is "a recognised leader in the field of international education, encouraging students to be active learners, well-rounded individuals and engaged world citizens. Founded in 1968, the IBO currently works with 1,962 schools in 124 countries to develop and offer challenging programmes to over 519,000 students aged 3 to 19 years". The PYP is one of three programmes offered by the IBO. It is designed for students aged 3 to 12 and it "focuses on the total growth of the developing child, touching hearts as well as minds and encompassing social, physical, emotional and cultural needs in addition to academic development."

Learn more @ www.ibo.org

4. Concepts: What do we want students to understand?

4.1 Concepts as an essential element of the curriculum

The decision to structure the curriculum around important concepts or "big ideas" is driven by these beliefs:

- A good curriculum offers a balance between the acquisition of essential skills and knowledge and the search for meaning. Education is without meaning if students never really understand.
- Education for understanding, with a focus on important ideas, has often been sacrificed to a superficial introduction to isolated facts and skills. The pressure to cover the syllabus has resulted in many students leaving school without ever really understanding.
- By starting with the students' prior knowledge, and by confronting and extending their early conceptions, we begin to promote real understanding.
- The exploration and re-exploration of concepts leads students towards a sense of the essence of each discipline and an appreciation of ideas which transcend disciplinary barriers. If concepts are approached from a range of perspectives, students can gradually arrive at a deeper understanding.
- Transdisciplinary units structured around concepts provide a context in which students can understand and, at the same time, acquire essential knowledge, skills and attitudes.

In summary then, the driving force at the heart of Mkombozi's curriculum is a set of powerful ideas, or concepts, which we believe have great significance within each discipline and which transcend the disciplinary barriers. These concepts provide a structure for the exploration of significant content. In the course of this exploration, students acquire and practice essential skills and reach a deep understanding of the concepts.

4.2 Is it possible to identify a set of concepts around which to structure a curriculum?

Several years of research have been carried out involving the analysis of curricular models in use in different national systems and international schools. This research has focussed on, firstly, whether or not there was a consensus on a set of concepts in which each has universal significance, and secondly, the status and role given to concepts in the various curriculum models. The results indicate there are clusters of important ideas which can be grouped under a set of overarching concepts, each of which has major significance, regardless of time and place, within and across disciplines.

As a result, the curriculum is structured around a set of ideas or key concepts. It is realised that these are not, in any sense, the only concepts worth exploring. On the contrary, the concepts which have been selected serve more as labels for clusters of interesting ideas. Taken together, they form a powerful set of ideas which drive the teacher / student constructed research projects, the units of inquiry, which lie at the heart of the Mkombozi curriculum.

4.3 Which concepts are chosen and why?

Mkombozi follows the Primary Years Programme (PYP) of the International Baccalaureate Organisation which has eight concepts, each of which is highly significant to the design of a transdisciplinary curriculum. These concepts are:

Form ■ **Function** ■ **Causation** ■ **Change** ■ **Connection** ■ **Perspective** ■ **Responsibility** ■ **Reflection**

Each concept is presented in FIGURE 2 ON P.11, including: a generic explanation (so that everyone using the curriculum is working with a common understanding of terms); the reasons for the selection of the concept as being important for our work with students; some of the ideas from the discipline areas which relate to this concept (provided as a springboard for the generation of further research questions); and, the key question which arises from this concept, presented in the form most useful for driving inquiry.

Note that each key question is presented in its most generic form (e.g. "what is it like?"); however, when working on a unit with a particular focus (e.g. geographical), more specific, discipline-related questions will be framed (e.g. "what is this place like?").

FIGURE 2: TRANSDISCIPLINARY CURRICULUM CONCEPTS

Form

Definition: The understanding that everything has a form with recognisable features which can be observed, identified, described and categorised.

Rationale: The ability to observe, identify, describe and categorise is fundamental to human learning within and across all disciplines.

Related concepts: properties, structure, features, categories, patterns

Key question: What is it like?

Connection

Definition: The understanding that we live in a world of interacting systems in which the actions of any individual element affects others.

Rationale: Nothing exists in a vacuum but, rather, as an element in a system. Relationships within and among systems are often complex and changes in one aspect will have consequences. We must consider the short and long-term impact of our actions at personal, community and environmental levels.

Related concepts: systems, relationships, networks

Key question: How is it connected to other things?

Function

Definition: The understanding that everything has a purpose, a role or a way of behaving which can be investigated.

Rationale: The ability to analyse function, role, behaviour and the ways in which things work, is fundamental to learning within and across all disciplines.

Related concepts: behaviour, operations, pattern, role, systems

Key question: How does it work?

Perspective

Definition: The understanding that knowledge is not constructed from the perspective of any one particular discipline, individual or group.

Rationale: It is important to develop the student's disposition to: reject simplistic, biased interpretations; seek and consider the views of others; develop defensible interpretations.

Related concepts: subjectivity, fact, opinion, bias, prejudice, empathy

Key question: What are the points of view?

Causation

Definition: The understanding that things don't just happen, there are causal relationships at work and actions have consequences.

Rationale: It is important to prompt students to ask "why?" and to help them recognise that actions and events have reasons and consequences. Analysis of causal relationships is significant within and across all disciplines.

Related concepts: consequences, sequences, patterns, impact

Key question: Why is it like it is?

Responsibility

Definition: The understanding that we are not passive observers of events, but that we can and must make choices and that, by doing so, we can make a difference.

Rationale: It is important to develop the student's disposition to identify and assume responsibility and to take positive action.

Related concepts: rights, duty, citizenship, values, justice, initiative

Key question: What is our responsibility?

Change

Definition: The understanding that change is the process of movement from one state to another.

Rationale: Change is universal and inevitable. It is particularly relevant to vulnerable children, in whose lives change is often frequent and inescapable, and who are growing up in a world in which the pace of change is accelerating.

Related concepts: adaptation, modification, cycles, sequence

Key question: How is it changing?

Reflection

Definition: The understanding that there are different ways of knowing and it is important to reflect on our conclusions (i.e. methods of reasoning employed and quality of the evidence).

Rationale: It challenges the students to examine their evidence, methods and conclusions. It extends their thinking into the higher order of metacognition and encourages them to be rigorous in examining evidence for potential bias or inaccuracy.

Related concepts: metacognition, reason, evidence, introspection, reliability

Key question: How do we know?

4.4 How do the concepts drive the curriculum?

Mkombozi is committed to the principle that structured, purposeful inquiry is a powerful vehicle for "real learning" - learning which promotes genuine understanding and which challenges the students to engage with important ideas. Hence, Mkombozi maintains a commitment to a concept-driven curriculum. This means:

- Since Mkombozi is committed to inquiry as a vehicle for learning, the natural way to present the key concepts is in the form of broad, open-ended questions.

- Presented in this way, the concepts liberate the thinking of teachers and students, suggesting a range of further questions, each one leading to productive lines of inquiry.

- When viewed as a set of questions, the concepts form a research tool that is both manageable and open-ended. The concepts are not only important, they also provide a key - a way into a body of knowledge through structured inquiry. They place no limits on breadth of knowledge or depths of understanding and therefore provide access to every student, regardless of particular aptitudes.

- These questions should not be interpreted in any restrictive sense - as *the only* questions, or to be used in strict order, or to be given equal weight in every unit. Rather, they represent an approach, a springboard, an introduction to a way of thinking about teaching and learning.

Therefore, the concepts which are central to the curriculum are presented in the form of key questions. It is these questions, used flexibly by teachers and students when planning an inquiry-based unit, which shape that unit, giving it direction and purpose. It is in this sense that the key questions, and the ideas to which they relate, are said to drive the Mkombozi curriculum. It is also recognised that these concepts have differing applications and interpretations within each discipline. The concepts, with generic and discipline-specific definitions are presented in Figure 3 on p.13.

5. Knowledge: What do we want students to know?

5.1 Knowledge as an essential element of the curriculum

The debate in educational circles on what constitutes essential knowledge will probably be endless. It is inappropriate to attempt to define any narrow, fixed body of knowledge as the essential content which every student should know. Accepting this, the task has been approached from a different perspective. Rather than defining a fixed syllabus, we have set out to identify themes / areas of knowledge that:

- hold significance for all students and all cultures;
- offer opportunities to explore knowledge (which is of genuine importance in understanding the human condition);
- address fields of knowledge which form the traditional disciplines but present these in a way which transcends these disciplines, therefore facilitating transdisciplinary planning and teaching.

These themes, as well as the student profile, provide the organising structure for Mkombozi's framework of content, or "programme of inquiry" (see Figure on p.14). Mkombozi suggests each theme is worthy of consideration by all schools and that, taken together, they provide a basis for individuals in a school to jointly develop a transdisciplinary programme of inquiry that meets their students' needs.

When selecting individual units, structured around the programme of inquiry, the following criteria are helpful in ensuring that each unit of inquiry is:

- **significant** (i.e. contributing to an understanding of meaningful, important life experiences and therefore to an understanding of the essence of the overall theme);
- **relevant** (i.e. linked to the students' prior knowledge and experience and therefore placing learning in a more meaningful context for some students);
- **engaging** (i.e. having the potential to interest the students and actively engage them in their own learning)
- **challenging** (i.e. having the potential to extend the prior knowledge and experience of the students)

Teachers should also explore the possibilities for links between the units taught at different age bands so that the programme is articulated both vertically and horizontally.

FIGURE 3: CONCEPT DEFINITIONS BY DISCIPLINE

	GENERIC	LANGUAGE	MATHEMATICS	SCIENCE / TECH.	SOCIAL STUDIES
What is it like? (Form)	Everything has a form with recognisable features which can be observed, identified, described and categorised.	Every language has a form which makes it unique.	The recognition, categorisation and description of patterns and other information.	Most things have a form or a shape with an outward or visible manifestation and an internal structure.	Events, people and places have recognisable features which distinguish them in time, space or social order.
How does it work? (Function)	Everything has a purpose, a role or a way of behaving which can be investigated.	Language is used for a variety of purposes depending on the circumstances.	The examination of systems, mechanics, relationships, components and patterns.	The special activities, properties or purposes, natural or endowed, of a creature or thing.	How events or relationships happen among people or the interaction between people and the environment.
Why is it like it is? (Causation)	Things do not just happen. There are causal relationships at work and actions have consequences.	Language has an effect on, and is affected by, everything.	The consideration of organisation, process, application and consequences of actions.	The effect bought about by an intended or unintended action or reaction.	Human actions have causes and consequences which affect how people interact with each other and their environment.
How is it changing? (Change)	The process of movement from one state to another. It is universal and inevitable.	Language is not static; it changes constantly.	Looking for evidence of change, analysing change and making predictions.	Change is an inevitable aspect of the physical world as things become different or pass from one form or phase to another. Change can be natural or caused / accelerated by outside influences.	Understanding the nature of social change (individual, group, cultural or institutional), and how and why humans, over time and space, effect changes or respond.
How is it connected to other things? (Connection)	We live in a world of interacting systems in which the actions of any individual element affects others.	Language is central to life. It is the major connecting system within, between and among all societies.	The examination of systems / strategies to identify different kinds of relationships within and beyond mathematics.	The natural world is full of interacting systems in which parts and sets depend on each other to form a working whole.	The social world comprises interacting systems wherein actions of individuals / groups affect others / the environment. People, places and events are part of an elaborate web of interdependent human systems.
What are the points of view? (Perspective)	"Knowledge" represents perspectives. Different perspectives lead to different understandings and interpretations. Perspectives may be individual, cultural or disciplinary.	Language can be interpreted and meaning expressed in different ways.	In mathematics this means "what are the different ways of looking at it?" It's about developing awareness and respect for varied interpretations and critical evaluation of explanation, strategies and solutions.	Events and findings can be interpreted differently, depending on knowledge, experience and motives. The difference between empirically proven facts and supposition must be emphasised.	There is no right way of knowing. Perspective is influenced by other people, by our emotions, past experiences, needs and desires as well as by the influences of our culture and the disciplines.
What is our responsibility? (Responsibility)	We are not passive observers of events. We can and must make choices. By doing so we can make a difference.	Language is powerful and can have a profound effect, both positive and negative. Therefore it must be used responsibly	Understanding the importance of accuracy and appreciating the obligation to gather, interpret, report and apply data with honesty.	We have a responsibility to our world. This involves being aware of how scientific knowledge can be used to improve or worsen the quality of life for all living things. Responsibility entails action as well as awareness.	People are not neutral and must consider their individual responsibilities towards their society and towards events and social issues.
How do we know? (Reflection)	There are different ways of knowing. It is important to reflect on our conclusions, in terms of reasoning and the quality of evidence.	Language is the means by which we reflect on our experiences and knowledge.	Being able to communicate how we have come to understand an idea, concept or skill.	We must consciously reflect on, and be able to describe, how we gain our knowledge and attitudes.	Reflecting on the past, places and peoples involves introspection, empathy, and the evaluation of sources for objectivity, omission and bias.

5.2 The "organising themes" of Mkombozi's "programme of inquiry"

1. **An inquiry into**

Who we Are

An exploration of the nature of self; of our beliefs and values; of personal, physical, mental, social and spiritual health; of our families, friends, communities and cultures; of our rights and responsibilities; of what it means to be human.

2. **An inquiry into**

Where we Are in Place and Time

An exploration of our orientation in place and time; of our personal histories; of history and geography from local and global perspectives; of our homes and journeys; of the discoveries, explorations and migrations of humankind; of the contributions of individuals and civilizations.

3. **An inquiry into**

How we Express Ourselves

An exploration of the ways in which we discover and express our nature, ideas, feelings, beliefs and values through language and the arts.

4. **An inquiry into**

How the World Works

An exploration of the physical and material world; of natural and human-made phenomena; of the world of science and technology.

5. **An inquiry into**

How we Organise Ourselves

An exploration of human systems and communities; of the world of work, its nature and its value; of employment and unemployment and their impact on us and the world around us.

6. **An inquiry into**

Sharing the Planet

An exploration of our rights and responsibilities as we strive to share finite resources with other people and with other living things; of communities and of the relationships within and between them.

5.3 Mkombozi's "programme of inquiry" for SKILLED learners

1. Who we are

SAME AND DIFFERENT

Central idea:
Our differences make us unique and of equal value.

Inquiry into:
~ similarity & difference
~ causes of conflict between people (beliefs, race, religion, age, status)
~ discrimination, racism, prejudice and segregation

Student profile:
~ open minded
~ well-balanced

Transdisciplinary skills:
~ social skills

Concepts:
~ causation
~ perspective
~ connection

Attitudes:
~ empathy
~ tolerance
~ appreciation

2. Where we are in place & time

TANZANIA IN THE WORLD

Central idea:
Tanzania has a unique position in the world and makes particular contributions.

Inquiry into:
~ the Tanzania profile
~ Tanzania and its neighbours
~ Tanzania in Africa
~ Tanzania in the world

Student profile:
~ knowledgeable
~ inquirers

Transdisciplinary skills:
~ research

Concepts:
~ form
~ connection

Attitudes:
~ independence
~ appreciation

3. How we express ourselves

TRIBAL AND ETHNIC EXPRESSIONS

Central idea:
We express our culture through our values and our beliefs.

Inquiry into:
~ different forms of cultural expression (dance, dress, song, food)
~ tribes, groups, religions

Student profile:
~ communicators
~ risk takers

Transdisciplinary skills:
~ communication

Concepts:
~ function
~ connection
~ perspective

Attitudes:
~ confidence
~ appreciation
~ enthusiasm

4. How the world works

ENVIRONMENT AND ECOSYSTEMS

Central idea:
Environments have a powerful impact on the life forms within them.

Inquiry into:
~ types of environments
~ human responsibility towards the environment
~ life in urban and rural areas and their impact on the environment
~ interdependence among living things

Student profile:
~ caring
~ knowledgeable

Transdisciplinary skills:
~ self-management

Concepts:
~ responsibility
~ connection

Attitudes:
~ commitment
~ integrity

5. How we organise ourselves

TANZANIA AS A DEVELOPING COUNTRY

Central idea:
Tanzanians have potential and opportunity to improve their lives.

Inquiry into:
~ people, policies and leadership in Tanzania
~ resources that can boost Tanzania's economy
~ Tanzanians' relationships with other parts of the world

Student profile:
~ inquirers
~ reflective

Transdisciplinary skills:
~ research

Concepts:
~ responsibility
~ connection

Attitudes:
~ commitment
~ interdependence
~ creativity

6. Sharing the planet

NATURAL RESOURCES

Central idea:
Human sustainability depends on how we use / preserve natural resources.

