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ABSTRACT

This book contains 10 papers reviewing eastern Africa's experience with "education with production" (EWP), which is a term referring to arrangements whereby a socially and economically meaningful component of production is combined with education or training. The following papers are included: "Introduction" (Wim Hoppers, Donatus Komba); "International Trends in Combining Education, Training, and Productive Work" (Wim Hoppers); "The Experience of Research through Networking" (Wim Hoppers, Donatus Komba); "Education with Production: Approaches to a State-of-the-Art" (Kenneth King); "Tanzania: Education for Self-Reliance Dimension of Education with Production" (Donatus Komba, Elisha Temu); "Education with Production in Kenya" (Daniel N. Sifuna, John O. Shiundu); "Education with Production in Zambia" (Patrick Haamujompa); "Education for Production in Ethiopia" (Birhanu Dibaba, Deneke Mokuria); "A Synthesis of Current Knowledge of EWP in the Region" (Donatus Komba); "Toward an Expanded Conceptual Framework for Education with Production" (Wim Hoppers, Donatus Komba); and "EPW Issues for Policy Development, Research, and Networking in the Eastern Africa Region" (Donatus Komba). Contains 150 references. (MN)

CESO PAPERBACK NO. 21

Productive work in education and training

a state-of-the-art in Eastern Africa

Editors
Wim Hoppers
Donatus Komba

The task of the Centre for the Study of Education in Developing Countries (CESO), as its name implies, is to contribute to the study of the problems involved with education and development in the Third World. CESO also offers consulting services with respect to policy issues, field projects and the evaluation of educational training programmes. A specialized library offers extensive information about education in the Third World.

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Productive work in education and training

a state-of-the-art in Eastern Africa

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Wim Hoppers
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Contents

II. The state-of-the-art of Education with Production in selected countries of Eastern Africa

Introduction

The basic concept that underlies this book is 'Education with Production' (EWP). This refers to arrangements whereby a socially and economically meaningful component of production has been combined with education or training (EPTA, 1985:6). In Africa EWP is mostly associated with the incorporation of an element of practical training and of production into the activities of primary and general secondary education. There has also been much interest in the integration of production and skills training, especially in non-formal programmes for out-of-school youth. Here we shall limit our discussions to these two forms of EWP.

In a broader context debates on EWP among educationists and economists have become part of the controversies surrounding the merits and demerits of the 'vocationalization' of general education. Consequently, the literature on vocational education shows many references to production and work as part of pupil activities. Yet it should be emphasized that, although they may be applied in the same programme, 'vocationalized education' and 'education with production' are not identical concepts. Not only do they spring from different philosophical traditions, they also have different concerns that have important implications for organization, curriculum structure, financing etc. A central distinction is that vocationalization, in a pragmatist tradition, aims to make education more practical and above all a better preparation ground for working life after school. EWP, on the other hand, with its roots in the socialist concept of polytechnic education as well as in various populist traditions, as will be seen later, is interested in the educative value of work as such and its potential to make schools practise self-reliance, and to make the school part of the community.

In practice we find that the distinctions are not always so clearly made. The educational scene in Eastern Africa offers a wide variety of innovations in work-oriented education and also of shades of opinion as to what they represent. In several countries programmes with different philosophies and aims exist side by side in the same segment of the education system, and even in the same schools. In Tanzania secondary schools have a vocational basis as well as Education for Self-reliance projects. Zambian primary schools offer 'practical subjects', but pupils are also involved in the school's 'production unit'. In Lesotho some high schools experiment with industrial arts, while others show efforts to develop an EWP approach. Separate but related innovations in different countries concern reform of examinations, decentralised administration, community schools, school co-operatives.

In East- and Southern Africa there is a small network of researchers which in 1986 began to promote investigations into the area of education with production and vocationalized education at a time that this had become somewhat 'suspect'. The aim of this network, called 'Education with Production in Theory and

Action' (EPTA) has been to collect and examine empirical evidence about the actual process and outcomes of including work-elements in the curriculum, and in so doing work together with policy-makers and practitioners to help understand the policies and practices of such strategy as a basis for further decision-making.

The activities of the network have been based on the assumption that orienting education to work was not a uniform prescription that worked the same way in every situation and as such could receive an international label of 'right' or 'wrong'. Empirical evidence would provide a basis for mapping out what would probably be a wide variety of experiences in different systems and institutions whose relative value could be ascertained on the basis of a number of indicators but within the specific context within which the programme was implemented. Mapping out the variations in experience, as well as the strong and weak points in process and outcomes would help local and national decision-makers to identify their own lines of action, and thus provide a better basis for policy-dialogue and planning.

This book is the result of the research work undertaken by members of the EPTA network over a number of years in the late 1980s. Its design, implementation and outcomes have been discussed over the years with a variety of researchers, policy-makers, and practitioners in the East- and Southern Africa region. The research was seen as a first step in mapping out the variations in EWP and examining available knowledge about the subject. It has been hoped that the interest will remain and that more detailed empirical work on experiences and outcomes of EWP activities would follow.

Here we acknowledge the contribution made by the Swedish International Development Authority (SIDA), both in terms of funding the studies together with the review exercises that accompanied them, and in terms of moral support and encouragement to carry on with the work. The Centre for the Study of Education in Developing Countries (CESO) in The Hague, Netherlands, provided technical support for the research including mediation for access to sources of information and other international expertise in vocational education.

The book is divided into three parts. Part I provides an overview of the nature and state-of-practice on EWP in general terms, and it highlights the process of the research and the starting points on which it was based. Part II consists of chapters summarising the outcomes of the state-of-the-art studies in the four countries where the research was carried out: Tanzania, Kenya, Zambia, and Ethiopia. Finally Part III summarises these outcomes and analyses them in the context of the initial research framework. It also outlines a more expanded conceptual framework that arose from the research.

Wim Hoppers and Donatus Komba,
October 1993.

Part I

Education with Production and the nature and experiences of the EPTA programme

This first part of the book will review international developments in the field of Education with production and explore the origin and development of the EPTA programme in Eastern Africa. It discusses the nature and basic characteristics of EWP, and highlights its interpretation and historical expression across different parts of the world. Thereafter the focus will be on the approach, structure and development of the programme rather than on the substance of the research activities themselves. Therefore much attention will be given to the experience of initiating and maintaining a research interest through a network of small groups of researchers based in different countries of Eastern Africa. The programme has been regarded as a useful mechanism for stimulating attention to an area that was of critical importance in efforts to improve the relevance of education. It also helped to improve the capacity for planning and for conducting policy-related educational research. A review of the experiences of the network may illuminate the potential as well as the problems and dilemmas of such networks in the African situation.

Part one is divided into three chapters. Chapter 1 will review the different traditions in EWP and analyze these within the context of diverging socio-economic and political contexts around the world. It will also draw attention to recent viewpoints and raises issues regarding the present prospect for EWP. Chapter 2 deals with the nature and scope of EWP research in the region around the time of the inception of the programme. It will trace the origin and development of the network and the research programme. Finally there will be some observations about the idea of networking in educational research as it materialized in the programme together with some lessons that were learned from these. Chapter 3 will present the conceptual framework that guided the EPTA research programme.

International trends in combining education, training, and productive work

Wim Hoppers

The nature of Education with Production (EWP)

In many parts of the world there has been a longstanding fascination among progressive pedagogues with the idea that education and training cannot be meaningfully separated from manual work. In the course of European history formal schooling had always been far removed from the production environment and the same applied to most forms of professional training. Manual skills, on the other hand, were typically acquired in the family or in the workshops (Visalberghi, 1979). This antagonism between the world of schooling and that of work was part of a long-standing cultural tradition that has influenced modern perspectives on education the world over.

Yet, in modern times there have been continuous efforts to transcend the barriers and find ways to integrate essential elements of the two separate domains of activity. The efforts have generally stemmed from an awareness that the dividing lines not only between education and training, but also between both of these and productive work, are artificial and do not reflect the realities of life where in a broad sense learning and working are but two facets of the same process. Moreover there has been a conviction that the combination of intellectual and manual training had important pedagogical advantages.