Inquiry into:
~ ways of preserving natural resources
~ importance of natural resources
~ renewable and non-renewable resources
~ the sharing of natural resources

Student profile:
~ thinkers
~ principled

Transdisciplinary skills:
~ thinking

Concepts:
~ perspective
~ responsibility
~ reflective

Attitudes:
~ integrity
~ empathy
~ commitment

5.4 Mkombozi's "programme of inquiry" for DEVELOPING learners

1. Who we are

WHO I AM

Central idea:
What I do, believe, say and value, shows who I am.

Inquiry into:
~ my personality
~ beliefs and values (including religious)
~ cultures in the community
~ friends and friendships

Student profile:
~ well-balanced
~ caring

Transdisciplinary skills:
~ self-management

Concepts:
~ function
~ connection
~ perspective

Attitudes:
~ appreciation
~ respect
~ confidence

2. Where we are in place & time

PEOPLE WHO CHANGE THE WORLD

Central idea:
The contributions of individual people have helped to change the world and will continue to do so.

Inquiry into:
~ people who have changed the world
~ types of change (social, economic)
~ leaders
~ heroes

Student profile:
~ reflective
~ principled
~ risk-takers

Transdisciplinary skills:
~ social

Concepts:
~ change
~ responsibility
~ causation

Attitudes:
~ confidence
~ commitment
~ integrity

3. How we express ourselves

BELIEFS AND VALUES

Central idea:
People have different beliefs and values that affect the way they live.

Inquiry into:
~ beliefs and values (groups, ages, status)
~ expressing our feelings
~ similarities
~ differences
~ celebration and conflict

Student profile:
~ communicator
~ knowledgeable

Transdisciplinary skills:
~ communication

Concepts:
~ form
~ connection
~ function

Attitude:
~ cooperation

4. How the world works

HEALTH AND DISEASE

Central idea:
To keep our bodies healthy and free from disease we need to understand disease prevention and healthy living.

Inquiry into:
~ indicators of healthy and unhealthy bodies
~ causes of diseases
~ preventative medicine and health care
~ responsible use of medication.

Student profile:
~ well-balanced
~ knowledgeable

Transdisciplinary skills:
~ self-management

Concepts:
~ causation
~ responsibility

Attitudes:
~ commitment
~ appreciation

5. How we organise ourselves

LAWS, GOVERNMENTS AND POLITICS

Central idea:
People make rules and laws in order to live peacefully.

Inquiry into:
~ laws
~ government
~ politics
~ leadership
~ boundaries
~ peace

Student profile:
~ principled
~ open-minded

Transdisciplinary skills:
~ research

Concepts:
~ causation
~ form
~ responsibility

Attitudes:
~ commitment
~ respect

6. Sharing the planet

POVERTY (RICH AND POOR)

Central idea:
The world's resources and opportunities are not shared equally among people. We need opportunities to make a better living.

Inquiry into:
~ causes of poverty
~ available opportunities
~ efficient use of available resources
~ sharing opportunities

Student profile:
~ inquirers
~ thinkers

Transdisciplinary skills:
~ research

Concepts:
~ causation
~ connection
~ responsibility

Attitudes:
~ cooperation
~ empathy

5.5 Mkombozi's "programme of inquiry" for EMERGING learners

1. Who we are

FAMILIES

Central idea:
Within families we have roles and learn the basic skills of life.

Inquiry into:
~ kinds of families
~ roles and responsibilities in families
~ generations and ancestors
~ things we learn in families

Student profile:
~ caring
~ open-minded

Transdisciplinary skills:
~ communication

Concepts:
~ responsibility
~ communication

Attitudes:
~ respect
~ commitment
~ appreciation

2. Where we are in place & time

A HOME FOR ALL

Central idea:
People live all over the world and they create homes wherever they live.

Inquiry into:
~ types of homes
~ "houses versus homes"
~ buildings, structures and materials
~ lifestyles impact on homes (nomadic, sedentary)

Student profile:
~ well balanced
~ reflective

Transdisciplinary skills:
~ social skills
~ self-management

Concepts:
~ reflection
~ perspective

Attitudes:
~ independence
~ confidence

3. How we express ourselves

STORIES

Central idea:
All people learn about the world and express themselves through stories.

Inquiry into:
~ communication of history through stories (families, customs)
~ forms of communication
~ acting out and telling stories
~ messages in stories

Student profile:
~ communicators
~ open-minded
~ thinkers

Transdisciplinary skills:
~ social skills

Concepts:
~ form
~ causation

Attitudes:
~ creativity
~ confidence
~ enthusiasm

4. How the world works

LIVING THINGS

Central idea:
There are many kinds of living things on our planet, each with their own unique needs.

Inquiry into:
~ plants and animals
~ basic needs of all living things
~ favourable conditions for survival of all things (natural / man-made)
~ taking care of plants and animals

Student profile:
~ knowledgeable
~ caring
~ principled

Transdisciplinary skills:
~ research

Concepts:
~ responsibility
~ connection

Attitudes:
~ curiosity
~ empathy
~ appreciation

5. How we organise ourselves

HUMAN RIGHTS

Central idea:
All people have the same rights, which are recognised internationally.

Inquiry into:
~ human rights and child rights
~ the responsibility of having rights
~ consequences of our actions
~ peace, harmony, fairness, justice

Student profile:
~ risk takers
~ caring
~ principled

Transdisciplinary skills:
~ thinking

Concepts:
~ connection
~ responsibility
~ reflection

Attitudes:
~ confidence
~ integrity
~ commitment
~ empathy

6. Sharing the planet

WATER

Central idea:
Water is essential to all living things but it is not shared equally.

Inquiry into:
~ sources and uses of water
~ clean drinking water
~ providing clean water to all people
~ water and technology

Student profile:
~ inquirers
~ knowledgeable
~ caring

Transdisciplinary skills:
~ thinking

Concepts:
~ form
~ responsibility
~ change

Attitudes:
~ cooperation
~ curiosity
~ empathy
~ respect

6. Skills: What do we want students to be able to do?

6.1 Skills as an essential element of the curriculum

The search for understanding is central to the beliefs of this NFE programme. However, the emphasis on developing conceptual understanding does not exclude the importance of developing skills. The construction of meaning (and therefore, understanding) is complemented by the students acquisition and application of a range of skills. These skills are best developed in the context of meaningful situations such as those offered by the units of inquiry.

In order to conduct purposeful inquiry and to be prepared for both further education and life beyond school, students need to master a whole range of skills beyond those normally referred to as "basic". These skills transcend the individual disciplines.

6.2 Which transdisciplinary skills are emphasised?

Social skills

- **Accepting responsibility:** Taking on and completing tasks in an appropriate manner; being willing to assume a share of responsibility.
- **Respecting others:** Listening sensitively to others; making decisions based on fairness and equality; recognising that others' beliefs, view points, religions and ideas may differ from one's own; stating one's opinion without hurting others.
- **Cooperating:** Working cooperatively in a group; being courteous to others; sharing materials; taking turns.
- **Resolving conflict:** Listening carefully to others; compromising; reacting reasonably to the situation, accepting responsibility; being fair
- **Group decision-making:** Listening to others; discussing ideas; asking questions; working towards and obtaining consensus.
- **Adopting a variety of group roles:** Understanding what behaviour is appropriate in a given situation and acting accordingly; being a leader in some circumstances, a follower in others.

Communication skills

- **Communication:** Listening; listening to directions; listening to others; listening to information.
- **Speaking:** Speaking clearly; giving oral reports to small and large groups; expressing ideas clearly and logically; stating opinions.
- **Reading:** Reading a variety of sources for information and pleasure; comprehending what has been read; making inferences and drawing conclusions.
- **Writing:** Recording information and observations; taking notes and paraphrasing; writing summaries; writing reports; keeping a journal or record.
- **Non-verbal communication:** Recognising the meaning of visual and body language (kinaesthetic communication).

Thinking skills

- **Acquisition of knowledge:** Gaining specific facts, ideas, vocabulary; remembering in a similar form.
- **Comprehension:** Grasping meaning from material learned; communicating and interpreting learning.
- **Application:** Making use of previously acquired knowledge in practical or new ways.
- **Analysis:** Taking knowledge or ideas apart; separating into component parts; seeing relationships; finding unique characteristics.
- **Synthesis:** Combining parts to create wholes; creating, designing, developing and innovating.
- **Evaluation:** Making judgements or decisions based on chosen criteria; standards and conclusions.
- **Dialectical thought:** Thinking about 2 or more different points of view at the same time; understanding both points of view; being able to construct an argument for either point of view based on knowledge of the other; realising that others can also take one's own point of view.
- **Metacognition:** Analysing one's own and other's thought processes; thinking about thinking; thinking about how one thinks and how one learns.

Research skills

- **Formulating questions:** Identifying something one wants or needs to know and asking compelling and relevant questions that can be researched.
- **Observing:** Using all the senses to notice relevant details.
- **Planning:** Developing a course of action; writing an outline; devising ways of finding out necessary information.
- **Collecting data:** Gathering information from a variety of sources (e.g. maps, polls, surveys, direct observation, resource books, films, people, exhibitions).
- **Recording data:** Describing and recording observations, by drawing, note taking, making charts, tallying, writing statements.
- **Organising data:** Sorting and categorising information; arranging into understandable forms (e.g. narratives, tables, timelines, graphs and diagrams).
- **Interpreting data:** Drawing conclusions from relationships and patterns which emerge from organised data.
- **Presenting research findings:** Effectively communicating what has been learned; choosing appropriate media.

Self-management skills

- **Gross motor skills:** Exhibiting skills in which groups of large muscles are used and the factor of strength is primary.
- **Fine motor skills:** Exhibiting skills in which precision in delicate muscle systems is required.
- **Spatial awareness:** Displaying a sensitivity to the position of objects in relation to oneself and each other.
- **Organisation:** Planning and carrying out activities effectively.
- **Time management:** Using time effectively and appropriately.
- **Safety:** Engaging in personal behaviour which avoids placing oneself or others in danger or risk.
- **Healthy lifestyles:** Making informed choices to achieve a balance in nutrition, rest, relaxation and exercise; practicing appropriate hygiene and self-care.
- **Codes of behaviour:** Knowing and applying appropriate rules or operating procedures of groups of people.
- **Informed choices:** Selecting an appropriate course of action or behaviour based on fact or opinion.

7. Attitudes: What do we want students to be able to feel?

7.1 Attitudes as an essential element of the curriculum

While recognising the importance of concepts, knowledge and skills, Mkombozi believes that these alone do not make an educated person. It is vital that we also focus on the development of positive attitudes towards people, the environment and learning.

Mkombozi does not believe it is effective to rely on these attitudes being fostered in an implicit way, as some form of hidden curriculum. It is essential that we address them consciously, professionally and explicitly within the written curriculum, that we design activities to promote positive attitudes, and that we consider attitudes when we design assessment strategies.

7.2 Which attitudes does Mkombozi encourage?

Appreciation
Appreciating the wonder and beauty of the world and its people.

Commitment
Being committed to learning, persevering and showing self discipline and responsibility.

Confidence
Feeling confident in their ability as learners, having the courage to take risks, applying what they have learned and making appropriate decisions and choices.

Cooperation
Cooperating, collaborating and leading / following as the situation demands.

Creativity
Being creative and imaginative in their thinking and in their approach to problems and dilemmas.

Curiosity
Being curious about the nature of learning and of the world, its people and cultures.

Empathy
Imaginatively projecting themselves into another's situation, in order to understand his / her thoughts, reasoning and emotions.

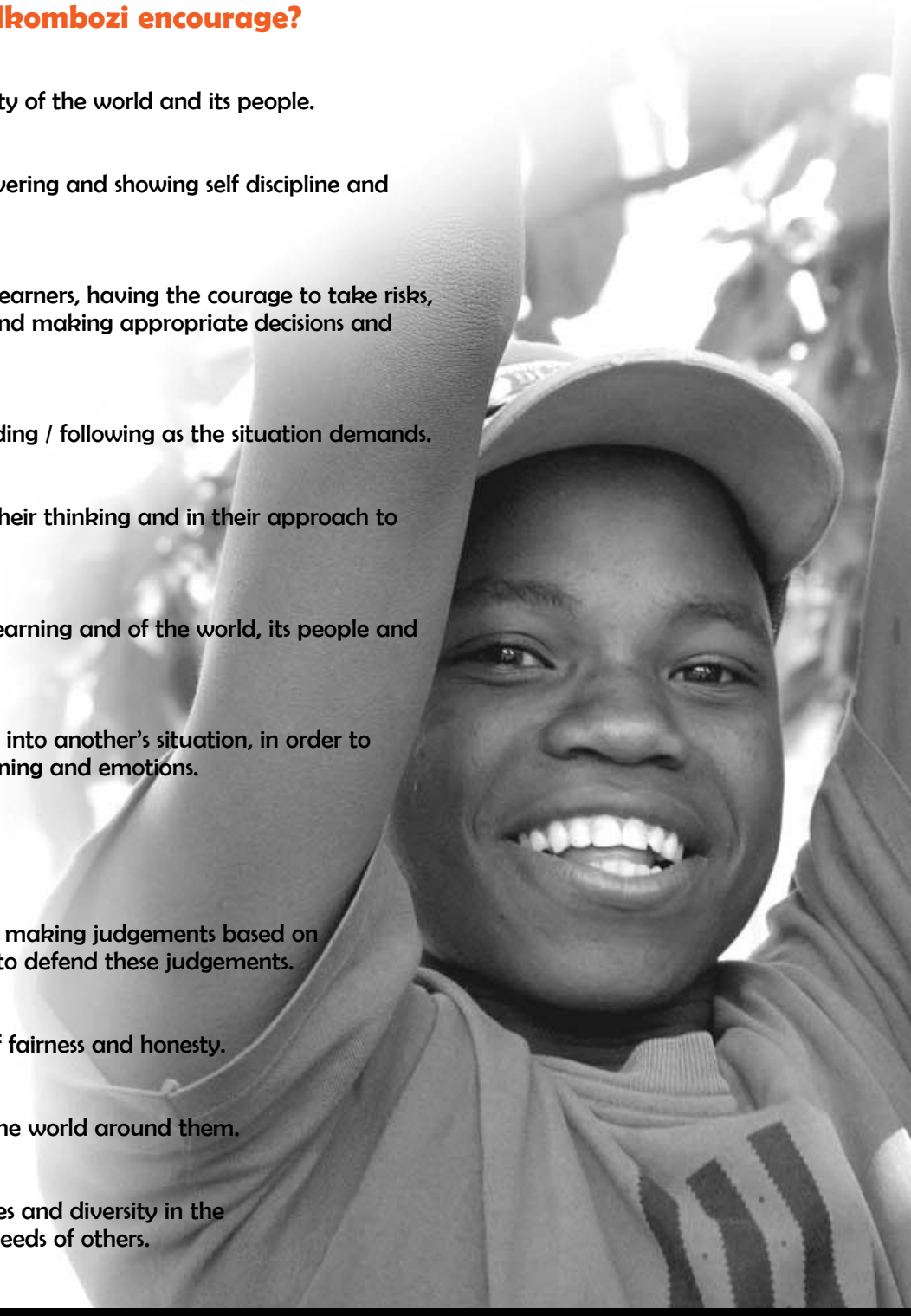
Enthusiasm
Enjoying learning.

Independence
Thinking and acting independently, making judgements based on reasoned principles and being able to defend these judgements.

Integrity
Having integrity and a firm sense of fairness and honesty.

Respect
Respecting themselves, others and the world around them.

Tolerance
Feeling sensitivity towards differences and diversity in the world and being responsive to the needs of others.



8. Action: What do we want students to be able to act?

8.1 Action as an essential element of the curriculum

Mkombozi believes that education must extend beyond intellectual attainment to include, not only responsible attitudes, but also thoughtful and appropriate action. Schools should meet the challenge of offering all learners the opportunity and the power to choose their actions, to act, and to reflect on these actions, in order to make a difference in and to the world. Mkombozi believes that every student, every year, has the right and duty to be involved in such action. In order to make the action component of the curriculum as powerful as possible in terms of student learning, Mkombozi advocates a cycle of involvement which provides students with opportunities to engage in meaningful action.

The action component of the curriculum involves service in the widest sense of the word: service to fellow students, to the staff and to the community. Through such service, students are able to grow both socially and personally, developing skills such as cooperation, problem solving, conflict resolution, creative and critical thinking. These actions are also ways in which students exhibit their commitment to the attitudes that we seek to build within the classroom.

8.2 Is it possible for students to identify appropriate actions in which to engage?

Effective actions do not need to be "big" actions. On the contrary, it begins at the most immediate and basic level: in the family, in the classroom, in the playground. Even very young children can have strong feelings about fairness and justice and we, as educators, can facilitate positive expressions of these opinions. Responsibility is one of the key concepts driving this curriculum and includes "What is our responsibility?" as a key question.

8.3 The "Action Learning Model"

The action component of Mkombozi's curriculum follows the "action learning model" - learning that employs a process of action, reflection on action (to generate new learning and insights) and then a commitment amongst community actors to plan new action. A widely adopted version of action learning views it as a spiral, or cyclical, process, depicted below. This involves:

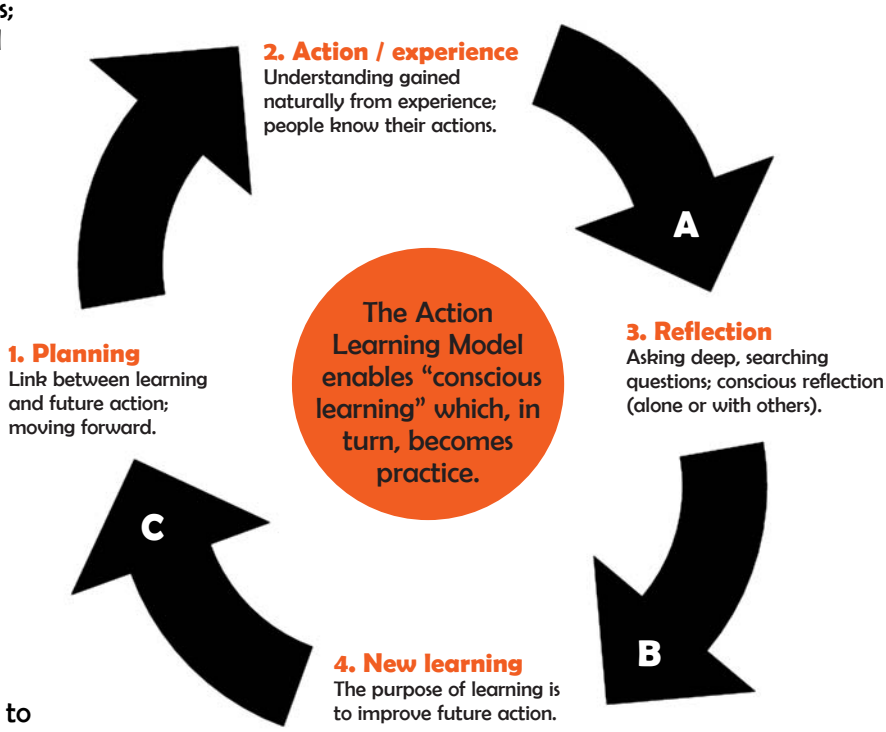
1. Planning a change;
2. Acting, observing what happens after the change;
3. Reflecting on processes and consequences;
4. Learning by planning further action and repeating the cycle with a view to improving future action.

Within this cycle, certain key processes must occur to move the individual from the point of action to the stage of new and applied learning. The processes are as follows:

A. When an person or group goes through an experience or action, there is a real need to consciously reflect on that event.

B. Reflection generates new learning that must be consciously captured in order to facilitate commitment to change.

C. New learning should be deliberately incorporated into ongoing planning so as to improve future action.



9. Synthesising the essential elements

9.1 Synthesising through the planner

There are five essential elements of the written curriculum: concepts, knowledge, skills, attitudes and action. For these elements to work in practice and drive the taught curriculum they must be brought together into a meaningful synthesis through planning, teaching and assessment. This approach to teaching and learning is centered around the design of transdisciplinary units of inquiry recorded on the Mkombozi NFE planner. Each of these units:

- Stands alone as a significant, relevant, challenging learning experience.
- Contributes to a coherent programme of inquiry framed in terms of themes of universal importance.
- Draws together elements of different disciplines into a meaningful whole.
- Is planned by teams of teachers working in collaboration, guided by a set of questions for teachers (these questions create the structure for the Mkombozi planners, provided for the purpose for collaborative unit design).
- Is driven by a set of key questions which are conceptually based.
- Involves students in a range of learning activities planned in response to the key questions.
- Builds on the prior knowledge of the students in the context of meaningful research.
- Is constructed and conducted in such a way as to promote positive attitudes.
- Requires students to examine their own level of responsibility and engage in positive action and service.

Through the units of inquiry, then, the essential elements are synthesised into a meaningful whole, a coherent approach to learning and teaching. Teachers and learners generate questions which have a conceptual base and are relevant to the context of the unit. Classroom activities are planned as a direct response to these questions. The classroom becomes a centre of structured inquiry through which students acquire and practice skills and build new knowledge. They do so in a climate that fosters positive attitudes and offers opportunities for constructive action. Assessment of student learning focuses on the quality of the students' research, the breadth and depth of their responses to the set of questions which is driving the unit.

9.2 Synthesising through the student profile

Mkombozi interprets its beliefs and values in the form of a student profile that outlines the aims of the curriculum. The student profile represents a synthesis of the essential elements; that is, students engage in structured inquiry wherein concepts, knowledge, skills, attitudes and action are all integrated. This is how students develop the attributes and dispositions described in the student profile.

As such, the student profile actually provides powerful goals in all disciplines and even serves as the goal for subject specific sections of the curriculum. **Figure 4 on p.22-23** expresses the student profile in the context of the disciplines. These subject specific profiles serve in the broadest sense as objectives for the curriculum.

10. How best will we learn?

10.1 What are the connections between the written curriculum and actual classroom practice (i.e. the taught curriculum)?

This is a curriculum in which classroom practice (i.e. the taught curriculum) is a direct reflection of the written curriculum - the taught curriculum is the written curriculum in action. Therefore:

- The essential elements of learning in the written curriculum (i.e. concepts, knowledge, skills, attitudes and action) are identified.
- It is recognised that these elements are not completely separable - in the course of the learning process they blend and are synthesised in two primary ways:
  - as a student profile, which reflects the essential elements; and
  - through key questions which, while conceptually based, reflect aspects of the other essential elements.
- The teacher plans, with input from the students, thematic units designed to address the student profile.
- The activities which are planned for the unit are designed to ensure that the student profile is addressed by conducting inquiry structured around key questions.

FIGURE 4: Subject-Specific Perspectives of the Student Profile

Profile	Language	Mathematics	Science / Tech.	Social Studies
Inquirers Their natural curiosity has been nurtured. They have acquired the skills necessary to conduct purposeful, constructive research. They actively enjoy learning and this love of learning will be sustained throughout their lives.	They use language as the primary medium of inquiry to learn about language and through language.	They are fascinated by the world of patterns, shape and number and use the skills of mathematics to conduct purposeful research.	They have a sense of wonder about the physical and materials world and how it works and use the science process to conduct purposeful inquiry.	They inquire into cultural, historical and geographical influences on individuals, groups and social systems. They have enthusiasm for learning about self and others, past and present, and about the social world, recognising that human understanding of self and the social world, past and present, is changing daily given new thinking, new findings and new technology.
Thinkers They exercise initiative in applying thinking skills critically and creatively to make sound decisions and to solve complex problems.	They use language precisely and skilfully in the context of higher level thinking.	They use mathematics as an analytical tool across the curriculum.	They use the process skills of science to reinforce, change or reflect their existing ideas.	They think creatively and critically about public issues and make informed judgements about the past and about social and environmental problems.
Communicators They receive and express idea and information confidently in more than one language, including the language of mathematical symbols.	They are confident users of oral and written language forms, in a variety of situations.	They use the symbols of mathematics to receive and express ideas and information confidently, to understand the relationship between meanings and to engage in mathematical discourse at ever increasing levels of abstraction.	They gather, record, organise, interpret and present scientific data in different forms.	They communicate their questions, data findings and conclusions effectively.
Risk-takers They approach unfamiliar situations without anxiety and have the confidence and independence of spirit to explore new roles, ideas and strategies.	They are courageous and articulate in defending those things in which they believe. They are willing to attempt to read, write or speak in situations where they may not feel totally competent.	They are prepared to try out new approaches, suggest solutions to problems and respond to unfamiliar formats, even when they are not certain that they know the right way.	They are prepared to hypothesise about, and speculate responses to, unfamiliar problems or situations. They are willing to give up or change ideas in the light of new evidence.	They use the approaches of the historian, geographer and social scientist to look at and think about the social world, in creative and novel ways.
Knowledgeable They have spent time exploring themes which have global relevance and importance.	They understand the internal structure of language an the various influences on its development. They have experienced a wide range of literature.	They know about a coherent body of interconnected mathematical understanding and the role of mathematics in the development of science, technology and society in general.	They have acquired a body of significant scientific knowledge and an understanding of important concepts.	They have acquired a body of knowledge and developed a depth of understanding about how the social world, its systems and institutions, works, and about the needs, rights and responsibilities of individuals and groups.

	Language	Mathematics	Science / Tech.	Social Studies
Open-minded They respect the views, values and traditions of other individuals and cultures and are accustomed to seeking and considering a range of perspectives.	They respect differences and similarities between languages and dialects. They are aware of the use of language as an expression of bias and strive to maintain an objective stance.	They have an awareness of and respect for varied interpretations and critically evaluate explanations, strategies and solutions.	They appreciate the tentative nature of ideas and recognise that science is a constantly changing and evolving body of knowledge.	They appreciate the tentative nature of judgements about the human past and human motivation; respect the rights of others to hold views which differ from their own; appreciate the strengths as well as possible shortcomings of their culture; are prepared for theories, predictions, speculations to be disproved; and are prepared for unexpected findings.
Principled They have a sound grasp of the principles of moral reasoning. They have integrity, honesty and a sense of fairness and justice.	They are aware that language is powerful, that it can have a profound effect, and that it must therefore be used responsibly.	They recognise the responsibility to be accurate and appreciate the obligation to gather, interpret, report and apply data with honesty.	They follow the science process faithfully and communicate results honestly.	They are active and responsible members of their class, school, family and community; use the UNDHR as the basis for their moral reasoning about the social world.
Reflective They give thoughtful consideration to their own learning and analyse their personal strengths and weaknesses in a constructive manner.	They reflect on their own levels of language development in their mother tongue and other languages. They consciously work at improving their language proficiency.	They are accustomed to examining their own mathematical learning and analyse their strengths and weaknesses in a thoughtful, constructive manner. They reflect on their own conclusions and processes.	They reflect on their methods / conclusions and they respect and recognise inherent limitations. They differentiate between fact and opinion, evidence and assertion.	They are aware of the need to evaluate sources of evidence. They reflect on their own interpretations and on the methods they have used to reach them. They differentiate between fact and opinions, evidence and assertion.
Well-balanced They understand the importance of physical and mental balance and personal well-being.	They are aware of the need for an educated person to be an effective communicator. They use literature for leisure and learning.	They understand the importance of being numerate in order to meet the demands of a technological age.	They understand their own bodies and their needs. They make informed decisions based on scientific knowledge so as to ensure their own health and that of others.	They accept uncertainty and ambiguity and understand that not all questions have answers and not all problems have solutions.
Caring They show sensitivity towards the needs and feelings of others. They have a sense of personal commitment to action and service.	They show responsible, caring attitudes towards the use of language and they value literature for the insight it gives them to the feelings of others.	They recognise and value the power of mathematics as a highly effective tool for understanding and solving problems and to show appreciation for the beauty and fascination of the subject.	They treat their environment with sensitivity and respect. They are conscious of the power of science to sustain / damage and they have a sense of responsibility toward the impact of their actions.	They demonstrate empathy for others. They participate in solving classroom, school, family, local and global social problems.

10.2 Why is Mkombozi committed to this type of teaching?

Mkombozi is committed to structured, purposeful inquiry which actively engages students in their own learning. The reason is simple. We believe that this is the way that students learn in the most constructive manner. Mkombozi structures its work by means of questions such as, "What do we want the students to learn?" In seeking answers to that question, Mkombozi has made a commitment to relevance and quality, rather than to quantity. Mkombozi wants the curriculum to emphasise the active construction of meaning, so that students' learning will be purposeful.

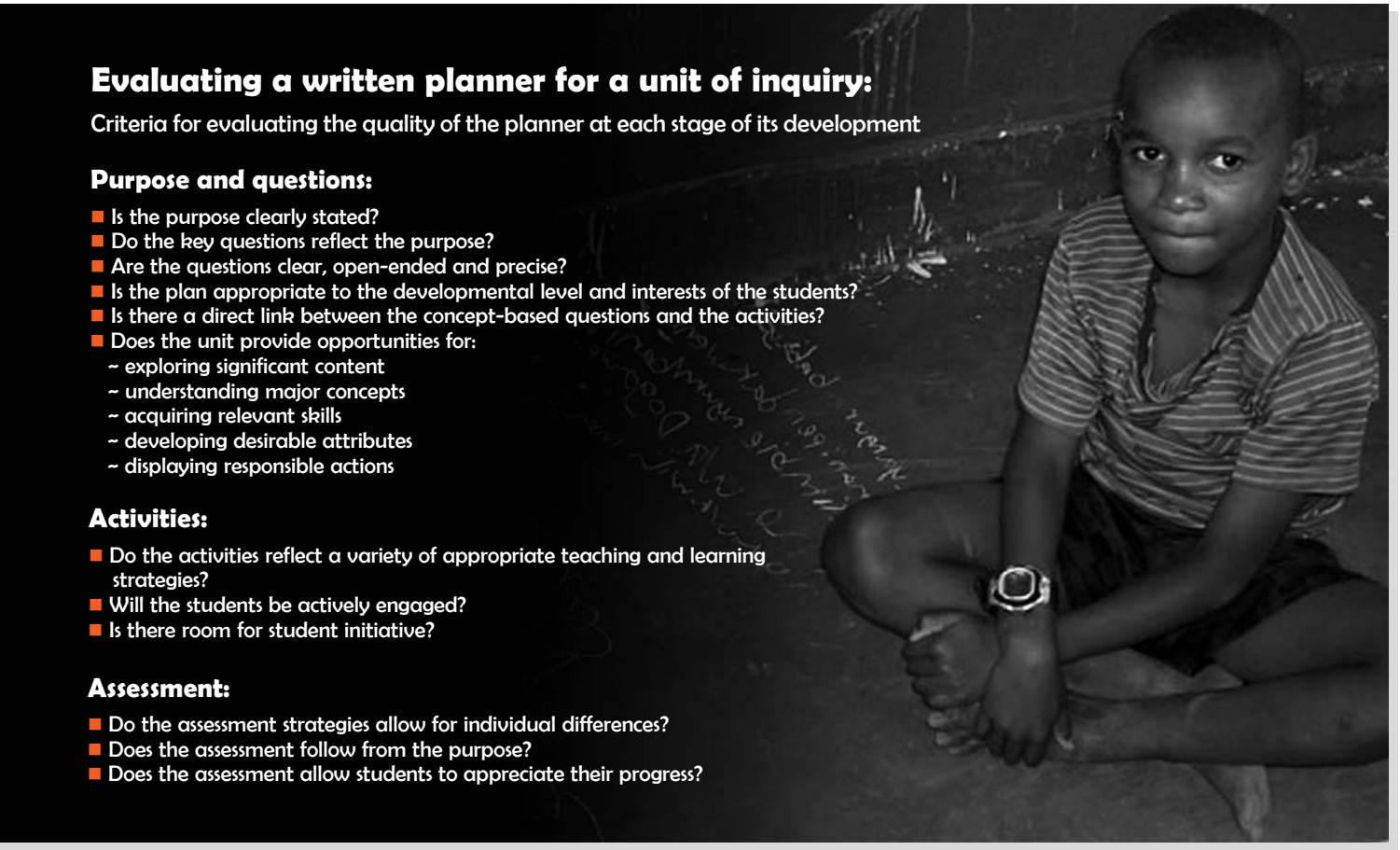
Mkombozi believes that students should be invited to investigate important subject matter by formulating their own questions, looking at the various means available to answer the questions and proceeding with research, experimentation, observation and other means that will lead them to their own responses to the issues. The starting point will be the students' current understanding, and the goal is the active construction of meaning by building connections between students' experience and information / processes derived from the inquiry into new content.