Efforts at instigating EWP have been undertaken in many parts of the world and in situations that differed widely in terms of socio-cultural characteristics, political and ideological systems, and levels of development. Yet in most cases the notion of EWP has tended not to be in accordance with prevailing thinking about how education should be conducted. Thus:

> "to the extent that education with production attempts to find relevant ways of combining theory and practice, it represents a subversive mechanism which runs against the common idea that individuals' lives are divided into a span of time just to study and another just to work" (Corvalan-Vasquez, 1988:2).

For many educational theorists the idea of linking theory and practice, school and community, of bringing the experience of life itself to the school, was a source of inspiration in attempting to reform the prevailing mode of education making it much more responsive to rapid changes in the socio-economic environment and to the broad learning needs of children. This applied to Dewey's pragmatic thinking, the views of the early Soviet thinkers on education, as much as to

Gandhi or Nyerere when they attempted to outline the principles for a 'new' education. The most prominent EWP examples, therefore, came to be associated with innovative approaches to the very pedagogical principles of schooling: such as the polytechnic education approach and the labour classes in socialist countries, the Cuban Schools in the Countryside, Gandhi's basic education programme, Education for Self-reliance in Tanzania, and the American work-study colleges.

In broad terms the direct interaction between education, training and production has been seen to serve a variety of pedagogical, economic and social goals, although in practice the emphasis varies widely. In pedagogical terms the involvement of pupils or trainees in productive work is meant to have a number of advantages. It may help in the development of a broad range of practical and problem-solving skills, or also of relevant production skills. Learners may get directly acquainted with the realities of work and increase their understanding of concepts in science and the role of different technologies.

Participation in productive work is also regarded as having an important affective dimension as it may contribute to certain traits of character, such as responsibility, perseverance, creativity, discipline. It is often expected to contribute to an acceptance of work as an integral part of everyday life not only for adults who may combine it with continued education but also for schoolgoing young people. By so doing learners are meant to overcome their special status and maintain or intensify their participation in society. It is in this context of lowering the barriers between institutions of learning and the local community and economy that productive work assumes an important social significance.

In economic terms the principle of combining education and training with productive work has frequently had great attraction to politicians who wish to see institutions of learning make a direct contribution to cost-recovery in education or economic development. In times of economic downturn and financial constraints institutions are quickly challenged to create additional resources through the sale of goods or services. It is further expected that involvement in such productive activities will not only improve the quality of skill acquisition but will also give graduates advantages in the work-place: such as easier access to jobs, higher productivity at work, and even the ability to create one's own work.

In poorer countries the integration of productive work in education or training has become specially attractive because of these assumed economic advantages. Reduction of running costs of institutions could enable more young people to enrol or a minimum quality of instruction to be maintained in the face of dwindling government support. In addition, it is seen as a source of income for those who cannot afford to be without work but wish to further their education or training.

Given the above considerations underlying the efforts to combine education or training with production, it is not surprising that persons or organisations interested in reforming society have often regarded this approach as a basis for

altering the methods, structure, and even the goals of learning and, beyond this, as a major contribution to the development of a 'new society'. In many developing countries, in particular, productive work offered a basis for moving away from imposed educational systems that catered only for the few and ignored local culture. It helped to re-think the role of education and training in society and to provide chances for access by all.

Although the past advocacy of EWP along these lines nas drawn much attention and has come to be associated with progressive pedagogical thinking, under different names it has also pre-occupied mainstream educationists and policy-makers. For example during the 1970s and 1980s it attracted interest for its potential to help ease the transition of school leavers into the labour market. In Europe, this effort to step up vocational preparation led to an upsurge in work-experience programmes some of which included hands-on experience with different kinds of work. More recently more attention came to be given to orientating pupils to technological changes and their impact on forms of work and skill requirements. The need to encourage basic design and production skills have often led to the actual construction of prototypes.

What the above efforts all have in common is the desire to link theoretical learning very directly to practical work, whereby the actual production of a good (or service) constitutes an essential part of the learning experience. One may argue that whether the linkage is effectuated on ideological grounds - for example to bridge the gap between school and community - or on purely pragmatic pedagogical grounds - such as ensuring mastery of practical skill - the key element of bringing two different sources of learning together remains.

Given the present rather diverse application of the notion of EWP, it would help to 'de-ideologise' it and define it more broadly: as an approach to learning involving an institutionalised interaction between the development of knowledge and skills on the one hand and the production process on the other hand. The nature, format, and purpose of the interaction is of secondary importance to the situation that the subject participates in both processes within the same programme of learning and that there is some degree of planned and intentional interaction between them. 'Production' is defined as those activities aimed at generating goods or services that have economic and/or social value. Such activities may include any stage in the production process, from design and planning to costing and marketing.

Education with Production is therefore different from other approaches to education in that productive work is regarded as an integral part of the learning process. Rather than constituting a possible, if not anticipated, future outcome of learning it becomes a concurrent activity, in the view that learning and working must always go together in some form as vital benefits can be derived from their interaction.

Although this monograph will touch upon other combinations of learning and working the emphasis is on the integration of elements of productive work into programmes of general education and of vocational training. Thus it will largely look at the combination from the perspective of 'learning' rather than from the perspective of 'working', i.e. *Education* with Production and *Training* with Production rather than *Production* with Education or Training. For convenience sake the term EWP will be used referring mostly to both Education and Training with Production.

An important implication of the above qualification of EWP is that it enables a basic distinction to be made between the general idea of combining learning and working and its actual application within different institutional, socio-economic and cultural contexts. There is nothing inherently 'liberating' about EWP, as it can be - and has been - deployed as a very effective tool for conditioning people for entry into pre-determined slots in the labour hierarchy, both within capitalist and socialist economic systems. Everything depends on how the concept, with its often lofty aims, is translated into learning experiences and the actual opportunities created for reflection and the development of a variety of basic skills and competences.

Another implication is that the concept cannot easily be fitted into common definitions of vocational education and training. The fact that there is an element of productive work does not automatically designate the activity as a vocational one; nor does a vocational programme automatically lead to the involvement of trainees in production. As an approach to learning the concept has been applied in efforts to enhance the quality and relevance of general education curricula as well as those in vocational and technical training institutions.

Neither is the combination of education and actual productive work a necessary characteristic of Work Experience Programmes. The involvement of pupils in productive work may be utilized to increase the effectiveness of such programmes, as actual involvement in work may help to promote learning about production processes or the operations of the labour market. But 'work experience' has been given many interpretations and often stops short of a direct 'hands on' experience.

Therefore, from case to case, from country to country, there is a need to problematise the concept, and to question the rhetoric of EWP programmes in terms of how it is being implemented in practice and what actual outcomes and impact it leads to, whether at the level of individual school leavers' lives or at the levels of community or society. Similarly there is a need to scrutinize the interpretations of the concept over time, as clearly in situations of rapid social and political change or of economic re-structuring the approach is used in novel ways to cater for new demands.

Traditions of combining education and productive work

The actual interpretation and emphasis given to underlying considerations of EWP has varied greatly in different societies, cultures and historical periods. The rationales outlined before do not necessarily run parallel and, indeed, their hierarchy and their changing attraction over time, together with the many constraints in applying them, has produced vastly differing, if not contradictory versions of combining learning and working.

In this section we shall review some major traditions of thought and practice in combining education, training and productive work. The outline will have to be a cursory one, but may be sufficient to illustrate the wide divergence of characteristics of EWP programmes. For reasons of convenience we shall make a distinction between traditions arising from liberal Western philosophy, socialist traditions influenced by marxist thought, and indigenous traditions in the non-Western world some of which have been heavily influenced by liberal or marxist thought.