The teacher's role in this process is to create an educational environment which encourages students to take responsibility, to the greatest possible extent, for their own learning. This means that resources must be provided for each student to become involved in self-initiated inquiry. The teacher facilitates the process of students becoming seekers rather than followers by asking carefully thought-out, open-ended questions and by encouraging students to ask questions of each other as well as of the teacher. The teacher must also model and value inquiry. This is the type of teaching to which Mkombozi is committed.

10.3 How do we plan for this kind of learning?

A conceptual template of Mkombozi's "NFE Inquiry Planner" is presented in FIGURE 4 ON P.25. The planner is:

- designed to be used collaboratively;
- structured around a set of open-ended questions (see section 10.4 for sample units of inquiry);
- includes stage by stage guidelines for use.



Evaluating a written planner for a unit of inquiry:

Criteria for evaluating the quality of the planner at each stage of its development

Purpose and questions:

- Is the purpose clearly stated?
- Do the key questions reflect the purpose?
- Are the questions clear, open-ended and precise?
- Is the plan appropriate to the developmental level and interests of the students?
- Is there a direct link between the concept-based questions and the activities?
- Does the unit provide opportunities for:
  - ~ exploring significant content
  - ~ understanding major concepts
  - ~ acquiring relevant skills
  - ~ developing desirable attributes
  - ~ displaying responsible actions

Activities:

- Do the activities reflect a variety of appropriate teaching and learning strategies?
- Will the students be actively engaged?
- Is there room for student initiative?

Assessment:

- Do the assessment strategies allow for individual differences?
- Does the assessment follow from the purpose?
- Does the assessment allow students to appreciate their progress?

FIGURE 5: CONCEPTUAL OUTLINE OF THE MKOMBOZI NFE INQUIRY PLANNER

INQUIRY PLANNER

THEME:

Key concept(s):
Powerful ideas which have relevance within and across the disciplines (subject areas) and which students must explore and re-explore in order to develop understanding.

Essential questions:
The key questions which will drive the inquiry.

Transdisciplinary skills:
Those skills the students need in order to succeed in changing / challenging the world.

Assessment:
The strategies that will be used to assess learning.

Activities:
Teacher and/or student designed activities which will address the key questions.

Connections:
Real context applications of the inquiry.

Resources:
Resources required, including: people, places, audio-visual materials, related literature, music, art, computer software, etcetera.

10.4 Transdisciplinary questions to structure the NFE Inquiry Planner

Mkombozi's "NFE Inquiry Planner" (presented in FIGURE 4 ON P.25) is structured around defined sets of open-ended questions. More specifically, within each of the primary curriculum perspectives (i.e. Language, Mathematics, Science / Technology and Social Studies), questions are presented according to the eight concepts of a transdisciplinary curriculum (i.e. Form, Function, Causation, Change, Connection, Perspective, Responsibility, Reflection). Sample units of inquiry - two in each area - are presented here:

LANGUAGE: LITERATURE

A unit of inquiry on "picture books"

Form:
What kind of picture books are there?
What are the parts of a book?
What is the balance between picture and text?
How are books made?
What illustration techniques have been used?
What kind of pattern is the book based on?
What materials can be used?

Function:
How do the pictures and the text work together?
What are the main elements of a story?
Do books play the same role in all cultures? In all families?
What do we use books for?
Can books be misused?

Causation:
How do picture books compare with other literary forms?
How are books by the same author similar/different?
Why did this author choose this story?
Why did the illustrator choose this style of illustration?

Change:
How have picture books changed historically?
How do our preferences/opinions change as we get older?
How have materials used for books changed?
How does the role of illustrations change in books for older people?

Connection:
How do picture books compare with other literary forms?
How are books by the same author similar/different?
How can reading help our language development?
How is this book similar/different to others we have read?
How do the pictures help us to understand the text?

Perspective:
How do picture books differ in different cultures?
Do books have the same role in all cultures?
Why do picture books appeal to younger readers?
What influence does the book cover have?
How do the illustration techniques reflect the culture?
Why might some people find some books objectionable?

Responsibility:
Do all children have access to books?
How much does a reader have to bring to a book?
What is the author's responsibility to avoid stereotyping?
What can we learn from a book about human nature and world issues?
Should we censor books?
Who should decide which are censored?
Why do some people never learn to read?

Reflection:
What kind of message do authors try to convey to readers?
How does discussing a book develop our understanding of it?
How does analysing a book develop our understanding of it?
How do illustrations add to our understanding?
What does this book tell us about ourselves?
What does it tell us about others?

LANGUAGE: METALANGUAGE

A unit of inquiry on "names"

Form:
What is a name?
What are the special words used for the names of things?
Why do some names have capital letters and some not?

Function:
What do names tell us about the things they name?
How can the study of place names tell us more about historical events?
Why do we name things?

Causation:
How have the physical features of the earth affected the development of language?
How do geomorphological features get their names?
How do people get their names?
How do places get their names?

Change:
When can people's names change?
Why do names go in and out of fashion?
Why do people's names change when they are married?

Connection:
What are the origins of names?
How are people's names connected to their religion?

Perspective:
Which languages influenced the development of English?
Why do names for the same features differ among cultures?
How do people's names differ in different cultures?
If we pronounce a name differently is it still the same name?

Responsibility:
What are consequences of careless naming of new discoveries?
Does everyone have the right to name?

Reflection:
How can the study of names contribute to our knowledge about other disciplines?

MATHEMATICS: Shape & Space

A unit of inquiry on "plane shapes"

Form:
Can you describe these shapes?
How are these shapes formed?
Can you make this shape from other shapes?
How many sides does a ..... have?
What do quadrilaterals look like?

Function:
What are some differences between the shapes?
What are some similarities between the shapes?
Which shapes are used in architecture (for storage, design)?
What are some differences between the 2D and 3D shapes?
What is each shape being used for?
What makes a shape a quadrilateral?

Causation:
Why is a ..... the best shape to use to ..... ?
How did the plane shapes get their names?
Why are windows and doors often rectangular?
Why would someone make a circular door or window?
Why are tyres round?
Which containers can be stacked most efficiently? Why?

Change:
Can you change a ..... to a ....?
Can you use this shape to make a solid shape?
What would the world be like without circles?
Have the shapes of windows and doors changed over time?
What can we make with it?
Can you sketch the 3D shapes as a 2D shape?
Can you change one quadrilateral to another?

Connection:
What is the difference between a .... and a ....?
Can a .... also be a ....?
What is the difference between a square and a rectangle?
What is the difference between a circle and a sphere?
Can you tell me how the boxes are similar to the buildings in your neighbourhood?
Where can you find these shapes in the world?

Perspective:
What solid shapes have this shape in them?
Does this shape look the same from different positions?
How does this shape look when you rotate it?
Is your friend sitting opposite you seeing the same shape?
What happens when you rotate it or look at it in a mirror?

Responsibility:
When will your knowledge about shapes be useful?
How can we use these shapes?
How did you describe your shape?

Reflection:
How can you be sure that this shape is a ....?
Can you tell me about a world of circles?
How could you describe a quadrilateral to someone who has never seen one?

MATHEMATICS: Numbers

A unit of inquiry on "place value"

Form:
What is recognisable about a place value system?
What is the relationship between a place value system and the number of digits it uses?
What are the names of the positions in a 4-digit number
What is a fraction?

Function:
How does a place value system help us write numbers?
Why would someone want to use a place value system other than base ten?
How does the value of the digit 5 depend on the column?
How can you write numbers from 1 to 10 with only three symbols?

Causation:
What prompted people to develop a place value system?
Why is place value useful in making estimates?
Why are roman numerals different from our numerals
Why do we sometimes round up or down?

Change:
How does something change in a place value system?
Why does a digit's value change in a place value system?
Why do the digits in a place value system change as the base changes?
What happens if you reach the number that a place value system is based on?
How can you change the value of a three digit number by rearranging the digits?

Connection:
How are different places in a place value system related to each other?
How does the place value system help us with computation and estimation?
How is the place value related to the metric system?
Where do we see roman numerals?

Perspective:
In what different ways can we look at a number in a place value system?
In what different ways can a number be expressed?
What patterns do you see when a digit is multiplied by 10, 100, 1000?
Why do we use a different system of numerals?

Responsibility:
How does your understanding of place value help?
What difference does an error in place value make in a sum of money, in a measurement, in a .....?
Why is it important to align digits of equal place value when adding?

Reflection:
How do you know a number's value in a place value system?
Can you do computation and estimation without understanding place value?
In what situations do you use place value?
How would life be different if we only had roman numerals?

SCIENCE / TECHNOLOGY: MATERIAL & MATTER

A unit of inquiry on "physical essence"

Form:
What does it look like?
What is its form?
What is it made of and where does it come from?
Is it natural or man-made?
Can it be identified by touch, taste or smell?

Function:
What is it used for?
What will happen if it is frozen, heated, bent etc?
What properties does it have?
Why is it made from this material?
What would happen if it was made of a different material?

Causation:
How was it formed?
Is it in its natural form or has it been changed?
How does its usefulness depend on its properties?
Is its shape dictated by its use?
What other material has been used to adapt it?
How has its dependence on other things affected it?

Change:
Which materials have been used?
In which way has it been changed?
What were the conditions of the change?
What happens as it changes?
Can it change back to its original form?
Are there different ways to change it?
Can some changes be avoided?
Can it change its physical state?

Connection:
What affect does this material have on us?
What was it before and what will it become?
How can conditions affect it?
Where can we find it?
What is its relationship with other materials?
How does it interact with other materials?
Is it dependent on other things?

Perspective:
What is my point of view and what is it based on?
How valid / conclusive is the evidence?
What are the ramifications of this point of view?
Does my point of view differ from that of others?
Are these different points of view supported by evidence?

Responsibility:
How is it useful to us?
How is our use of it affecting the environment?
Can we find alternatives?
How can we conserve what we have?

Reflection:
Were the sources of my information fact or opinion?
Could there have been bias or propaganda?
Did I check the information?
Did I design the experiments to find out more information?
Have I analysed my findings?

SCIENCE / TECHNOLOGY: EARTH & SPACE

A unit of inquiry on "universe"

Form:
What is it called?
What can we find our using our senses?
What group of things does it belong to?
Where can we find it and where did it come from?
What parts is it made up from and how are they arranged?
How does it affect our senses?

Function:
Where did it come from and where do we find it?
Is it always in the same place?
Is it always the same?
Does it move and are there any patterns?
What properties are present?

Causation:
How did it begin to exist?
Why does it behave the way it does?
Why are some of its forms different to others?
What would happen if it ceased existing?
How is the present state a result of man's actions?
Why is it different at certain times?
What effects does it have on other things?

Change:
What changes have occurred in the landscape?
What do we know about earth movements?
How do weather changes affect the environment?
How is the earth affected by its position and movement in the solar system?

Connection:
Why do we need water and air?
What effect do weather patterns have on the environment?
What effect does the sun have on us and our environment?
How does the moon's cycle affect our lives?

Perspective:
What is my point of view and what is it based on?
How valid and conclusive is the evidence?
What are the ramifications of this point of view?
Does my point of view differ from that of others?
Are these points of view supported by the evidence?

Responsibility:
What types of pollution are there?
What causes pollution?
How can we conserve our natural resources?
What will happen if we continue only to consider man's wants and expectations?

Reflection:
What did I already know and how did I know this?
Did I conduct my own research and what form did it take?
Were the sources of my information fact or opinion?
Could there have been bias or propaganda?
Did I check the information?
Did I design the experiments to find out more information?
Were my experiments fair?
Have I analysed my findings?

SOCIAL STUDIES: GEOGRAPHY

A unit of inquiry on "environment"

Form:
Where do the people live in this place?
What is the landscape like?
What natural forces shape the environment: physical, climatic, biological?
What advantages does this location have?
Hoe does the environment determine lifestyle?

Function:
How have people modified this place to meet their needs?
How have people adapted to living here?
How has this place affected how people meet basic needs?
How has scarcity/abundance of resources affected patterns of settlement, migration or exploration?

Causation:
Why did people settle here?
Why do people continue to live where they live?
Why do people live the way they do?
What environmental factors cause migration, settlement, exploration, rise in population?
How has the development of technology affected the environment, natural and built?

Change:
In what ways does the built environment result from the natural environment?
How has the development of technology affected the environment, natural and built?
How has technology changed human control of environment?
What natural events cause people to relocate?

Connection:
Do people who live in similar environments have a lot in common?
Do people who live in the same natural environment always have the same culture?
How does location affect inter-societal connections?
Is the place I live in similar or different from this place or other places? How?

Perspective:
What would be the advantages/disadvantages of living here?
How is this place similar/different from where I live?
How might I spend a day living in that place?
Are the changes that are taking place in the environment beneficial to the place or the people there? In whose opinion?

Responsibility:
What environmental problems were caused by humans?
How can we prevent further damage to nature?
Can individual efforts make a difference?
How is the way we live now causing environmental damage?

Reflection:
Did someone tell us about this place?
Did we read about this place and people?
Did we see a film, TV programme, hear a radio programme?
Did we visit the place, meet the people?
What stereotypes so we have about this place?

SOCIAL STUDIES: SOCIETY

A unit of inquiry on "culture"

Form:
What are the forms of kinship, customs, values, beliefs, expectations, language(s), and artefacts of the society?
Is the culture common to the whole of the country or are there different cultures within the state?
Are the same cultural elements common to other groups living in different states?
What does it mean to be a good citizen in this society?

Function:
How does the culture influence perceptions, emotions, and actions of individuals?
How is the power/authority allocated?
How are the leaders removed from power?
How is conflict resolved?
How are the resources distributed?

Causation:
What individuals, groups, institutions, systems shaped society?
Why did the political, economic, legal, social systems develop?
Has the environment shaped the nature of society?
What is the role of technology in shaping society?
What causes new cultures to develop?

Change:
What societal factors cause growth, conflict, resettlement, migration, and resource management?
What societal forces cause people to relocate?
In what way has conflict and its resolution shaped society?

Connection:
What kinds of beliefs, values and attitudes encourage connections with other peoples?
What kinds of beliefs, values and attitudes discourage or prevent connections with other peoples?
How are the beliefs, norms and values of people today connected with those of their ancestors?

Perspective:
What influences our opinions?
Can I explain the point of view of others even though I do not agree with it myself?
Can I give more than one possible explanation for the actions and behaviours of others?
How can conflict be resolved?

Responsibility:
What does it mean to be a world citizen?
How can I be a responsible member of my family, class, school, society, and world?
What is my responsibility to those who are less fortunate?
What rights should children have all over the world?

Reflection:
How do we know about this society, its nature, its state?
Have we gathered data from primary / secondary sources?
Is there a likelihood of bias or propaganda in these sources?
Could the data be interpreted in ways other than it is?
How reliable are our own opinions and those of others?

11. Change in teaching practice at Mkombozi

Mkombozi believes in a particular approach to teaching and learning. Implementation of this approach requires change not only in the classroom, but throughout the whole organisation. The change is likely to be slow, painful and beset with difficulties (these difficulties are always associated with any change where people have to examine and modify their practice). Engaging in this change process will have a beneficial impact on the whole organisation, the individual educators and most significantly on the quality of student learning. The process of change in teaching practice will need the support from all educators.

11.1 What are the changes for educators?

The degree of change will depend on the educator. We do not expect educators to discard years of experience and skills. Rather it is suggested that educators reflect on their own practice, both individually and collectively, with a view to sharing ideas and strengths; with the ultimate aim to improve student learning. In doing so, they will be modelling the skills and attitudes that have been identified as essential for the students.

11.2 What is "good practice"?

At Mkombozi, adults and children are encouraged to ask questions, identify problems and seek solutions in the pursuit of continuous improvement towards common goals. Mkombozi is infused with a sense of purpose and a spirit of inquiry. Within this setting, the classroom acts as a microcosm of the larger organisation.

The classroom is a place of variety and balance. Balance is inherent in the pursuit of understanding and the acquisition of knowledge and essential skills. Variety is ensured because educators are resourceful professionals in command of a range of teaching and grouping strategies.

Students are actively involved in planning and assessing their own learning. They are caring and committed. They recognise that the right to a good education is complemented by a responsibility to give their best as individuals and to contribute to the learning of the whole class.

11.3 How are classroom practices changing?

The classrooms are lively places; intelligent places. It is a place where easy options are seldom sought, expectations are high, and learning knows no limits. To create such a classroom, the educator is faced with the challenge of integrating the various disciplines into a cohesive, meaningful whole while ensuring that the essence of each discipline is retained. The principal means of bringing about such integration is through the transdisciplinary units of inquiry. These units are themselves elements in a thematic programme of inquiry, which ensures continuity of learning for all students.

Figure 6 on p.31 provides an overview of key changes in classroom planning, teaching and assessment practices.

FIGURE 6: Key Changes in Classroom Planning, Teaching & Assessment Practices

Planning	Teaching	Assessment
Decreased emphasis on: ~ Planning in isolation from other educators. ~ Planning disconnected from the curriculum. ~ Educator making all key decisions. ~ Planning which ignores the students prior knowledge or experience. ~ Planning a large number of units, which will be covered superficially. ~ Addressing assessment issues at the conclusion of the planning process. ~ Planning which presents the curriculum as separate, isolated disciplines. ~ Planning that assumes one level of language competency. ~ Planning that assumes one ability level. ~ Planning units that focus on one culture or place. ~ Planning units in which exploration of major issues is incidental.	**Decreased emphasis on:** ~ Over-reliance on a limited set of teaching strategies. ~ Over-reliance on one grouping strategy. ~ Viewing the teacher as the sole authority. ~ Focusing on what the students do not know. ~ Over-reliance on one teaching resource from one culture. ~ Teaching about responsibility and the need for action from others. ~ Viewing students as passive recipients. ~ A teacher-directed focus on rigid objectives. ~ Employing teaching strategies that are suitable for one level and type of ability.	**Decreased emphasis on:** ~ Viewing planning, teaching and assessing as isolated processes. ~ Over-reliance on one assessment strategy. ~ Viewing assessment as the responsibility of the teacher. ~ Over-reliance on one strategy of recording and reporting. ~ Seeking student responses solely to identify the right answer. ~ Concluding each unit only by summative testing. ~ Assessing for the sole purpose of assigning grades. ~ Embarking on new learning before assessing the levels of students' current knowledge and experience. ~ Evaluating units in isolation from other teachers.
Increased emphasis on: ~ Planning collaboratively using an agreed, flexible system. ~ Planning based on student learning outcomes and in the context of a coherent organisation-wide programme. ~ Involving students in planning for their own learning and assessment. ~ Planning which builds upon students' prior knowledge and experience. ~ Planning fewer units, which are explored in depth. ~ Addressing assessment issues throughout the planning process. ~ Planning that emphasises connections between and among disciplines. ~ Planning which recognises a variety of language competencies. ~ Planning which recognises a range of ability levels. ~ Planning units that explore similarities / differences between cultures / places. ~ Planning units that explore broad human experiences from a range of perspectives. ~ Planning units which focus directly on major issues.	**Increased emphasis on:** ~ Using a range and balance of teaching strategies. ~ Grouping and regrouping students for a variety of learning situations. ~ Viewing students as thinkers with emerging theories of the world. ~ Building on what students know. ~ Using multiple resources representing multiple perspectives. ~ Empowering students to feel responsible and to take action. ~ Involving students actively in their own learning. ~ Pursuing open ended inquiry and real life investigation. ~ Addressing the needs of students with different levels and types of ability.	**Increased emphasis on:** ~ Viewing planning, teaching and assessment as interconnected processes. ~ Using a range and balance of assessment strategies. ~ Involving students in peer and self assessment. ~ Using a range and balance of recording and reporting strategies. ~ Seeking student responses in order to understand their current conceptions. ~ Involving the students in shared reflection at the end of each unit. ~ Enabling students to see assessment as a means of describing learning. ~ Assessing the level of students' current knowledge and experience before embarking on new learning. ~ Evaluating collaboratively using an agreed, flexible system.

12. Good language practice

12.1 What does the language classroom look like?

- Language in all its forms is clearly in evidence.
- There is a hum of discussion.
- There is a book corner, well stocked with reference books, picture books, story books, poetry books, children's self-made books and books in a variety of languages.
- Displays include a wide range of print, including students' writing, author of the month, questions from the current unit of inquiry, posters, charts, calendars, instructions.
- The listening centre is freely accessible, with a range of fiction and non-fiction audio cassettes available.
- The clearly labelled writing centre is equipped with a range of materials and equipment - a word processor and printer, a typewriter, different types of paper, envelopes, blank forms, card, bookbinding tape and ready-made blank books.

12.2 How does a language classroom work?

Students are engrossed in books at tables, in the book corner and in the quiet areas outside the classroom; they move purposefully between the classroom and the quiet area as the task demands, switching readily from individual study to group discussion, seeking advice and comment from peers and teacher as needed.

Writing is a significant activity in classes of all ages, with younger children comfortably making independent attempts at spelling, sending letters, annotating pictures and making books, while older children work at various stages of the writing process, drafting, revising and editing imaginative stories, expressive poetry, science reports, personal journals and reading responses.

The teacher switches flexibly between individual, group and class work. The underlying organisation and sense of purpose are clear. The teacher moves easily among the students, working with a group to brainstorm pre-writing ideas, sitting for a while longer to help a reluctant writer to begin, pausing to assist with an individual editing a question, gathering specific students together for a group conferencing session, turning to advise on an appropriate reference source, collecting the whole class for a summarising session. The teacher models appropriate behavioural and learning attitudes, speaking and listening respectfully, referring to reference sources when appropriate, enthusiastically sharing ideas about a favourite novel, posing questions on the current unit of inquiry, sensitively supporting all individuals to aim for their best.

Language is the medium of inquiry. Teachers and students enjoy using language. Literature is integral to the curriculum - a series of books read as part of an author study, folk tales as part of social studies, comparison of illustration technique to encourage the acquisition of art skills. Books are not only enjoyed, they are discussed, analysed, compared and contrasted.

12.3 Why is the language classroom the way it is?

The classroom is flexible enough to cater for a wider range of language and literacy development; because there are so many variables in students' backgrounds and experience, it is likely that even in a similar age group of students there will be enormous differences in their levels of language and literacy development.

12.4 How is language connected?

Language is a complex web of connections. The language strands are interdependent, with listening, speaking, reading and writing being taught and learned simultaneously. Language is seen as involving learning language, learning about language and learning through language. Language is the major connecting element across the curriculum, with students focussing not only language for its own sake, but also on the language of science, history, mathematics and other disciplines.

The language classroom extends beyond the classroom walls, with close connections to the resource centre, IT lab for research, quiet reading and story sessions, and to other classrooms for paired reading activities, shared bookmaking and interviews. The teacher plans in collaboration with other teachers.

The language classroom is also connected to the broader world through technology; students aim for literacy in its broadest sense, researching and communicating not only through printed media , but also through internet and email to access multimedia resources and communicate with people beyond Tanzania.

12.5 How is language practice changing?

Increased emphasis on:

- Integrated language development
- Language as a transdisciplinary element
- A literature based approach
- Reading for meaning
- A wide choice of print
- Reading selected according to interest level
- Student selected reading materials
- Appropriate cooperative discussion
- Teaching a range of strategies
- Spontaneous writing
- Writing for meaning
- Writing as a process
- Developing a range if independent spelling strategies
- The teacher as facilitator
- Extended in-depth learning periods
- Nurturing appreciation of the richness of language
- Literature as a means of understanding and exploring
- World classics
- Culturally diverse materials
- In-depth study
- Multi-media resources
- Using language for creative problem solving and information processing
- Flexible task-responsive grouping
- A range of appropriate assessment methods, such as portfolios, conferencing, writing sample analysis, and response journals

Decreased emphasis on:

- Language as isolated strands
- Language as a separate discipline
- Skill drill texts and work books
- Decoding only for accuracy
- Restricted reading materials
- Reading selected according to decoding levels
- Teacher directed reading materials
- Silent, individual work
- A narrow focus on one strategy or mode
- Teacher imposed writing
- Writing primarily for accuracy
- Writing only as a product
- A dependence on the teacher as the only source of correct spelling
- The teacher as the infallible expert
- Fragmented scheduling
- Language study as grammar and syntax
- Literature study as vocabulary, grammar and syntax
- School classics
- Superficial coverage
- Print only
- Using language for rote learning
- Fixed groupings for teaching
- Standardised reading and writing assessments

13. Good mathematics practice

13.1 What does the mathematics classroom look like?

Mathematics is a vital and engaging part of students' lives. The children in the room are very active, with an underlying sense of organisation and cooperation. Teachers and students are asking questions of each other, trying out and demonstrating ideas in small and large groups, using the language of mathematics to describe their thinking, generating data to look for patterns and making conjectures.

A wide variety of materials are available to all. These are constantly in use. There are lists, tables and charts on display showing written and numerical data about which relevant questions are asked and answered.

The number of mathematical resources available is impressive: colourful and thought-provoking posters and children's work cover the walls; materials, ranging from student collections of keys, seashells to store-bought pattern blocks, are out on tables; everyday tools such as measuring jugs, even cereal boxes, are in use.

The bookshelves are lined with resource books for the teacher and students, including textbooks, mathematical dictionaries, and encyclopedias. There is software that encourages the application for mathematics skills and problem solving.

The general supplies area has a variety of paper for recording mathematical ideas - different sized squared paper, dot paper and much scribble paper.

There may even be a video area where videos are shown about how mathematics is used outside the classroom.

It is clear where things belong and how they are used.

The mathematics classroom does not work on its own. The students visit younger students to help them with their investigations. Students also work with older children to travel around town in small groups on a treasure hunt, asking and answering questions about dates, time, distance, prices and more.

Other teachers come to share their interests and expertise. Mkombozi staff and administrators are involved in providing information and participating in surveys.

The community at large provides innumerable opportunities for mathematicians to practice their craft.

13.2 How does a mathematics classroom work?

Inquiry based units of study are the entry points into mathematics learning through which students will experience what it is like to think and act as mathematicians.

Students and teachers identify together what they already know which might be relevant to the inquiry, what they want to know, what they need to know to answer their questions and how they might best find that out.

The mathematics teacher is well trained in primary mathematics. Knowledge of the subject is of primary importance. The teachers' own interest in a development of the discipline is maintained through regular in-service, reading journals, and especially regular contact with colleagues who share the commitment to teaching mathematics through inquiry.

With the curriculum as a guide the teacher spends time in different ways; walking about while students are working alone, in pairs, in small groups or even as a whole class; asking key questions; challenging the students' thinking - prompting them to take their ideas one step further; and jotting down notes to inform the next stages of learning. The teacher may also gather a group of students with a particular interest or problem to provide more specific help through guidance and practicing together.

One of the most important elements of the teachers' role is to encourage appropriate mathematical discussion among the students - demonstrating the nature of mathematical discourse and the development of conjectures. Students follow simple, polite rules when talking with each other, building on previously mentioned ideas, supporting others in the various stages of learning and sharing their discoveries in a pleasant atmosphere.

Students see writing down their ideas as a natural step in the process of communicating important ideas. They record in a variety of ways, including drawing pictures, recording numbers and writing in mathematical journals.

All in all the exemplary mathematics programme consists of a very active and busy community of learners, with the teacher constantly finding ways to combine the students' needs and interests, and the goals of the curriculum, in engaging and relevant tasks.

13.3 Why is the mathematics classroom the way it is?

Mathematics is a language which is used to describe the natural world. Students of today need to build an understanding of previously made discoveries as well as discover and describe their own mathematical ideas. People construct mathematical knowledge. This requires us to look at mathematics not as a fixed body of knowledge to be transmitted but as a language and a way of thinking. It is our task as teachers to facilitate this process.

13.4 How is mathematics connected?

Mathematics, like language, can largely be seen as a service discipline to other parts of the curriculum - providing tools, symbolic language and ways of thinking to the scientist and social scientist.

Mathematics is also a fascinating discipline in its own right. It is the joy and satisfaction of solving problems and finding patterns that has captured and stimulated the most creative minds throughout the ages.

13.5 How is mathematics practice changing?

Increased emphasis on:

- Connecting mathematical concepts and applications
- Manipulatives, to make mathematics meaningful
- Real-life problem solving
- Instruction built around what students know
- A variety of strategies for possible multiple solutions - emphasis on process
- Students being encouraged to speculate and pursue hunches
- A wide range of topics, regardless of computational skills
- Mathematics as a means to an end
- The use of calculators and computers
- Multiple sources and resources for learning
- Students investigating, questioning, discussing and justifying
- Practical activities, with flexible groupings
- Assessment as an integral part of instruction
- A broad range of assessment strategies

Decreased emphasis on:

- Treating mathematics as isolated concepts and facts
- Rote practice, memorisation and symbol manipulation
- Word problems as problem solving
- Instruction focussed on what students do not know
- One answer, one method, emphasis on answer
- The teacher as the sole authority for right answers
- Computational mastery before moving on to other topics
- Teaching mathematics for its own sake
- A primary emphasis on pencil and paper computations
- A textbook driven curriculum
- The use of worksheets
- A chalk and talk lesson format
- Assessment for the sole purpose of assigning grades
- Short-answer, multiple-choice assessment

14. Good science / technology practice

14.1 What does the science / technology classroom look like?

- The science and technology classroom provides an environment which stimulates and challenges students' ideas.
- A variety of objects, materials and students' models are displayed at student height around the room.
- Display boards show examples of students' work and relevant posters illustrate specific science topics.
- The class library contains a variety of well illustrated reference books at a wide range of reading levels.
- The shelves hold a range of equipment for collecting, observing, measuring, recording and presenting data.
- The students show enthusiasm and work cooperatively in investigating and experimenting.

14.2 How does a science / technology classroom work?

Formulating questions: Students identify something they want or need to know about the biological or physical world. They learn that their own questions can be the impetus for inquiry. They recognise that new questions and problems arise all the time as we observe and collect data.

Observing: Students use all the senses - touching, feeling, listening, tasting, smelling, and seeing - to notice relevant details of objects or events. This results in a widening and deepening understanding of the biological and physical world. They choose and use equipment appropriately, to enhance observation.

Planning: Students state questions, identify problems, predict, hypothesise and justify. They devise ways of finding needed information and design experiments and tests. They identify ways their findings can be checked and verified.

Collecting data: Students gather data from a variety of sources. They continually question, re-test and check data, looking for confirmation of ambiguity. They learn to respect evidence which results from their efforts.

Recording data: Students describe and record observations with precision and relevant detail, by drawing, note taking, making charts, tallying and writing statements.

Organising data: Students sort, categorise and order information and arrange it into a variety of suitable forms, such as narrative descriptions, tables, timelines, graphs and diagrams.

Interpreting data: Students seek patterns and relationships among scientific phenomena. They see new possibilities in data and modify earlier hypotheses or explanations in light of new data. They respect reason. They speculate and hypothesise, moving towards the construction of theories about the natural world.

Presenting research findings: Students can effectively communicate the solutions to problems; the answers to questions or the evidence for a conclusion. They choose appropriate media. They are honest, presenting information objectively with supporting evidence.

14.3 Why is the science / technology classroom the way it is?

Traditionally, knowledge is "disassembled" in schools. However, our vastly expanded knowledge base about learning tells us that, in fact, people *construct* or *assemble* knowledge. It is our task as teachers to facilitate this process.

14.4 How is science / technology connected?

Science / technology is a vehicle for teaching critical thinking skills and a way of exploring the world. Developing ways of investigating and using evidence enables students to interact with the world around them.

14.5 How is science / technology practice changing?

Increased emphasis on:

- Discovering students' prior / existing beliefs, questions and concerns
- Problem solving and experimenting to develop a concept
- Hands-on activities to ensure that students both experience and learn science / technology process skills
- Challenging students to answer open-ended questions with investigations
- Challenging students to abandon / modify their misconceptions via observations, measurements or experimentation
- Accepting uncertainty and ambiguity
- Discussion, dialogue and elaboration on data gathered
- Students proposing explanations and conclusions
- Making predictions, suggesting hypotheses
- Challenging students to apply their learning
- Challenging students to take action on their learning
- Flexibility / freedom for students to follow interests
- Providing students with opportunities to explore a new interest
- A wide variety of materials and manipulatives

Decreased emphasis on:

- Instruction based on grade levels
- Instruction based on preparation for the next level
- The teacher tells students what to understand
- The teacher imparts "the way things are"
- Teacher-defined and teacher-led activities
- Strict adherence to teacher-directed "process"
- Teacher as the sole authority for the correct answer
- Teacher as the sole disseminator of information
- An emphasis on finding pre-set answers
- Written recording of data only
- Collecting and recording data as the sole purpose
- Instruction on the interpretation of the results
- Simply learning fact and skills
- Confining science / technology to a set topic
- Confining science / technology to set times
- The use of science / technology textbooks

15. Good social studies practice

15.1 What does the social studies classroom look like?

The social studies class is an active, bustling place. Students are working at tables, on the floor, in the corner, alone or in groups. Students and teachers are absorbed, planning, organising, preparing products, reading to each other, sharing work and reflecting. Visitors are often not noticed. The classroom is the springboard for social studies learning: learning in the community and the school. The classroom furniture, equipment and materials encourage students to work individually, in pairs, in small groups and as a class.