Western pragmatist traditions

For a long time education within the Western world has been strongly influenced by the division between physical and intellectual work. For those who were privileged to have access to schooling it was a preparation for intellectual and cultural pursuits and thus to be freed from the enslavement of manual labour. With the development of mass education a distinction was long maintained between streams preparing for an intellectual career and those leading to manual occupations. In the latter, particularly where the emphasis was on vocational preparation, more room was gradually created for practicals in school workshops and, in some countries, for combinations with industrial apprenticeship.

In general education it was a growing pragmatist perspective on the nature and purpose of education that provided an impetus for greater attention to the world of work. This perspective rejects the distinction between 'pure' and 'applied' knowledge, and rather than the intrinsic value of academic disciplines it takes its departure point from the experiences and problems of everyday life. There is a great pre-occupation with the relevance of the curriculum in terms of students motivation and the prospect of applying school learning to real problems (Lauglo, 1983:290). In this view there is a justification for preparing pupils more explicitly for their future role as workers. The decision of choosing an occupation, the problems of finding a job, and even the acquisition of practical (employable) skills are considered to be a concern of the school. It is suggested that apart from reflecting pragmatist educational theory the interest in preparation for work stems from the current mass character in high schools which leaves more scope for the above concerns (Lauglo and Lillis, 1988:4).

This pragmatist perspective has found widespread application in North-America and lies at the basis of the experimentations with comprehensive schooling in many parts of Europe. In some countries the interest in vocational preparation led to efforts to enable pupils to acquire hands-on experience with different kinds of work. For example in the 1960s Sweden introduced 'practical vocational orientation' as a new subject in grade 8. Pupils were placed for short period in two or three different work places so as to give them:

> "an opportunity of acquiring personal experience of a limited number of jobs or vocational fields and, accordingly, a concrete view of the implications and demands of duties and working conditions in these occupations or occupational fields; secondly, a practical opportunity of investigating whether he has the aptitudes, interests and other qualities required for the jobs in question; and thirdly a closer knowledge of the world of work..." (Marklund, 1988:176).

The concern about youth unemployment during the 1970s and 1980s stimulated also in other countries the interest in such work-experience programmes so that they became a regular feature at the upper end of compulsory education. The European Community took a direct interest by including a number of pilot projects with work-experience as their central theme in its second Action Programme on the transition of young people from education to adult and working life (1983-1987) (Meyer, 1985). Typically the schemes focused on increasing the understanding of the world of work and on the development of personal and social skills deemed necessary for economic survival. However, not all such programmes contained an the element of practical experience in a real or simulated place of work, or viewed such element as a valuable basis for experiential learning (Watts, 1983).

Work-experience programmes are clearly a variant of what Lauglo and Lillis termed the 'hard' emphasis within the pragmatist perspective on the teaching of highly specified useful skills (Lauglo and Lillis, 1988:4). They became attractive when schools were challenged to contribute directly to easing the transition of school leavers into the labour market. Their popularity decreased, however, when the employment situation improved and part of their functions were taken over by new transition programmes following the end of compulsory education (see below). Practice has shown that even during the popular period the programmes remained short and occupied only a marginal place in the school curriculum. Often they functioned as part of a careers guidance programme (Meyer, 1985). They clearly had to compete for attention with many other social concerns to which the schools have to address themselves. Moreover they tended to become embedded within the broader social tracking function of schooling (Parker, 1983). There has been no attempt in mainstream educational institutions to make work

a central vehicle for learning throughout the curriculum or to make the combination of study and work an experimental ground for social transformation.

In some countries of Europe more extensive experiences with combining learning and working have been obtained in the training field. Efforts have been made to link institution-based vocational training to periods of in-plant training through an arrangement of alternation (so-called dual vocational training programmes or 'alternance'). In this way a more theoretically oriented training programme was complemented by a practical development of skills and competencies within real working conditions. This was seen to have major advantages of making training more effective, easing the transition from training into working life, and transferring some of the costs of training to the firms that were its main beneficiaries.

The idea of alternance has strongly influenced the development of transition programmes for the post-compulsory school age-group (16 to 18) in Europe. It enabled youth who could not enrol for continued academic or vocational education to benefit from a short period in which relevant work-experience would be combined with skills training. Transition programmes, often based in special centres and in places of work, have become more institutionalized and have often led to a transfer of work-experience out of the general education system.

Socialist traditions

While in Western pragmatist thinking productive work may be one experience among others that could in certain situations be useful to pupils, in marxist thought its role as a source of learning takes a more central position. Lauglo and Lillis (1988:5) note that in socialist countries the original ideal was to weaken the institutional boundaries between education and productive work. In countries like China, during the Cultural Revolution, students were sent to the countryside to participate in production and to receive part of their political education directly from workers and peasants. In later stages of socialist development the vocational value of such work activities received more attention.

In the marxist interpretation polytechnic education has continued to refer to those elements in the curriculum which concern learning about production and the acquisition of work-related skills (labour education).

> "Polytechnical education is that field of general education which is oriented to the acquisition of fundamental facts about the technical, technological and organisational aspects of work. Such education should provide insights into the world of work and should thereby contribute to the student's ability to perform technical activities" (Pfeiffer and Wald, 1988:3).

A key feature was the direct interchange between theory and practice. This would help to understand the basic concepts of science and technology, ensure a close connection between schools and the world of work and provide an introduction to the main trades.

Over time the institutional format of the polytechnic element has undergone some changes in different countries. Some of these changes arose from the need to give due attention to the body of knowledge underlying production processes. Thus pedagogical needs led to an actual separation of learning activities each following its own inherent logic: the study of production and the study of science became different school subjects. Production practice remained a distinct activity but its nature has varied according to country setting and level of education: ranging from handicrafts and small farms to full participation in production in factories. In terms of location there has been a tendency to shift the practical work from outside places of work to farms and workshops within the schools (Soviet Union, Cuba, or China during the Cultural Revolution) or to specially designed polytechnical centres (former German Democratic Republic). With these developments the full integration, i.e. the simultaneous occurrence of structured learning and organised work practice, was abandoned in favour of a parallel arrangement whereby learning and working were broken down into separate activities but supposedly connected to each other.

It is important to note that, like in the Western pragmatist traditions, in polytechnical education the emphasis has remained throughout on the pedagogical value of the involvement in productive work. This value concerns both the process of learning and its outcomes. But whereas in the West learning objectives in the past have mainly related to work as an end in itself: orientation to the labourmarket, 'getting the feel' of certain types of work, more effective preparation for jobs, the polytechnic variant has stressed the value of work experience as a basis for acquiring broader understandings and competencies: concepts of science, production processes, importance of technologies, basic technical skills. Beyond this the latter tradition attempted to pursue clear socio-political goals such as a recognition of the importance of work, a positive attitude towards manual labour, a contribution by the school to local development. This reflected the great belief in socialist thought of using education as a means of 'moulding' people and society into something different.

The economic dimension of polytechnical education became more prominent where the principle was introduced in settings of developing countries. In China as from the late 1950s, for example, productive labour was introduced in technical and later in general education schools partly as a more desirable pedagogical principle, partly as a means to contribute to production and by so doing reduce the costs of education and training. Later the inducement to educated young people to remain in rural areas became an additional goal (Lofstedt, 1989:4). The economic rationale was the basis for the many part-work-

part-study schools in rural areas. Other forms of EWP that emerged in the 1950s were schools run by factories, schools having contractual links with factories; school-based factories or farms, and institutions that were combined factory-and-school.

After the cultural revolution the emphasis on education with production decreased dramatically. Productive work and labour classes came to occupy only a very small part of the curriculum and developed rather separately from other learning activities. Much of the work in school-run factories appears now to be left to full-time workers (Lofstedt, ibidem). The change in the ideological climate during the 1980s together with the dominance of the economic argument made that EWP as an educational principle changed in character.

It is striking to note how the polytechnical and labour education variants of education with production have been adopted in many developing countries, both those that professed allegiance to a marxist ideology and those that followed a softer version of socialism or a 'mixed' socio-economic system. Labour education became a school subject in countries like Vietnam, Ethiopia and Angola. Other countries introduced productive work as a separate school activity that was to be both a basis for learning practical and technical skills and a source of income for the institution.