Students use the library / IT centre and computers; they visit other classes; they interview staff, members of the community and local experts; and they involve themselves in community and student presentations. Field trips within the immediate environment - to farms, industrial and commercial centres and other sites - are part of the social studies classroom.

The class library is the centre of activity. It contains fiction and non-fiction materials with a wide range of reading levels, presents multiple perspectives and stimulates questioning. Fiction, bibliographies, autobiographies, poetry, drama, myths, legends, documentaries on current world problems, specialised magazines and newspapers abound. It has a reference section which includes dictionaries at different reading levels, thesauruses, atlases and encyclopedias. Everything is clearly labelled and readily accessible.

A notice board details current events and local experts. Globes and maps with different scales and projections are on hand, as are tape recorders, video cameras, paper, markers and a wide variety of other presentation materials.

The teacher's resources for curricular units of inquiry are also readily available. These include textbooks, first-hand accounts, video tapes, pictures, maps, postcards, photographs, plans of buildings, copies of paintings, charts, survey results, diaries, artefacts, music tapes, travel brochures, recordings of interviews, computer databases and other computer software. Student created social studies product samples are also on display.

15.2 How does a social studies classroom work?

Inquiry based units of inquiry are the entry point into social studies learning. Each unit has a primary focus into one of the disciplines of social studies, but inquiry will not be restricted to only that discipline. Students will experience what it is like to think and act like a historian, a geographer or a social scientist.

Together, students and teacher identify what they already know, what they need to know and how they will find things out. Students design interviews, conduct surveys, take polls, read fiction and trade books, make timelines, devise and perform socio-dramas, make charts, complete decision-making trees and diagrams, create geographical and concept maps, interpret symbols and keys, measure distance, plot routes, examine artefacts, evaluate sources, work on computer databases and present patterns and trends.

The teacher, as a knowledgeable member of the learning community, facilitates, structures and guides student inquiry. S/he models the questioning approach, provides students with the time and environment to promote inquiry, and builds up a variety of diverse resources. The teacher also ensures that learning materials reflect positive images of diverse groups and does not allow any one cultural or gender perspective to dominate.

Students engage in research, applying and acquiring a variety of thinking and learning skills, using multiple sources, and considering different points of view. Students apply historical, geographical and societal concepts, skills and attitudes to current issues and problems.

Activities are selected which directly and most effectively answer the questions being researched. They allow for a variety of learning styles and language levels. Through these activities students apply new skills and concepts in new and meaningful contexts.

As young historians, geographers and social scientists, students learn to plan, collect, organise, interpret and present their findings by:

- Formulating and asking questions about the past, about places and about society.
- Drawing information from, and responding to, stories from the past, from geographical and societal sources.
- Using and analysing evidence from a variety of historical, geographical and societal sources.
- Sequencing in chronological order.
- Orienting in relation to place.
- Identifying roles, rights and responsibilities in society.
- Assessing the accuracy, validity and possible bias of sources.
- Distinguishing between fact, opinion and fantasy.
- Interpreting evidence in order to speculate.
- Comparing and contrasting different sources.
- Empathising with people.
- Organising and communicating the results of their inquiries.

Students and teachers develop and define clear criteria with which their final presentation or product will be assessed.

15.3 Why is the social studies classroom the way it is?

Students learn best when constructing meaning about questions which are significant and meaningful in their own lives, and when they are building on prior knowledge.

An inquiry-based social studies programme enhances the likelihood that students will feel that they belong to a community of learners. It helps them to develop problem-solving skills, and to become decision-makers. As a result, they are able to work in groups to solve local and global problems and make responsible choices about themselves, others and the environment.

In a world which is a complex mix of races, cultures, languages, religious affiliations and social classes, students need to recognise that there is no one way of looking at events, situations, issues or problems. When their own school experiences allow them the right to hold positions which may differ from others and reflect that such positions are valid and valued, students will be able to seek and value other people's points of view.

15.4 How is social studies connected?

The social world is influenced by science and technology. Scientific questions may need to be answered and scientific concepts understood, in the course of what is a primarily social studies unit of inquiry.

Like social studies, the arts, including literature, are an exploration and illumination of life. These parts of the curriculum value the subjective and introspective as ways of knowing. Students can enhance their understanding of social studies through art, music, dance and reading literature.

Mathematics and language are both server disciplines to social studies. Social studies needs language to define its concepts and mathematics to quantify them.

15.5 How is social studies practice changing?

Increased emphasis on:

- A coherent, articulated school wide programme, based on agreed, significant content
- Cross-grade and cross-school teacher teams
- Teachers planning in teams
- Open-ended inquiry and real-life investigations
- Community of learners includes teachers and students
- Units of inquiry which promote intradisciplinary and transdisciplinary investigations
- Units which build in local and global dimensions
- Multicultural and international units of inquiry
- In-depth coverage of units chosen
- Unit emphasis on "less is more"
- Multiple sources presenting multiple perspectives
- Social, cultural, gender perspectives
- Units that focus on students constructing meaning
- Units that expand / deepen students' knowledge of concepts and their understanding of the social world
- Skills are taught, practiced, applied toward inquiry
- Development and application of macro-skills such as decision-making, problem solving, reflective learning, communicating, thinking critically and researching
- Teaching strategies chosen from a wide range
- Teaching and learning strategies chosen with an emphasis on inquiry and deepening of understanding
- Rigorous activities directly linked to driving questions
- A variety of primary sources / documentation (e.g. people, artefacts, field trips, surveys and interviews)
- A variety of secondary sources / documentation (e.g. literature, video tapes, films and computer resources)
- Assessing student understanding early and often
- A variety of formative and summative assessment approaches, including performance assessment
- A variety of tasks suited to different learning styles
- The end of the units being signalled by reflection on the part of students and teachers
- Empowering students to be responsible / take action

Decreased emphasis on:

- Topics chosen by individual teachers
- "Pet topics" that are always done in the grade level
- Teachers planning in isolation
- Teacher-led learning
- Single discipline based units
- Units which focus on western civilisation and the developed world
- A survey approach to topics and knowledge areas
- A reliance on single sources
- Political and military perspectives
- Factual information as an end in itself
- Skills taught and practiced in isolation
- Checklists of hierarchies of discipline specific micro skills
- A narrow range of teaching and learning strategies
- Activities that result in superficial learning
- Activities that result in tangential learning
- Activities included because they are fun
- Activities included because they are hands-on
- Textbooks / worksheets as predominant resources
- End of unit / end of chapter assessment
- Traditional forms of teacher designed assessment only
- Written assessment measures
- Tests or examinations signalling the end of the unit
- Teaching about responsibility
- Teaching about the need for action

16. How will we know what we have learned?

16.1 What is Mkombozi's perspective on assessment (i.e. the learned curriculum)?

Assessment is integral to all teaching and learning. It is central to Mkombozi's goal of thoughtfully and effectively guiding students through the five essential elements of learning; the understanding of concepts, the acquisition of knowledge, the mastering of skills, the development of attitudes and the decision to take action.

Everyone concerned with assessment, including students, teachers, administrators and board members must have a clear understanding of the reason for the assessment, what is being assessed, the criteria for success and the method by which assessment is made.

Both students and teachers should be actively engaged in assessing the students' progress as part of the development of their wider critical thinking and self-evaluation skills. Teachers should be concerned with assessing the efficacy of the programme.

Mkombozi describes the taught curriculum as the written curriculum in action. Using the written curriculum, and in collaboration with colleagues and students, the teacher generates questions which guide the structured inquiry in the classroom. Assessment focuses on the quality of student learning during the process of this inquiry and the quality of student learning which is evident in the process of this inquiry. Assessment is, therefore integral to the taught curriculum. It is the means by which we analyse student learning and the effectiveness of our teaching and acts as a foundation on which to base our future planning and practice. It is central to our goal of guiding the student, from novice to expert, through the learning process.

16.2 What is assessment?

Assessment: Is the gathering and analysing of information about student performance. It identifies what students know, understand, can do and feel at different stages in the learning process.

Formative assessment: Is interwoven with the daily learning and helps teachers and students find out what the students already know in order the plan the next stage in learning. Formative assessment and teaching are directly linked; neither can function effectively or purposefully without the other.

Summative assessment: Happens at the end of the teaching and learning process and gives the students opportunities to demonstrate what has been learned.

Evaluation: Is the process of making a judgement about student progress or the effectiveness of a programme based on sufficient assessment information

16.3 What are the purposes of assessment?

1. To promote student learning by:

- Assessing students' prior knowledge / experience in order to plan / refine the teaching and learning programme or to meet individual or group needs.
- Building a profile of students' understanding.
- Engaging students in reflection on their learning and the work produced by themselves and by others.

2. To provide information about student learning through:

- Representative examples of students' work or performance.
- Compiled statistics based on explicit benchmarks and rubrics.
- Records of test results.

3. To contribute to programme evaluation through a variety of student assessments that:

- Assess student performance in relation to the general and specific outcomes of the programme.
- Assess group performance in relation to other classes or groups both internally and externally.
- Inform others, including students, colleagues and parents.

16.4 What is good assessment practice?

Assessment informs every stage of the learning and teaching process. In the earliest stages of curriculum planning, assessment requires the teacher to translate the purposes of the unit of inquiry into outcomes of the student learning. With these purposes and outcomes in mind, activities and resources are selected. Assessment of the student's prior knowledge will help the teacher determine any necessary changes in purposes and outcomes of the student learning.

Continuous assessment provides insight into students' understanding, knowledge, skills and attitudes. This is necessary to plan further activities which address issues of concern to the teacher and the students. Continuous assessment is also a means of exploring learning styles and individual differences of the students in order to customise the unit of inquiry. Making modifications to the planning of inquiry in the light of feedback from assessment improves the total programme.

Overall, effective assessments:

- Are planned for and built in, not bolted on.
- Identify what is worth knowing and assess it.
- Have criteria that are known and understood in advance.
- Allow students to demonstrate the range of their conceptual understandings, their knowledge and their skills.
- Are made up of tasks that require the synthesis and application of their learning.
- Focus on big ideas and transdisciplinary skills rather than facts of specialised skills.
- Are based on real-life experiences and can lead to other problems or questions.
- Focus on producing a quality product or performance.
- Highlight a student's strength and expertise rather than what the student does not know.
- Include collaboration between the student and the teacher or among students.
- Employ many ways for a student to demonstrate expertise.
- Take into account different ways of learning and knowing and are sensitive to personal circumstances.
- Allow students to express different points of view and interpretation.
- Promote self evaluation and peer evaluation.
- Use scoring that focuses on the essence of the task and not on what is easiest to score.
- Produce evidence that is reported and understood by students, parents, teachers, administrators, board members.
- Are continuous and cumulative.
- Are subject to continuous review and improvement.

16.5 How do I develop assessments?

In planning for assessment it is important to ask these questions:

- What is the function of the assessment?
- What broad purposes or objectives are being assessed?
- What specific purposes or objectives are being assessed?
- How can I collect evidence?
- What teaching approaches are being used to help the students be successful with the assessment?
- Which assessment activities fit into the flow of the classroom?
- Will the assessment task measure what is intended?
- Is the assessment activity reliable enough to allow sound conclusions to be drawn?
- How will the assessment activity be carried out?
- How will the assessment data be recorded?
- How will the assessment data be analysed?
- How and when will feedback be given?

After the assessment task is complete it is important to ask these further questions:

- Have the tasks provided ample information to allow a judgement to be made about whether the purposes or objectives have been met?
- What does the students' performance reveal about their levels of understanding?
- Have any unexpected results occurred?
- What changes should be made in the assessment procedure?
- How should the teaching and learning programme be modified as a result of assessment?

16.6 How do I collect the data?

Observations: All students are observed often and regularly. The teacher varies focus from wide angle (focussing on the whole class) to close up (focussing on one student / activity), and from participant (observing from within) to non-participant (observing from without).

Performance assessments: The assessment of goal-directed tasks with established criteria. In these tasks there are numerous approaches to the problem and rarely only one correct response. They are usually multi-modal and require the use of many skills. Audio, visual and narrative records are often useful for this type of assessment.

Process-focussed assessments: All students are observed often and regularly and the observations are recorded by noting the typical as well as the atypical behaviours. Multiple observations are collected to enhance reliability, and evidence is synthesised from different contexts to increase validity. A system of note-taking and record-keeping is created that minimises writing and recording time. Checklists, inventories and narrative descriptions are common methods of collecting observations.

Selected responses: Single occasion, one-dimensional exercises. Tests and quizzes are the most familiar examples.

Open-ended tasks: Situations in which students are presented with a stimulus and asked to communicate an original response. The answer might be a brief written answer, a drawing, a diagram or a solution. The work, with the assessment criteria attached, could be included in a portfolio.

Portfolios: A purposeful collection of a students' work that is designed to demonstrate successes, growth, higher order thinking, creativity and reflection. Portfolios should not be thought of as a collection of work, but rather as an exhibition of an active mind at work.

16.7 How do I evaluate the assessments?

Rubrics: An established set of criteria used for scoring and rating students' tests, portfolios or performances. The descriptors tell the assessor what characteristics or signs to look for in students' work and then how to rate that work on a predetermined scale. Rubrics can be developed by students as well as teachers.

Benchmarks: Samples of students' work that serve as concrete standards against which other samples are judged. Generally there is one benchmark for each achievement level in a scoring rubric.

Holistic scoring: This produces a single score, typically based on a four to six point scale. It is based on the overall impression of a sample of work, rated against established criteria.

Analytical scoring: This awards separate scores for different aspects of the work. This yields more information than holistic scoring and is often used for diagnostic purposes or when students need specific feedback on their strengths and weaknesses.

17. Implementation for administrators

17.1 Why inquiry?

"The essential activity for keeping our paradigm current is persistent questioning. I will use the term inquiry. Inquiry is the engine of vitality and self-renewal." (Pascal, 1990)

Mkombozi is committed to "inquiry" as the preferred approach to teaching and learning. However, this commitment to inquiry is not confined to classroom practices. Mkombozi believes that good education demands that all members of Mkombozi's community are continually reflecting on their practice in the context of a commitment to continuous personal, professional and institutional improvement. Mkombozi further believes that:

- The approaches to learning we are advocating are relevant outside of the classroom and will have an impact on the culture of Mkombozi. Without an understanding of this impact, the curriculum cannot achieve its potential.
- Inquiry, as a means of learning, changing and improving is as valid for Mkombozi as an organisation as it is for a group of students in the classroom.

Mkombozi supports the view (well documented in research) that:

- Improvements in individual classrooms only take place in the context of general organisational improvement.
- The adults in an organisation must model the knowledge, skills, attitudes and actions they advocate for students.
- Effective organisations, like effective classrooms, make purposeful, open-ended inquiry part of the culture.
- Inquiry enables individuals and groups to clarify their vision and to refocus on purpose.
- Effective organisations make a commitment to continuous improvement.
- Effective organisations develop the habit of collaboration while allowing space for people to be individuals.

Guidelines for implementation:

- Develop the habits of reflective practice, of questioning one's own practice and the practices of Mkombozi.
- Encourage a climate of inquiry among staff, students and board members.
- Structure the process of collaborative decision making as an open-ended inquiry.
- Use this process for the development of Mkombozi policies and products.

17.2 What is my role?

The degree of change to implement the teaching and learning detailed here at the Mkombozi-wide level will depend on the conditions within the organisation at the time of implementation. Mkombozi must recognise that:

- Organisation-wide adoption of this curriculum requires change in the classroom and throughout the organisation.
- This change is likely to be slow, painful and beset with difficulties.
- Engaging in the change process will beneficially impact the organisation and the quality of student learning.
- The process of change in teaching practice will require substantial, sustained support for all teachers.