In Zimbabwe the need for a reorientation of education towards a system that would serve the rapid development of agriculture and industry was a prime motivation for the promotion of education with production. Practical work could help to develop basic technical and agricultural skills, an understanding of science and technology in the local context, and moreover an interest in productive work and life in rural areas (Mutumbuka, 1984). The notion of learning while working and combining theory with practical application has - at least at the rhetorical level - been accepted as a principle of curriculum development in a variety of countries, particularly in Africa.

Indigenous traditions in less industrialized countries

In Third World countries it is rather difficult to disentangle the various influences that have shaped the role and place of productive work in the education and training curricula. Policy statements and even programme descriptions reflect a current official vision concerning the role of education in personal and national development. This does not necessarily take account of other considerations which also permeate the thinking and actual practice in the practical component. Thus where official policy may use formulations derived from the polytechnic tradition, de facto influences may also have come from local traditions which themselves may be indigenous or be a mixture of historical influences from abroad.

In their review of vocationalization perspectives Lauglo and Lillis refers to 'populist' sentiments underlying the interest in productive work. These sentiments look to engagement in physical work as a means of identifying with the common people and in this way opposing the economic, cultural or political dominance of an urban elite or rural aristocracy. It may also be seen as a reaction against industrialism and its associated urban-centred development strategy (Lauglo and Lillis, 1988:6). In this context productive work assumes special moral and social value as a source of personal and collective self-reliance and of character building. The writers detect such populist influences across different ideologies, such as in Scandinavian primary education, in the Chinese rationale for labour classes, and also in Tanzania's Education for Self-reliance. In Zimbabwe it was officially recognized that the roots of EWP were also in

> "the bitter experience of Africa and the third world which, in the last 20 years, has placed so much hope and resources in education for the masses, only to find that the effect of education is not developing at all, but the alienation of the young through cultural and intellectual colonisation" (Mutumbuka, 1984:5).

In many other countries in Africa the rationale for introducing productive work was not so clearly articulated in ideological terms. But there was a sense that the school as an alien institution should be much closer to the lives of ordinary people and reflect more directly the needs and concerns of the community. This realization grew stronger as participation in formal schooling increased, while at the same time opportunities to utilize schooling as a channel towards modern sector and white-collar employment diminished. There was also an overtone of re-establishing a linkage with indigenous traditions of education whereby knowledge and skill development was an accepted community responsibility to be carried out informally while participating in joint activities and formally through collective instruction (for example M'Bow and Faure, 1989). In this effort a deliberate attempt has often been made to reach beyond the colonial or feudal experience of practical education as a tool for continued subjugation and exploitation and to give the involvement of learners in work activities a new meaning along lines indicated above.

Often such thinking has been expressed in rather pragmatic language under headings of 'education in the service of development'. In Ivory Coast, for example, productive work in agriculture in primary schools became a way of opening the school to the environment, of creating an interest in working on the land, of contributing to awareness-raising about the 'dynamic' role of people in using the land for the benefit of collective progress. In this context the prime focus is not so much on knowledge and on agricultural techniques as on attitudes and awareness. In Rwanda productive work in primary schools had been introduced as part of a drive at 'ruralization' of the curriculum. This would help

pupils to participate in developing the resources in their local environment and at the same time learn a trade that could be useful after leaving school. This conception of limited productive work to back up the development of basic knowledge, skills and attitudes essential for achieving personal self-reliance of national development is very widespread. By itself this has been sufficient reason to include an element of production in most school systems throughout Africa, whether as an activity integrated in the curriculum (as part of 'practical subjects' or general science) or as co-curricular projects.

Another significant local concern in Third World countries that has promoted EWP has been the need to find alternative sources of financing education or training. Where productive work has been promoted from a more socialist perspective the idea of such work being at the same time a vehicle for learning and an opportunity for generating income received a lot of attention. But the fact that there were genuine additional reasons for introducing production components arising from the shortage of resources for educational development has frequently helped greatly to increase the legitimacy of EWP and to make the policy attractive to politicians, parents and students. Especially in countries where socialist thinking has been weak (e.g. Zambia, Ghana, Jamaica, Belize) or where EWP experiments were introduced separate from more conventional mainstream programmes (e.g. Botswana, Kenya, and several countries in Latin-America) the cost-reduction argument has been rather powerful. A problem has been that where the pedagogical rationale has not been very strong, whether arising from marxist or from local pragmatist thinking, the economic argument has often been able to take the upper hand. There are situations where this has led to adjustments that fundamentally undermined the EWP principle, for example when production was relegated to income-generating programmes separate from the curriculum and largely conducted by full-time workers.

In another part of the South, in India, the post-colonial interest in Education with Production was initially very much linked up with Gandhi's proposals for craft-based education. His concerns were essentially not very different from those of many new leaders or innovative educationists in Africa: the problem of educated youth being uninterested and ill-prepared for manual work, and the lack of sufficient finance for the expansion of basic education. But Gandhi went much further than others in allocating a central role for productive work in the educational process. He suggested that craft-work, especially spinning, could not only make schools financially self-sufficient, but also be instrumental in bringing about the highest development of 'the mind, the body and the soul'. Productive work would be the basis for character training, a scientific understanding of work, and the acquisition of vocational skills to ensure future self-reliance (Sinclair, 1982). In this regard Gandhi's approach was very similar to that advocated by Mao-tse-Tung (Zachariah and Hoffman, 1984).

The Indian example of craft-centred basic education is perhaps illustrative of the tensions that beset indigenous traditions of EWP. The combination, if not integration of learning and working, has been central to the attempts in many developing countries to find a local alternative to what was regarded as a foreign, academic, elitist and white-collar-oriented education model. Yet, since this in practice meant the association of education with traditional forms of production and a village mode of social and economic organisation, the principle drew much criticism from forces that wanted to see education play a much stronger role in the push for modernization. In this set-up the key did not seem to lie in an imitation of traditional economic activities or an interaction with a backward village community, but rather in the promotion of modern science and technology and an association with the modern work environment.

In India, where during the 1950s Gandhi's basic education was widely promoted in spite of its implementation problems, official views changed rapidly during the modernization drive in subsequent years. The concept was re-defined and replaced initially by the idea of 'work-experience' and later by 'socially useful productive work'. Although some attention to production had remained it was very much reduced in scope and became attached to what was otherwise a conventional curriculum (Sinclair, 1982).

Recent trends in Education with Production

Developments in EWP during the 1980s have shown that the concept has been under a good deal of scrutiny. In several countries it was discredited altogether in the wake of the demise of socialism. Yet, in many poor countries it has remained strong especially because of its continued promise of helping in cost-recovery. Furthermore in a variety of both industrialized and poor countries there has been a renewed interest in exploring in the direct interaction between theory and practical work in the context of improving the relevance of the education experience for the changing modern world. The ups and downs will be briefly reviewed here.

In spite of the great interest shown in variants of EWP in many parts of the world and its stimulation of debates on the nature and relevance of school education one notes the continued strength of the conventional formats of institutional education and training. In almost all societies modernization presently takes place under some degree of influence from the West. This also involves the transfer of education and training models in which the separation of learning and working has become one of the principal features. The current dominance of the classroom-based, 'academic' type of education or training provision is such that it constitutes the 'normal' institutional reality of organised learning. This prevailing cultural conception of how learning should be arranged is only exacerbated by the practical difficulties associated with the attempts to bring some

work element into the school or to merge what had become two very different domains of human activity. As a result EWP tends to be either left to survive in traditional domains outside the 'modern' worlds of education and enterprise (like in the informal sector), or to be brought into this modern world to achieve specific short-term objectives.

Mostly the introduction of EWP into conventional organised learning appears to have resulted from external pressures to increase its direct relevance for the social and economic environment. In general these pressures have been of two types: ideological ones and economic ones. In ideological terms EWP has often served as the central part of a critical pedagogy enabling institutions to become an instrument for personal and societal transformation, whether this was conceived from a marxist or from a populist perspective. The impetus for these variants of EWP has in many instances come from individuals or movements, who saw EWP-oriented learning and production centres as starting points in an effort to achieve social transformation from below. In quite a few countries, however, it resulted from a 'revolutionary' government - whether post-colonial or post-capitalist or both - bent on creating a new society from above.

Economic types of pressures, on the other hand, have not been so pervasive and have allowed institutions to accommodate EWP components without changing the basic pedagogical orientation. The objectives here have been to ease the transition into the world of work through better preparation for wage- and/or self-employment, or to mobilise additional resources through added on production units.

It is striking to note how, once the external ideological or economic pressures are reduced, EWP tends to change its character or to disappear altogether from the education or training system. It seems that in such case the traditional Western pedagogical orientation easily re-asserts itself. The conventional definition of school as a social institution appears strong enough that under popular pressure or expert pedagogical opinion (or both) the work element can be discarded. For example, when in socialist countries priorities shifted to economic modernization EWP in the form of production-based learning was de-emphasized as students were not thought to learn anything useful. However, production linked to vocational and technical education received more attention. In China these developments have been seen as evidence that the traditional Confucianist views on the importance of classroom-based intellectual education has gradually come to reassert itself (Thogerson, 1988:17-18).

In former socialist economies, like in Eastern Europe and Africa, it appears that less emphasis is being given to manual work which is replaced by activities aimed at scientific and technological development. To the extent that productive work is retained there is a greater concern about the pedagogical dimension of the productive process, i.e. organising work in such way that there is more room for creativity and learning a variety of basic skills (Cabral de Andrade, 1989). Similar changes of emphasis had earlier taken place in India and are now also

noticeable in other developing countries which are moving towards greater pluralism and pragmatism - such as Ethiopia, Benin, Zimbabwe.

There is also evidence that where the political/ideological pressures diminish schools easily abandon what is often a semblance of productive activities. Where productive work survive this often seems to be related to a shared conviction about its pedagogical value and/or its economic necessity. While the latter can be a very persuasive argument, the former is much harder to sustain in practice.

In many systems, particularly in the South, the integration of productive work was achieved much more in rhetorical than in practical terms. Curriculum practice has tended to differ sharply from the stipulations in policy documents and official guidelines. Ministries of Education had great difficulties translating policies into programmes of action and find coherent answers to the many administrative, technical and logistical questions raised by the idea of having production in schools and training centres. Part of the reason has been the general lack of resources, which in spite of the rhetoric, were not made available to implement EWP. But another part was that such implementation required competencies, organisational patterns, attitudes, and external linkages which tended to be quite foreign to those prevailing in the education or training system, particularly in those sections that were controlled by government. Simple cases in point are the generally great difficulties of collaborating with local businessmen and farmers, and the great struggles of many systems with the bureaucracy to be allowed to retain the profits of productive activities rather than handing these over to the treasury. A consequence has been that as soon as the ideological pressures receded, many institutional heads were greatly relieved that they did not have to bother any longer paying attention to what to them seemed to be unpopular and marginal school activities.

There is no doubt that in the developing world also the stance of donor agencies has had an impact on the changing fortunes of EWP programmes. Their influence by either directly supporting EWP or by withholding support has been prominent. During the 1970s and 1980s Western donor agencies had found some encouragement in supporting the linkage between learning and working largely as this was seen to help improve the relevance of education and training for the world of work and at the same time offset the growing difficulties in covering the high recurrent unit costs of learning institutions. Other, more ideological considerations did not seem to play a prominent role except where aid was given by socialist countries. In the case of Scandinavia it was also the populist rationale for EWP which found a sympathetic audience at home in view of longstanding local traditions (Gustafsson, 1987).

Donor agencies have been interested in evaluating EWP both from a pedagogical and from an economic perspective. The limited evidence available shows that the results were disappointing. Specially organised production units or projects in institutions have a poor record of success. They tend to be badly

managed, turn out poor quality produce or services, and are often loss-making. Moreover the link with the curriculum has been very difficult to organise and the opportunities for broader skill development within the production situation are rarely utilized. Where production has been integrated in the curriculum - as part of practical work for (pre-)vocational subjects - it has mainly helped to cover some of the material costs (for example Komba and Temu, 1987). Evidence on the above for Asia, the Caribbean and Latin-America appears, however, to be more positive than what has emerged from Africa (Jennings, 1987). With regard to the subsequent work life of the graduates no research has specifically attempted to assess the effect of involvement in productive work for pupils in general education. As regards vocational training there is evidence that the involvement in hands-on productive work, both within and outside the training centres, have had a direct bearing on the graduates' access to employment (Kukler, 1976; Hoppers, 1985).

To-date not much systematic effort has been made to assess the learning outcomes of EWP, in terms of its possible objectives in the cognitive, affective and even practical (psycho-motor) fields. Reviews of evidence in the Caribbean and India show that achievement has particularly been low where EWP programmes had been introduced in part of the education system only, such as in one track at the secondary level or in a limited number of primary schools (Sinclair, 1977; Jennings, 1987). Frequently EWP has been part of a vocational or pre-vocational track designed as a formal or non-formal alternative to academic secondary education or as a remedial programme for under-achievers. It is not uncommon for such educational differentiation to be also related to socio-economic characteristics of learners. In these cases parents have often been quick to demonstrate their opposition to EWP, while learners have been demotivated as a result of social stigmatising and of the generally low currency of their certificates in the labour market. The association of such partial implementation of EWP with the colonial experience has been a powerful argument in African countries to avoid this approach of EWP in some part of the system only. Where such dual tracks were avoided and clear efforts were made to use utilize EWP as an enrichment of the existing system parental attitudes have been much more positive (Lauglo and Lillis, 1988).

A drawback of these current insights is that no clear distinction is made between different types of programmes aiming to link education to work. Not only among politicians, but all too frequently also among educationists and researchers insufficient effort is made to disentangle the differences among 'vocationalized education', 'education with production', 'practical subjects', and more recent programmes like 'life skills', 'technology education', 'entrepreneurship education' and so on. As will be shown in Part III of this book such programmes shown widely differing characteristics with regard to their focus on technical-vocational skills and their relative attention to productive work. In policy documents, in

research and even in general professional usage such terms are often used interchangeably and opinions or evaluation results concerning a programme of one type are quickly extrapolated to those of another. Thus, while EWP has not been subjected to much focused research, inadequately based 'conclusions' abound and the interaction of learning and working is often dismissed as 'unworkable' on rather spurious grounds.

The limited evidence on EWP has tended to strengthen the reluctance of many donor agencies to support programmes related to productive work in general education. Currently the emphasis is rather put on efforts to maintain or restore the quality of what are considered core elements in the school curriculum, like literacy, basic science and mathematics, and to tackle the issue of unit-costs by more efficient utilization of available human and material resources. In basic education the World Bank now recommends the concentration on literacy, numeracy and 'problem-solving' skills as these are considered to be the key elements that make primary education correlate positively with development (World Bank, 1990). Moreover as regards local fund-raising the Bank appears much more in favour of increasing community contributions than enhancing efforts at cost-recovery through school production.

The World Conference on Education for All (1990) has echoed the above views on basic education. The background document went further in accepting that the curriculum would also promote relevant learning content such as attitudes and essential life skills "necessary for individuals to function effectively in their society". But there is an implication that these are among 'other responsibilities' which the school should carry out only when it "is provided with the resources necessary to carry out these tasks effectively" (WCEFA, 1990a:46). The final declaration is more open-ended and, while it accepts such skills as a basic learning need, it acknowledges that their scope can vary (WCEFA, 1990b:3). None of the documents, however, makes any reference to the interaction between learning and working and there is no indication that learning might be anything else than what goes on in the classroom setting.