The role of Mkombozi's administrators is crucial to the success of this change effort. Without the support of the leadership, this innovation will almost certainly fail. It is not required that every administrator understand the finer points of the curriculum in every area, but it is important to understand and support the basic principles that represent the essence of the curriculum. Every administrator needs to be aware, also of the kinds of practical support needed for successful implementation.

Guidelines for implementation:

- Develop a clear plan with a timetable for implementation.
- Identify and empower curriculum leaders, and provide resources for staff development.
- Arrange general sessions about the curriculum for all staff and form a curriculum working group within Mkombozi.
- Model inquiry yourself during meetings or workshops.
- Rearrange the schedule to allow shared planning time and set aside in-service days to work with the curriculum.
- Run a weekend retreat to discuss the curriculum and plan units of inquiry.
- Make sure that the purchase of resources is driven by the curriculum.

17.3 What do I tell the Board of Trustees?

Indeed, the Board must be kept informed about Mkombozi's involvement in implementing a new curriculum. Let the Board know that the curriculum:

- is developed by a variety of schools (international, national, fee-paying, state-funded);
- develops attitudes and actions along the more academic curriculum areas;
- includes an emphasis on community service;
- aims to produce students who will make a difference in a complex, challenging future;
- works towards the achievement of student learning outcomes;
- gives Mkombozi access to extensive expertise;
- develops conceptual understanding, knowledge, skills and attitudes needed for tomorrow's workplace.

17.4 How can I provide professional development?

This curriculum is more than a series of written documents. It is a way of thinking, an approach to teaching and learning, which for some teachers represents a paradigm shift. In order to accommodate this change people need time and support. Some means of providing support are offered below.

Guidelines for implementation:

- Ascertain where the teachers are in relation to the change; let them tell you what support they need.
- Use data gathered from the professional appraisal process to inform discussions with teachers.
- Training can take place within Mkombozi, with individual staff members providing their own in-service training.
- Individual teachers can share successful lessons and give support to less confident staff by team teaching.
- Share successful planners, videos and books, examples of good practice and expertise with other educationalists and teachers.
- Visit schools that have reputations for good teaching.
- Provide time for teachers to plan / reflect together - the single most effective form of professional development.

17.5 Where will we find the time?

"Time, or more properly lack of it, is one of the most difficult problems faced by school and districts engaged in restructuring." (Watts and Castle, 1993)

Guidelines for implementation:

- Release teachers during assemblies.
- Teach a class yourself to enable a teacher to work with a colleague.
- Encourage team-building, which may allow one teacher to take a larger group and thereby release a colleague.
- Schedule early release / late start days so that teams can plan together; build these into the schedule.
- Use college interns, teamed with a qualified teacher, to work with combined classes.
- Design shared units involving teachers, parents and students.
- When planning themes, share the work; let each person prepare one aspect for everybody.
- Provide common planning time for members of a grade level team; for example, add minutes on four days and release students early on the fifth, or start the day later for students and earlier for teachers.
- Many schools have an orientation week / days at the beginning of a school year. During that time, keep administrative details to a minimum and use the time for planning together.
- View each staff meeting as a professional development opportunity. Handle administrative issues in other ways - memos, daily bulletins, a read-and-pass-on file.
- Reconsider how best to use in-service days. Recognise that the one-off consultant is not always effective in bringing about lasting change and that training days may be better used by providing time for teachers to plan together.
- Use more of the budget to release teachers to plan and reflect together; for example, pay substitutes or pay staff for part of their own time.
- Take the whole staff on a weekend retreat and spend the time discussing, planning and reflecting.

17.6 How can I make sure it is happening?

"While implementing new curriculum is a multi-faceted and gradual process, it does involve some definite steps which should be part of the plan of any principal wishing to enhance the quality of education in his or her school." (Hewitt, 1988)

To ensure that using NFE materials has a real impact in classrooms, it is essential to guide the process.

Guidelines for implementation:

- Make sure that the NFE planners are used.
- Develop the library / media collection around units of inquiry, so teachers have the resources they need.
- Visit classrooms to see inquiry in action.

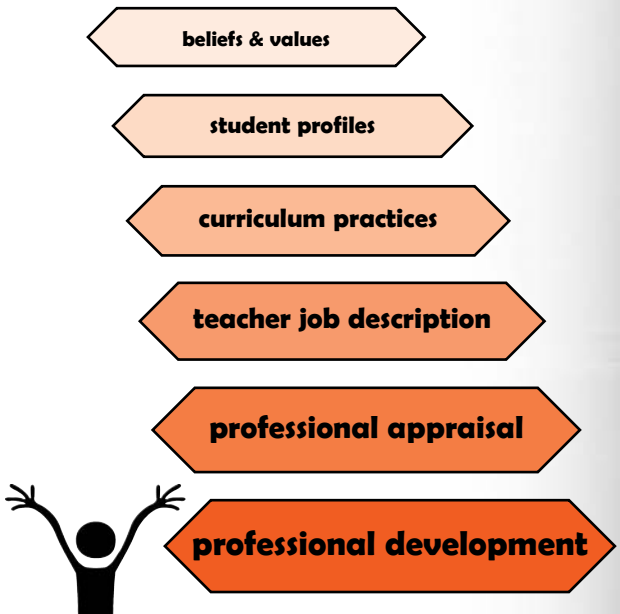
Most importantly:

Ensure that risk taking, critical thinking and using a range of teaching and assessment strategies are the focus of any job description, professional appraisal, teacher evaluation system, and professional development programme.

In other words, ensure that the school's beliefs and values about student learning underpin and guide each stage of the process, from student profiles to professional development.

As depicted here, and elaborated in the next and final section of this handbook...

...linking philosophy to professional development is at the heart of Mkombozi's approach and curriculum.



18. Linking philosophy to professional development

Since we value risk taking, critical thinking and the use of a range of teaching and assessment strategies, these factors must be the focus of any job description, professional appraisal, teacher evaluation system, and professional development programme. The logic of this approach to professional appraisal and development is:

- The school's philosophy should clearly express a set of beliefs and values about student learning.
- These beliefs and values can be well expressed through the NFE student profile which serves to drive the curriculum.
- These outcomes must be the major shaping force for classroom practice - the taught curriculum.
- If these outcomes are to shape practice, then they must shape the description of that practice.

18.1 The teacher job description

Mkombozi has designed a job description for teachers which is a direct reflection of the practices described in this volume (see Figure 7 on p.48). The job description:

- focuses solely on activities relating to student learning (i.e. other professional duties would be described in a staff working agreement / staff handbook / contract);
- encompasses practices which represent observable activities (i.e. enables professional appraisals / evaluations);
- enables the professional appraisal system to form the basis for a programme of professional development;
- enables professional development to be linked, through a series of logical steps, to Mkombozi's beliefs and values about student learning (as shown on page 45).

18.2 The questions which structure the job description

Mkombozi's beliefs and values are contained in the school's statement of philosophy (see page 4). The philosophy commits us all to certain learning outcomes for students and, therefore, to the types of teaching which will produce these outcomes. The fundamental responsibility of every teacher is to embrace the values and beliefs expressed in the philosophy and to work constantly to translate them into daily classroom practice. Mkombozi's primary purpose is student learning and the job description is therefore structured according to the three questions relating to this learning which are central to Mkombozi's NFE program:

1. Planning: What do we want to learn?

The teacher is accountable for:

- planning collaboratively for student learning;
- planning, based on agreed student learning outcomes and in the context of a coherent, school-wide programme;
- involving students in planning for their own learning and assessment;
- planning which builds on students' previous knowledge and experience;
- planning significant units of inquiry, to be explored in depth;
- addressing assessment issues throughout the planning process;
- planning which emphasises connections between curriculum areas;
- planning which accommodates a range of ability levels.

2. Teaching: How best will we learn?

The teacher is accountable for:

- using a range and balance of teaching strategies which are grouped in a variety of different learning situations;
- viewing students as thinkers with their own emerging theories;
- building on what students know;
- using a variety of resources representing multiple perspectives;
- empowering students to feel responsible and to take action;
- involving students actively in their own learning;
- pursuing open-ended inquiry and real-life investigations;
- maintaining constant awareness of the needs of second language learners;
- addressing the needs of students with different levels and types of ability.

3. Assessing: How will we know what we have learned?

The teacher is accountable for:

- viewing planning, teaching and assessing as interconnected processes;
- using a range and balance of assessment strategies;
- using a range and balance of recording and reporting strategies;
- involving students, parents and colleagues in the assessment process;
- involving students in shared reflection during and at the end of each unit;
- evaluating the programme collaboratively using agreed flexible systems;
- enabling students to see assessment as a means of describing their learning;
- assessing the level of students' current experience and understanding before embarking on new learning.

4. Professional appraisal and development: How can we continue to learn?

The teacher is accountable for:

- active participation in constructive professional appraisal based directly on the points in the job description, therefore continually working to improve learning for students;
- actively seeking professional development in any of the above points which are considered by the teacher or the school to require development.

18.3 How the teacher ensures student learning

Mkombozi's NFE approach to learning demands that a range of assessment, recording and reporting strategies be used. These strategies will provide Mkombozi's leadership, staff, students and parents with accurate and accessible data on student learning. A school leader needs to understand the purposes and principles of assessment and provide leadership in the development and implementation of assessment policies.

Guidelines for implementation:

- Learn as much as possible about the principles, purposes and practice of effective assessment.
- Reinforce the links between assessment, recording and reporting.
- Review Mkombozi's systems of reporting to ensure that they reflect the curriculum.
- Ensure that teachers understand their role in the assessment process, describe this role in the job description and include it in the appraisal process.
- Develop an assessment handbook which incorporates philosophy, purpose, principles, practice and policies.
- Refer to section 16 on page 40 ("How will we know what we have learned?") for further details on assessment.

FIGURE 7: MKOMBOZI'S NFE EDUCATOR JOB DESCRIPTION

Mkombozi's NFE Educators are passionate and motivated team players...

As an Mkombozi NFE Educator, you believe strongly in the need for social justice for the most socially excluded children and families. You function independently and in teams to work with street children and youth to assist them to improve their educational, social and psychological functioning. You develop, pilot and deliver non-formal education, using a transdisciplinary curriculum that works towards achieving Mkombozi' student profile. You also develop and deliver family life education and business training to these young people and so help them become self reliant and live independently. Your mission is to maximise the potential of street children and youth. To this end, you work hands-on with street children and with youth at Mkombozi's residential centre - through training, advice and by being a positive role model you enable them to improve their psychological and educational functioning and to ultimately become self reliant. You are responsible for working with the Education team in 10 schools, advancing a participatory research process by developing school-based actions that address the reasons that children dropout or do not attend school.

Key duties:

- Provision of NFE services to street children who cannot be enrolled in state school, using Mkombozi's transdisciplinary curriculum and NFE practice handbook.
- Advocacy for the legitimisation of NFE provision in Tanzania by delivering a NFE programme that demonstrably assists children to mainstream into formal school and become self-reliant and productive members of the community.
- Deliver family life education, the street business toolkit and apprenticeships for vulnerable adolescent girls and boys on the street and at the residential centre, thus enabling them to access opportunities to become self-reliant.
- Sharing lessons learned and experiences with teachers in the target schools as a starting point for bringing non-formal and mainstream education closer together in terms of teaching approach.
- Working with the Social Workers and Sports Teacher, you will organise and host extra-curricular activities, sports, music, and art and offer street children opportunities to reach their potential through activities designed for their "self actualisation".
- Utilise Mkombozi's practice handbook on working with street children and youth, ensuring that policies and procedures designed to uphold children's best interest are followed.
- Act as a role model and attachment for children and youth in care at Mkombozi's residential centre and on the streets; offering them love, support and play.
- Enable children to set and work towards targets, to help them address poor concentration, improve their kinaesthetic skills and build problem solving, research and communications skills.
- Offer children and youth extensive opportunities to capture their potential and high quality psychosocial support.
- With the child's social worker arrange for medical, psychiatric, and other tests that may disclose causes of difficulties and indicate remedial measures.
- Mediate conflicts among children and youth.
- Develop and review educational service plans in consultation with clients, and perform follow-ups.
- Work with 10 schools, 10 MEMKWA centres and communities to develop and implement interventions to address the problem of school truancy and dropouts, specifically supporting and enabling 4 schools to develop school based interventions that will strengthen the quality of education offered and increase the number of children enrolled and retention of them within the school.
- Facilitate training of MEMKWA facilitators in the use of Mkombozi's transdisciplinary curriculum and active learning methodologies.

Qualifications:

Professional background in social science, education or community development to at least a Bachelors of Arts Degree. Candidates from varied backgrounds will be considered; however, familiarity with community development, child development, and education will be a significant advantage. The ability to manage stress in both work and daily life and the ability to work independently and with Tanzanian and foreign staff will be critical to the success of this post.

Skills and experience:

- Minimum 2 years experience in social work / counselling / community development / education.
- Demonstrable experience of teaching in a classroom context.
- Ability to offer "added value" in the form of sport, art, drama, music, community service or other extra curricular activities.
- Knowledge of societal trends and influences, particularly with regards to vulnerable children and youth.
- Demonstrates skills in active listening, social perceptiveness, problem-solving and decision-making.
- Experience of assessing performance of yourself, other individuals, or organisations to make improvements or take corrective action.
- Possesses a service orientation and can demonstrate how s/he actively looks for ways to help people.
- Demonstrates critical thinking. Able to show evidence of his/her ability to use logic and reasoning to identify the strengths and weaknesses of alternative approaches to problems.
- Demonstrates good judgement. Able to consider the relative costs and benefits of potential actions to choose the most appropriate one.
- Ability to coordinate and strategise both independently and as part of a collective decision-making process.
- Adaptability and sensitivity to the cultural environment.
- Superior motivation, training and communication skills.
- Ability to interact in a friendly, non-judgemental manner.
- The ability to solve problems, think strategically and be flexible.
- The ability to meet deadlines and work under pressure.
- A positive attitude and a desire to learn.
- A strong work ethic.
- Fluency in English and Kiswahili (written and spoken).

19. Bibliography and key sources for additional information

General sources:

- Apple MW and Beane JA (eds). 1999. Democratic Schools. Open University Press.
- Armstrong T. 1994. Multiple Intelligences in the Classroom. Atlantic Books.
- Aubrey C. 1994. The Role of Subject Knowledge in the Early Years of Schooling. Falmer Press.
- Beane JA (ed). 1995. The ASCD Yearbook: Towards a Coherent Curriculum. Association for Supervision and Curriculum Development.
- Boomer G, Lester N, Onore C and Cook J. 1992. Negotiating the Curriculum. Falmer Press.
- Brooks JG and MG. 1998. The Case for Constructivist Classrooms. Atlantic Books.
- Edwards C, Forman G and Gandini L. 1998. The Hundred Languages of Children, The Reggio Emilia Approach - Advanced Reflections.
- Epstein D. 1993. Changing Classroom Cultures. Trentham Books.
- Farrell P. 1990. Multicultural Education. Scholastic Publications.
- Freidman RLH. 1994. Open-Ended Questioning: A Handbook for Educators. Addison-Wesley.
- Glatthorn A. 1994. Developing a Quality Curriculum. Association for Supervision and Curriculum Development.
- Harmin M. 1994. Inspiring Active Learning. Association for Supervision and Curriculum Development.
- Hayes-Jacob H. 1989. Interdisciplinary Curriculum: Design & Implementation. Association for Supervision and Curriculum Development.
- Hunter M. 1994. Mastery Teaching. Corwin Pr.
- Kincheloe JL and Steinberg SR. 1993. A Tentative Description of Post-formal Thinking: The Critical Confrontation with Cognitive Theory. The Harvard Educational Review (Fall 1993).
- Kitagawa M and C. 1987. Making Connections with Writing: An Expressive Writing Model in Japanese Schools. Heinemann.
- Kovalik S and Olsen K. 1993. ITU: Integrated Thematic Instruction: The Model. Books for Educators.
- Lipman M. 1988. Philosophy Goes to School. Temple Hill.
- Lipman M. 1991. Thinking in Education. Cambridge University Press.
- Manning M, Manning G and Long R. 1994. Theme Immersion: Inquiry-based Curriculum in Elementary and Middle Schools. Heinemann.
- Marzano RJ. 1992. A Different Kind of Classroom. Association for Supervision and Curriculum Development.
- Novak JD and Gowin DB. 1984. Learning How to Learn. Cambridge University Press.
- Paul R. 1993. Critical Thinking: How to Prepare Students for a Rapidly Changing World. The Foundation for Critical Thinking.
- Paul R, Blinker AJA, Jenson K and Kreklau H. 1990. Critical Thinking Handbooks K-3 and Gr 4-6. Centre for Critical Thinking and Moral Critique, Sonoma State University.
- Perkins D. 1995. Smart Schools: Better Thinking and Learning for Every Child. Free Press.
- Prawat RS. 1992. Teachers' Beliefs about Teaching & Learning: A Constructivist Perspective. American Journal of Education (May 1992).
- Pugh SL, Hickes JW, Davis M and Venestra T. 1992. Bridging: A Teacher's Guide to Metaphorical Thinking. National Council of Teachers of English.
- Reissman R. 1994. The Evolving Multicultural Classroom. Association for Supervision and Curriculum Development.
- Schon DA. 1983. The Reflective Practitioner: How Professionals Think in Action. Basic Books.