At secondary level the World Bank's message is that vocational skills detract from general communication, science and mathematics, and since they do not seem to materially affect the post-school choices of students it is better not waste scarce resources. There may still be a way out for productive activities, however, as the Bank has noted the increased interest in 'technology' education, "which seeks to develop a more general understanding of applied science and mathematics in the context of technology and production, instead of developing occupationally-specific skills" (World Bank, 1991:9). One may suggest that involvement of learners in productive work would greatly enhance the understanding of science and technology, like it would provide an experiential base for the development of 'problem-solving' skills recommended for basic education. But a discussion on these issues is still obfuscated by a common equation of

productive activities in the curriculum with efforts at vocationalization and thus by an urge to negate the value of learning through practice in a general campaign against pre-vocational education.

Yet, in spite of the reservations if not outright disapproval of variants of EWP expressed in international fora, the search for improving relevance in education has continued. In many developing countries it has since long been spurned by the problems of widespread un(der)employment (for example "Defusing the Time Bomb", 1989). More recently, concern has grown about dwindling enrolments and about the elusiveness of the aim of widening participation for girls and for problem-groups such as children of the very poor, minorities and people in remote rural areas (the 'last 10-15 per cent'). But also in industrialized countries relevance remains a major issue, partly because of the re-emerging problem of unemployment partly - and perhaps even more - because of an increasing awareness of the schools' evident lack of relevance for young people's daily life situation. While forms of EWP are not the main answer to these problems, the notion of linking theory with practical work and of school education with meaningful experiences in the home or work situation continues to inspire innovative approaches.

In actual fact in many systems and in individual institutions EWP has been brought in through the backdoor, often under different names. In both industrialized and less-industrialized countries school-industry linkage projects, whereby students develop work-experience or partake in industry-sponsored entrepreneurship development or mini-enterprises, have become very common. Within a variety of school subjects, such as crafts, life skills, science and technology education, more and more attention is given to practical capabilities and the consequent need for opportunities to learn directly from the 'doing' experience, whether that takes place in a school workshop, in industry, or in one's backyard at home. Some of those activities are basically EWP programmes - even if they are not always given that name -, while others constitute different approaches to work-orientation in learning institutions.

Thus, from a comparative education perspective, much can be gained by moving beyond the old ideology-loaded discussions on the merits and de-merits of EWP, and pay attention to the variations within which education and productive work are being linked and compare these with alternative approaches to achieve a more relevant and effective learning experience. These experiences, their conditions and dynamics, need to be mapped and their value within the local context assessed. Hopefully this will lead to more realistic and meaningful debates as to which programmes or approaches can usefully be implemented for what purposes and under what conditions.

The experience of research through networking

Wim Hoppers and Donatus Komba

Introduction: the EWP research environment

By the mid-1980s the concept of Education with Production had come to enjoy widespread support among policy-makers and educationalists in the Eastern and Southern African region.The earlier experiences with EWP in Botswana and Tanzania were held in high regard because of their bold effort to move away from colonial education and experiment with approaches there were generally felt to be closer to African socio-economic needs and cultural traditions. They had inspired similar policies and practices to be developed elsewhere in the region, like in Zambia, Zimbabwe, and Lesotho. Some years before a regional foundation had been established, the Foundation for Education with Production (FEP), which aimed to encourage and guide national groups in exploring the concept further adapting it to specific local circumstances.

Yet at the same time the lack of concrete data on how experiments were working out in practice began to be felt as a great disadvantage. As more primary and secondary schools became involved in production activities informal opinions as to how this 'worked' or did not 'work' as began to proliferate. Opponents to the idea drew much courage from what was assumed to be widespread parental dissatisfaction and teacher unwillingness to accept such activities as part of school work. Some reports appeared that stressed the problems of implementation and the negative reactions at the school level. The great dearth of empirical research and ongoing evaluation meant that problems were not sufficiently analyzed and set against the magnitude of the structural changes that EWP implied in the school system or the complex strategies necessary for bringing these about.

It is worthwhile to review the literature that is directly concerned with EWP in the region to consider who have been involved in developing a knowledge base in the field of EWP, and what issues have been addressed. The entry point is a bibliography on EWP in East and Southern Africa produced by CESO in the early period of EPTA. It was designed to assist the EPTA network with references to existing published and unpublished literature on EWP (Haket and Hoppers, 1986). The bibliography drew on various data banks in the North as well as on CESO's own stock of (often 'grey') literature received from its contacts in the South.

A careful scrutiny of the bibliography, concentrating on those entries dealing directly and predominantly with aspects of EWP in the region, revealed the following details on numbers and authorship. The entries were divided into a

section dealing with prescriptive or advocacy writing and a section dealing with descriptions or assessments of actual EWP programmes and projects:

Table 1. *Categories of authors of EWP literature*

Authors	Prescriptive		Descriptive		Total	
	Form.	Nonf.	Form.	Nonf.	Form.	Nonf.
Donor Agencies	2	-	1	5	3	5
Non-indigenous authors	1	5	12	27	13	32
Indigenous authors	13	2	23	14	36	16
Total	16	7	36	46	52	53

The list can by no means pretend to be exhaustive. It is likely to be especially deficient on indigenous authors (indeed, Temu and Komba's listing for Tanzania is more elaborate, see Temu and Komba, 1987). Also, internal donor reports are not included. Yet the table gives an impression of the relative interest in EWP in the region at that time. Published writings sponsored by donor agencies have been few and they are more in the non-formal than in the formal sphere. The latter include UNESCO and GTZ in Tanzania and SIDA in Zambia (see United Republic of Tanzania 1982; Bergmann 1985; Republic of Zambia 1985).

EWP in formal education clearly suffered from a lack of interest on the side of national and multi-national agencies in the donor community. As to individual authorship, it is interesting to note that the attention for issues of EWP in formal education seemed to exist more among indigenous writers (some are Ministry of Education) than among non-indigenous ones, while in the case of non-formal EWP activities it was the reverse. If we explore indigenous authorship a little further, we find that the researchers tended to be staff and students of universities, writing out of personal interest (doctoral dissertations), a departmental research programme or on request by local development agencies.

In Tanzania, showing the largest number of entries (25), the Department (now Faculty) of Education at the University of Dar- es-Salaam has been prominent. Less visible until now have been other organizations such as the Curriculum Department (now Institute for Curriculum Development and Research) of the Ministry of Education in Ethiopia and the Zimbabwe Foundation for Education with Production (ZIMFEP), the latter a non-governmental agency directly involved in EWP in a small number of schools. In other countries, where EWP is less prominent, research efforts were more diffuse involving single persons within universities (Kenya, Lesotho).

Special mention must be made of the Foundation for Education with Production (FEP), based in Gaborone. FEP was established by Patrick Van Rensburg in 1979 as a regional promotional organization for EWP. It emanated from the long experiences with the development of EWP projects in Botswana, notably community schools like Swaneng Hill, and the Brigades. These experiences have produced a good deal of literature, though mostly by Van Rensburg and other non-indigenous writers (e.g. Van Rensburg 1974, 1984a). FEP runs a journal (*Education with Production*) which went some way in becoming a medium for information sharing in the region. At one point FEP also facilitated the establishment of national liaison committees with a similar promotional role, as in Zambia, Botswana and Lesotho.

Studies reveal an interest in 'conventional' vocational issues such as the economic output of production, internal (in-) efficiencies of school production, aspects of planning and management. But there were also attempts to examine the historical and ideological context of EWP (e.g. Sifuna 1976; Omari 1977; Van Rensburg 1984a; Gustafsson 1987) and to explore much further the meaning of work in education, the nature of EWP's social, political and moral aims and the interaction with the local community (Chamungwana 1975; Komba 1980; Hoppers 1986a; Komba and Temu 1987).

In the process the weaknesses of EWP research also became clear: it tended to consist of isolated efforts, focusing on limited issues, often divorced from the broader context of social and economic development, and many of the reports showed little depth in the analysis of the practice of EWP. In addition, while there were different interpretations of EWP and the protagonists had to defend their basic belief in the value of school production against the scepticism of many international scholars, there was little dialogue and even less joint action among those concerned. In addition, notwithstanding the exceptions, much of the research output had low visibility because of limited local and international dissemination.

The origins of the EPTA network

It was within this general research environment that EPTA started functioning. The network and its programme of research basically arose from a felt need shared by interested researchers and practitioners in the North and in the South that new initiatives were required to link research and practice in EWP. This was considered necessary in order to give due justice to the potential of this approach for renewal if not transforn n of education in different socio-economic and cultural contexts, and to come to grips with the implications for the planning and implementation of appropriate and effective strategies. Only by analysing past and present experiences in EWP would it become possible to better understand the

significance of the changes needed in education, the dynamics of working with the approach within conventional educational environments and the magnitude of the tasks involved.

The immediate roots of EPTA were associated with two developments, one of which was within the region. This was the articulation by FEP of its own research interest. The other concerned the development of a much broader international network of educational researchers stimulated by the Canadian International Development Research Centre (IDRC) under the name of Research Review and Advisory Group (RRAG).

FEP was very keen on blending the theoretical and the practical in its activities. Research was meant to help "identify proven educational frameworks and methods which can be applied and adapted in projects (...). Projects could also be used for research to develop, in turn, new educational frameworks and methods." They were seen as vital to "ensure that theoretical work is rooted and tested in practice and does not stray too far from reality" (Van Rensburg 1984b:14). The idea, however, was that activities in countries should be undertaken with a national partner, preferably an autonomous national liaison committee. For research this meant that FEP would initiate guidelines and frameworks for research.

Research would concern itself with the socio-economic context of EWP; the conditions under which education could promote social change, if at all; and the part that EWP could play in this, whether or not linked to other features of alternative development, including curriculum, relations with surrounding communities, methodologies, organizational issues, and the economics of production. All this research would have to be action-oriented: for use in developing training courses, for application in projects or in information campaigns (idem:16).

During 1984 FEP developed contacts with the newly established RRAG group to enlist support for a directory of projects and annotated bibliography. As a result, EWP was adopted by RRAG as one of its concerns and assistance was promised to have initial consultations to map out the work to be done. At this stage CESO, which had a strong interest in this field, got involved and together with FEP an international workshop was prepared. This was held in The Hague in February 1985. A total of 18 persons were invited from among contacts of FEP, CESO and those in the RRAG network. They originated from Europe, Africa, North America, the Caribbean, Latin America and South Asia. Out of the 18, twelve researchers were connected to universities or research institutions, five represented donor agencies and the remaining one was Van Rensburg, director of FEP (see EPTA, 1985).

The seminar explored relevant issues in EWP in various parts of the world and attempted to arrive at a common starting point for looking at EWP programmes and activities. It was decided to follow a rather broad interpretation

of Education with Production, leaving scope for the examination of a wide variety of combinations of learning and working. Such combinations were foremost considered within the environment of general primary and secondary education; but it was thought that also the inclusion of elements of production in training programmes and of elements of education or training in the work environment should be considered. As a follow-up to the seminar this initial conceptual framework was synthesized in a paper by Kenneth King (see Chapter 2).

The seminar agreed on a general agenda for research and mechanisms for implementing it (ibidem). Broadly endorsing FEP's research principles and interests, it suggested that the EPTA network could have three main goals:

a. "to bring together available information on EWP around the world and synthesize current understanding of such activities;
b. to conduct research (through selected fieldwork) on experiences within different socio-economic settings; to develop initiatives for action research;
c. to communicate experiences to a variety of audiences and in particular to assist FEP in its action programmes by helping to develop lines along which new initiatives for relating production to education could be taken" (EPTA, 1985.1).

A crucial proposal was that the activities would be carried out by building up a broad network of persons interested in EWP. These would be mainly researchers, but it was hoped that also those involved in policy development and planning of such programmes would become involved. The network was to be structured along regional lines with a strong input by some institutions, particularly FEP (the journal and newsletter) and CESO (library and documentation), and steered by an 'animation' group consisting of persons representing different regions who would stimulate exchange of information between regions and act as channels towards other organizations and donor agencies.

Thus it was basically left to the 'regional co-ordinators' to identify individuals and organisations, devise mechanisms for interaction, and initiate a programme of action. In this way the members of the networks could assist each other in analysing the concept and practice of EWP in their own environment, give attention to dimensions that had hitherto been neglected, and come to their own assessment as to the meaning and relevance of production in schools. Support would need to be mobilized within the region as well as among donors with a particular geographical and/or thematic interest. The composition, format, and level of activities in the network would be determined by local needs and interests.

The development of the network in East- and Southern Africa

The establishment of the nucleus of a network on EWP in Africa owed much to the parallel development of ERNESA (Educational Research Network in East and Southern Africa). ERNESA emerged out of the original Research Review and Advisory Group (RRAG) when IDRC encouraged members from each region to identify contact points among educational researchers in each country so that region-wide networks of researchers would develop. A first regional meeting for ERNESA was organized through IDRC in Nairobi in July the same year (1985). This meeting convened educational researchers to discuss modalities of information-sharing and collaboration. Here the proposed EPTA programme was discussed with interested researchers who had already been identified by the regional coordinator. These were invited to work out proposals for studies in their own countries which could be jointly submitted to potential donors: e.g. SAREC, SIDA and IDRC.

Eventually four countries responded: Ethiopia, Kenya, Tanzania and Zambia. All four opted for conducting a state-of-the-art review to be followed by a national seminar. Provisionally the intentions of the African group were worked out by Dr. Komba, as regional co-ordinator, as follows:

a. "To establish a regional network of researchers and practitioners in EWP, who would work closely with FEP, and help to initiate activities within individual countries.
b. To carry out state-of-the-art/practice reviews in different countries so as to obtain an overview of what EWP programmes are in existence and what the current knowledge about them is.
c. Apart from having incidental regional meetings, to conduct national seminars within which local researchers and practitioners can gather, exchange experiences and identify needs for research and technical assistance.
d. To promote research and analysis of the processes and results of EWP activities in different institutional settings.
e. To initiate training of staff within universities and implementing organizations in action research for the identification, monitoring and investigation of ongoing EWP programmes.
f. To secure a continuous flow of information concerning educational research and development activities in the area of EWP." (Hoppers 1986b:133-134).

It is of interest to consider the role of informal networking between persons in the North and the South that facilitated the developing of the EPTA network in the region. This networking was a by-product of various other formal activities during the period in which people with a particular interest in EWP in Africa participated. To give an idea the following can be listed:

- July 1985: African researchers meet at a regional RRAG meeting in Nairobi; birth of ERNESA.
- October 1985: regional RRAG co-ordinators meet Northern researchers at an annual conference of the Nordic Association for Education in Developing Countries (NASADEC) in Stockholm.
- December 1985: several researchers and practitioners from Africa participate in a conference on transition from school to work, organized by CESO in Wageningen, The Netherlands.

These formal occasions were complemented by other ad hoc meetings, occasioned by Northern researchers visiting Africa (on missions) or Southern researchers visiting Europe (to attend meetings or take up studies). It became clear that for the development of a research network and the implementation of a joint research programme such 'piggy-backing' with its element of informal contact was as important as formal meetings specifically called for the purpose. Not in the least the formal occasions allowed for a personal interaction with interested donor agencies.

In April 1986 SIDA responded favourably to the regional proposals and provided funds for the following: state-of-the-art reviews with national seminars in the four countries that had applied; and joint regional activities, i.e. costs of networking, a regional seminar and participation in seminars outside the region. Funds for the latter were eventually used for a second regional seminar, so that in the period of SIDA support (1986-1989) two regional seminars could take place: in Harare, organized by ZIMFEP (August 1986), and in Dar es-Salaam, organized by the then Department of Education (June 1988). Both meetings brought together researchers from most countries in the region. The exceptions were Angola, Mozambique, Malawi and Swaziland. In addition, FEP and CESO were represented.