Assessment:

- Archbald D and Newman F. What is Authentic Academic Achievement? In Newsletters. University of Wisconsin-Madison School of Education: National Council on Effective Secondary Schools (Fall 1988)
- Herman JL, Ascherbach PR and Winters L. 1992. A Practical Guide to Alternative Assessment. Association for Supervision and Curriculum Development.
- Marzano R, Pickering D and McTighe J. 1993. Assessing Students Outcomes: Performance Assessment Using the Dimensions of Learning Model. Association for Supervision and Curriculum Development.
- Pigdon K and Wooley M. 1992. The Big Book. Eleanor Curtis Press.
- Schurr S. 1993. The ABCs of Evaluation: Twenty Six Alternative Ways to Assess Student Progress. The National Middle School Association.
- Tierney RJ, Carter MA and Desai L. 1991. Portfolio Assessment in the Reading-Writing Classroom. Christopher Gordon Publishers Inc.
- Wiggins G. 1998. Educative Assessment. Jossey-Bass.
- Wiggins G and McTighe J. 1998. Understanding by Design. Association for Supervision and Curriculum Development.

Language:

- Association for Supervision and Curriculum Development. 1993. Preparing Global Citizens: a foreign language program for all students.
- Baloche L and Platt T. Sprouting Magic Beans: Exploring Literature through Creative Questioning & Co-operative Learning. Language Arts (April 1993).
- British Columbia Ministry of Education. 1990. Language Arts through Reading: Teaching Strategies Resource Book.
- California State Board of Education. 1987. English-Language Arts Framework. California State Board of Education.
- Carter R (ed). 1990. Knowledge about language and the curriculum. Hodder & Stoughton.
- Herman J, Aschbacher P and Winter L. 1992. A Practical Guide to Alternative Assessment. Association for Supervision and Curriculum Development.
- Lee Lim H and Watson DJ. February 1993. Whole language content classes for second-language learners. The Reading Teacher.
- O'Neill J. June 1994. Rewriting the Book on Literature. Curriculum Update. Association for Supervision and Curriculum Development.
- Pappas CC and Oyler White C, with Barry A and Rassel M. April 1993. Focus on research: collaborating with teachers developing integrated language arts programs in urban schools. Language Arts.
- Pigdon K and Woolley M (eds). 1992. Big Picture. E Curtain Publishing.
- Tchudi S. 1991. Planning and Assessing the Curriculum in English Language Arts. Association for Supervision and Curriculum Development.
- Vogt ME. November 1991. An observation guide for supervisors and administrators: Moving towards integrated reading / language arts instruction. The Reading Teacher.

Language curriculum:

- Alaska 2000 Department of Education. 1993. English / Language Arts Performance Standards for the State of Alaska.
- American International School of Budapest. 1992-3. Reading & Language Arts Curriculum. American International School of Budapest.
- British Columbia Ministry of Education. 1990. Language Arts English Curriculum Guide. British Columbia Ministry of Education.
- British Columbia Ministry of Education. 1990. Language Arts English Position Statements. British Columbia Ministry of Education.
- The Frankfurt International School e.V. and International School Wiesbaden. 1993 - 94. Elementary School German Curriculum.
- International School of Tanganyika Ltd. 1992. Language Arts Curriculum. International School of Tanganyika.
- Ministere de L'Education. Elementary School Curriculum: English Language Arts I-VI. Ministere de L'Education.
- Munich International School. 1993. Draft Junior School Language Arts Curriculum. Munich International School.
- Toronto Board of Education. 1989. Benchmarks: Standards of Student Achievement. Toronto Board of Education.
- UK Department of Education and Science. 1990. British National Curriculum. The Stationery Office / National Publishing.
- Victoria Ministry of Education and Training. 1991. English Profiles Handbook. Victoria Ministry of Education and Training.
- Vienna International School. 1989. Language Arts Curriculum. Vienna International School.

Mathematics:

- Atkinson S (ed). 1992. Mathematics with Reason. Hodder & Stoughton Educational.
- Baker D, Semple C and Stead T. 1991. How big is the moon? OUP Australia and New Zealand.
- Bickmore J. (-). Language in Mathematics. Brand.
- British Schools of West Africa. 1993. Mathematics. Years 1 to 6 Curriculum. British Schools of West Africa.
- British Schools of West Africa. 1994. Mathematical Investigations and Puzzles. Yrs 1-6. British Schools of West Africa.
- Burns M. 1986. Collection of Math Lessons from Grades 3-6. Heinemann.
- Burns M. 1987. Collection of Math Lessons from Grades 1-3. Math Solutions Publications.
- Burns M. 1990. Collection of Math Lessons from Grades 6-8. Math Solutions Publications.
- Burns M. 1991. Math by all means: Multiplication, Grade 3. Math Solutions Publications.
- Burns M. 1994. Math by all means: Place Value, Grades 1-2. Math Solutions Publications.
- Burns M. 1994. Math by all means: Probability, Grades 3-4. Addison-Wesley.
- Burns M. 1995. Math by all means: Division, Grades 3-4. Cuisenaire Publications.

- California State Department of Education. 1982. Handbook for Planning an Effective Mathematics Program (Kindergarten - Grade 12).
- California State Department of Education. 1985. Mathematical Framework for Californian Schools.
- California State Department of Education. 1987. Mathematics, Model Curriculum Guide, (Kindergarten - Grade 8).
- Department of Education and Science. (-). Mathematics from 5 to 16. The Stationery Office / National Publishing.
- Department of Education and Science. (-). Mathematics in the National Curriculum. The Stationery Office / National Publishing.
- The Design Council. (-). Signs of Design (Mathematics). Newgate Press.
- ECIS Mathematics Committee. 1993. The Centroid. European Council of International Schools.
- Equals. 1992. Sharing Resources. University of California.
- Fennema E (ed). 1991. Integrating Research on Teaching and Learning Math. State University of New York Press.
- The Frankfurt International School. (-) Elementary School Mathematics Curriculum.
- Griffiths R. 1991. Books you can count on: Linking Mathematics and Literature. Heinemann.
- Herman JL, Aschbacher PR and Winters L. 1992. Reaching Potentials. Appropriate Curriculum and Assessment for Young Children.
- Kamii C. 1982. Number in Pre-school and Kindergarten. National Association for the Education of Young Children.
- Kamii C. 1986. Young Children Continue to Re-invent Arithmetic. Teacher College Press.
- Mathematical Science Education Board National Research Council. 1990. Reshaping School Mathematics. National Academy Press.
- National Council of Teachers of Mathematics. 1991. Assessment Mathematics: myth, models, good questions and practical suggestions. National Council of Teachers of Mathematics.
- Office for Standards in Education. 1993. Teaching and Learning of Number in Primary Schools. Her Majesty's Stationery Office.
- Pandey T. (-). A Sampler of Mathematics Assessment. Californian State Department of Education.
- Parker R. 1993. Mathematical Power: Lessons from a Classroom. Heinemann.
- Randall C. 1987. How to Evaluate Progress in Problem Solving. National Council of Teachers of Mathematics.
- Stenmark JK. 1989. Assessment Alternatives in Mathematics, An Overview of Assessment Techniques That Promote Learning. EQUALS Assessment Committee of the California Mathematics Council.
- Van de Walle JA. 1990. Elementary School Mathematics Curriculum. Longman.
- Willoughby SS. 1990. Mathematics Education for a Changing World. Association for Supervision and Curriculum Development.

School management:

- Achilles CM. 1987. A vision of better schools. Instructional Leadership, Concepts, Issues and Controversies.
- Bartlett K. 1989. Translating Philosophy Into Action. International Schools Journal 18. European Council of International Schools.
- Block P. 1987. The Empowered Manager: Positive Political Skills at Work. Jossey-Bass.
- Boyer EL. 1994. Towards a Coherent Curriculum. Association for Supervision and Curriculum Development.
- Dimmock C (ed). 1993. School-based Management and School Effectiveness. Routledge.
- Fullan M. 1991. The New Meaning of Educational Change. Continuum Publishing Group.
- Fullan M. 1992. What's Worth Fighting for in Headship. Oxford University Press.
- Fullan M. 1993. Change Forces. Falmer Press.
- Fullan M, Bennet B and Lilheizer-Bennet. 1990. Linking Classroom and School Improvement. Educational Leadership, 47(8):13-19. Association for Supervision and Curriculum Development.
- Fullan M and Hargreaves A. 1992. What's Worth Fighting for in Your School. Open University Press.
- Hopkins D. 1991. The Empowered School. Continuum Publishing Group.
- Poster C and D. 1993. Teacher Appraisal. Routledge.
- Reynolds D and Cuttance P. 1992. School Effectiveness: Evaluation, Improvement and Development. Continuum Publishing Group.
- Southworth G (ed). 1987. Readings in Primary School Management. Falmer Press.

Science:

- American Association for the Advancement of Science. 1989. Science for all Americans: A project 2061 report on literacy goals in science, mathematics and technology. American Association for the Advancement of Science.
- Black P. 1993. The Purpose of Science Education. In ASE Science Teachers Handbook - Secondary. Hull R (ed). Simon & Schuster.
- Duncan A and Dunn W. What Primary Teachers Should Know About Assessment. Hodder & Stoughton.

- Harlen W(ed). 1985. Primary Science - Taking the Plunge. Heinemann Primary.
- Harlen W. 1993. Teaching and Learning Primary Science. Second Edition. Paul Chapman.
- Holbrook J. June 1992. Project 2000 plus Scientific and Technological Literacy for All. Science Educational International.
- Millar R. 1993. Science Education and Public Understanding of Science. In ASE Science Teachers Handbook - Secondary. Hull R (ed). Simon & Schuster.
- Novac JD and DB, and Godwin D. 1984. Learning How to Learn. Cambridge University Press.
- Pigdon K and Woolley M (eds). 1993. Big Picture. E Curtain Publishing.
- Prawat R. May 1992. Teachers' Beliefs about Teaching and Learning: A Constructivist Perspective. American Journal of Education.
- Yager RE. September 1991. The Constructivist Learning Model: towards real reform in science education. Science Teacher.

Social studies:

- Aboud F. 1988. Children and Prejudice. Blackwell.
- Anderson CC, Niklas SK and Crawford AR. 1994. Global Understanding: A Framework for Teaching and Learning. Association for Supervision and Curriculum Development.
- Association of American Geographers. 1993. Guidelines for Geographic Education: Elementary & Secondary Schools. Association of American Geographers.
- Blyth A. 1990. Making the Grade for Primary Humanities. Open University Press.
- Blyth J. 1985. Place and Time with Children Five to Nine. Routledge.
- Bragenshaw D and Thomson WS (eds). 1992. Multicultural Education: A Global Perspective. The American Forum.
- Campbell J and Little V. 1989. Humanities in the Primary School. Falmer Press.
- Cowin R. 1988. Teaching for a Global Society: using Literature in the Elementary Classroom. Literature in the Classroom: Readers, Texts and Contexts. National Council of Teachers of English.
- Craft A and Klein G. 1989. Agenda for Multicultural Teaching. Longman for School Curriculum Development Committee.
- Durbin G, Morris S and Wilkinson S. 1990. A Teachers Guide to Learning from Objects. English Heritage.
- Fisher S and Hicks D. 1991. World Studies 8-13: A Teacher's Handbook. Oliver & Boyd.
- Foley M and Janikoun J. 1992. The Really Practical Guide to Primary Geography. Nelson Thornes.
- Franz D (author/editor). 1987. Development in Africa, Asia and Latin America: Global Perspectives in Education. The American Forum.
- Gadsen A. 1991. Geography Through Story. The Geographical Association.
- Hicks D and Steiner M. 1985. World Studies 8-13: Making Global Connections. Oliver & Boyd.
- Hughes P. 1991. Gender Issues. Scholastic Publications Ltd.
- Kneip W. 1987. Next Steps in Global Education: A Handbook for Curriculum Development. The American Forum.
- Little V and John T. 1986. Historical Fiction in the Classroom. The Historical Association.
- Lomas T. 1993. Teaching and Assessing Historical Understanding. The Historical Association.
- Low-Beer A and Blyth J. 1983. Teaching History to Younger Children. The Historical Association.
- Lynch J. 1992. Education for Citizenship in a Multicultural Society. Cassell.
- McFarlane C (ed). 1991. Theme Work: A Global Perspective in the Primary Curriculum in the 90's. The Development Education Centre.
- Midwinter C. 1994. Benin: An African Kingdom. World Wildlife Fund.
- Mills D. 1988. Geographical Work in Primary and Middle Schools. The Geographical Association.
- Morgan W. 1993. Geography in a Nutshell. The Geographical Association.
- The National Curriculum Council. 1990. Education for Economic and Industrial Understanding. The National Curriculum Council.
- The National Geographic Society. 1990. Maps, the Landscape and Fundamental Themes in Geography.
- Oxford Development Education Centre. 1992. Books to Break Barriers: A Guide to Multicultural Fiction for Young People. Oxfam.
- Parker WC. 1991. Renewing the Social Studies Curriculum. Association for Supervision and Curriculum Development.
- Pike G and Selby D. 1988. Global Teacher, Global Learner. Hodder & Stoughton.
- The Primary Schools and Industrial Centre. 1989. The Primary Enterprise Pack. The PNL Press.
- Rogers PJ. 1990. History: Why, What and How? The Historical Association.
- Skelton C. 1989. Whatever Happened to Little Women? Gender Issues and Primary Schooling. Open University Press.
- Smith J. 1985. A Questioning Approach to Study Skills in History. The Historical Association.

- Tinkler D. 1990. Social Education for Australian Primary Schools. Macro-View Educational Publications.
- Tway E and White ML. 1988. Literature and International Understanding: Literature in the Classroom: Readers, Texts and Contexts. National Council of Teachers of English.
- Tye K (ed). 1990. Global Education: From Thought to Action. Association for Supervision and Curriculum Development.
- UK Department of Education and Science. 1988. History from 5-16. Curriculum Matters 11. The Stationery Office / National Publishing.
- UK Department of Education and Science. 1991. Geography in the National Curriculum (England). The Stationery Office / National Publishing.
- UK Department of Education and Science. 1991. History in the National Curriculum (England). The Stationery Office / National Publishing.
- UK Her Majesty's Inspectorate. 1989. Aspects of Primary Education: The Teaching of History and Geography. The Stationery Office / National Publishing.
- UK Manchester City Council Education Department & Field Studies Council. 1993. Outdoor and Environmental Education in the National Curriculum. Field Studies Council.
- Walford R (ed). 1985. Geographical Education for a Multicultural Society. Geographical Association.
- Walmsley S. 1994. Children Exploring Their World: Theme Teaching in Elementary School. Heinemann.
- Whitaker B (ed). 1985. Teaching about Prejudice, MRG Report 59. Minority Rights Group.
- Wiegand P. 1993. Children and Primary Geography. Continuum Publishing Group.
- Wilson J. 1991. Reading Around Series #4: Concept Mapping. The Australian Reading Association.
- Wilson V and Woodhouse J. 1990. History Through Drama. The Historical Association.
- Wright M. 1992. The Really Practical Guide to Primary History. Nelson Thornes.
- Young KA. 1994. Constructing Building, Bridges and Minds. Heinemann.
- Zarnowski M and Gallegher AF (eds). 1994. Children's Literature and Social Studies: Selecting and Using Notable Books. Kendall Hunt Publishers.

Notes on Additional Sources:

Notes:

Street children are robbed of their dignity by our ignorance and fear.

Get informed. Give it back.

■ P.O. Box 9601 Moshi, Tanzania ■ Tel: (255) 27 2754793 ■ Fax: (255) 27 2753410 ■ info@mkombozi.org ■ www.mkombozi.org ■