The Harare seminar endorsed the general aims of the programme in the region and worked out the theoretical and practical details for the state-of-the-art reviews. The reviews would analyze the range of EWP programmes, their policy objectives and underlying philosophies and assumptions. They would study examples of actual activities, look at the linkages between education, training and production, the technologies used, the influence of the North on the programmes, and consider general trends. Finally they would reveal 'missing gaps' in the current knowledge base and provide a checklist for further research and practical action.

The meeting agreed on purposes, approach and methodology for the reviews in the four countries. It also agreed on the need for co-ordination, collaboration and unity of purpose within the network (Sekhamane 1986). It failed, however, to sufficiently stimulate other countries (notably Zimbabwe and Lesotho) to work out their own research proposals.

During the subsequent years review studies were carried out, first in Ethiopia, Kenya and Tanzania[2], while later also a draft for the Zambian one was produced. In each country also a national seminar eventually took place. Drafts of the review reports were first discussed at the second regional seminar in Dar-es-Salaam (LEFEP, 1988).

Later events showed, however, that the original planning for the finalization of the review reports and their processing into a joint regional synthesis was too optimistic. Heavy work-loads of the writers at their respective universities, other commitments to research and consultancy work, and also the problems of communication meant that these last stages took a long time to complete. Discussion with CESO and SIDA led to a 'transition phase' (for the period of 1991 and 1992) during which there would be extra time for (i) preparing a synthesis report on the processes and outcomes of the first phase which could be used as a proper basis for further planning, (ii) reviewing the experiences of EPTA as regards networking in educational research and practice with a view of improving its functioning, and (iii) drawing up a new programme of action for a second phase.

The first item was eventually completed during two periods of attachment of the regional coordinator to CESO, each lasting two months. For the purpose of the other two items a third regional meeting was convened in Nairobi in July 1991. Here the draft chapters for this book were presented and discussed, and agreements were reached concerning the mechanisms for networking and the basic outline for future activities (Mani *et al*, 1991).

In this workshop not only the original countries participated, but also three others who had shown interest before but had not yet managed to actively participate in the research (Uganda, Zimbabwe, and Lesotho). A successful novelty was the participation of two external resource persons, each of whom could provide technical support regarding the exploration of specific research needs emanating from the first phase results. The resource persons were Ms Zellyne Jennings from the University of Guyana, who had worked on EWP in the Caribbean under EPTA, and Mr Anders Närman from the University of Gothenburg, Sweden, with considerable experience of tracer-studies in East-Africa.

Although the workshop enabled this monograph centring around the four country summary reports to be completed, further planning of a possible Phase II would have to await this outcome as the report needed to be the base for further discussions between the network and the interested agencies in the North, i.e. CESO and SIDA.

Networking within EPTA

In 1985 networking in the field of educational research was not common. The prevailing type of cooperation was still that of Northern individuals or institutions carrying out research in the South with varying degrees of local assistance. In

spite of consultations and institutional linkages the agenda, the funds and the destination of results was very much controlled by Northerners. The idea of active Southern participation in decision-making on educational research had only just started being explored by RRAG.

Against this background the philosophy that came to be pre-dominant in an emerging network like EPTA at that time was that of a rather non-directive form of interaction and cooperation. The following principles seemed to underlie activities in the first period:

a. Decentralization
The regional coordinator was responsible for extending the network within his or her own region and a similar task was given to national contact persons. All decision-making concerning participation, nature of activities and focus of research was expected to be theirs. All activities were implemented by local personnel.

b. Open-ended participation
Persons could be involved in any degree they wished. Thus the boundaries of the network have been rather vague. Participation depended on the extent to which 'contacts' could be activated or could activate each other for specific tasks.

c. Individual 'membership'
The network has been seen as one of individuals who acted in pairs or small groupings. Although they were attached to different institutions, only in some cases was there an explicit institutional base for their activities. All communication as well as cooperation was directly between the persons concerned.

d. Equality in cooperation
All communication and cooperation was perceived to be the basis of professional collegiality: this concerned the interaction between researchers and practitioners in the South as much as between Southern researchers and those in the North.

e. Unstructured interaction
There was no fixed programme of action; only sets of ad hoc suggestions which participants could follow if funds were available. Also no institutional agreements were made - and thus no formal obligations arose - except the one between SIDA and CESO for the funding of activities in Africa.

f. Process orientation
Emphasis was on creating greater interest among researchers; on improving research capacity; on a more effective interaction between researchers,

practitioners and policy-makers; and on more exchange between researchers in different countries. The process of networking seemed more important than its products.

The implementation of the research programme in Eastern Africa has been a major challenge. It was clear that, in terms of participation, the national groups remained restricted to a limited number of persons, mostly academics located in a university department of education (Kenya, Tanzania, Zambia) and/or professional researchers located in the Ministry of Education (Tanzania, Ethiopia). The reviews they undertook ran into an array of practical problems related particularly to logistics, administration and management, many of which were ultimately a problem of resources and of competencies. The work was much hampered by insufficient time to do research, by the lack of facilities such as for transportation and reproduction, the poor documentation base in universities, ministries and individual institutions, and the generally poor access to information.

There was also insufficient opportunity for reflecting on conceptualization and methodology of the studies and to develop adequate research skills. The latter included familiarity with the nature and practical implications of more qualitative research methods, and with the options available for planning and implementing research activities making the best use of very limited resources.

A major difficulty was the limited time in the face of many competing work assignments. Some of the pressures were internal: in the form of teaching, administrative duties and other local research work. But other pressures emanated from the economics of donor-initiated studies: the interest of donors in commissioning out evaluation studies to (often the same) local researchers, and the interest of the latter to oblige, partly in order to be involved in research at all, partly to augment a meagre university salary. Thus, while universities gave considerable freedom to members to be engaged in research of their own choice, in practice the opportunity to participate in independent research remained rather limited. Further delays were caused by lack of supporting facilities, especially access to transport.

In the above situation it was hard enough for the teams to carry out the research activities as planned. It became even more difficult to reach beyond the limitations of one's own group and interact effectively with other researchers, and with policy-makers and practitioners. Interaction was easier where there was a good deal of intra-institutional collaboration, like in the Ethiopian Curriculum Department or the Department of Education in Tanzania. But this was the result of a voluntary local decision to adopt the research as an institutional project. In general actual networking among the different categories remained very difficult.

It is tempting to attribute the problems of cooperation and interaction mainly to the insufficiency of resources, particularly in financial and material terms, and

to poorly developed competencies. But, in addition to this, it may be argued that the approach to networking that was followed assumed too much in terms of personal capability and responsibility of researchers as well as in terms of efficacy to operate autonomously from the institution/organisation in which they were based. In hindsight the network could have benefitted from more explicit leadership, more structuring of the work to be done, more formal agreements among the persons and institutions concerned, and systematic training provided as an integral part of the research process.

The reliance on local initiative and on the efforts of national coordinators meant that the latter were free to put together their own research teams and to consult whoever was in one way or another involved in EWP. In addition the principles of individual membership and of unstructured interaction meant that there was no formal quality control or supervision at the national level. This individualism demanded much in terms of time, personal capability and effort, and of ability to negotiate for institutional resources. The unequal distribution of such features was reflected in the quality of the activities and the speed with which they were implemented.

Where there was an acknowledged institutional base this had the advantage of wider participation and better access to institutional resources. More space in the institutional work programme tended to be created for the project so that it could be implemented more smoothly. Moreover a greater number of staff tended to become involved so that there was more broad-based support for EPTA in the institution and research tasks could be shared out. There was also better supervision of the research and a greater effort to make resources available to ordinary members of staff involved in the project.

Apart from the sheer practical dimension of working as individuals or as institutional teams there was also a cultural dimension. It may be that the idea and method of networking still needs more adjustment to the socio-cultural setting within which it had been introduced. Individual networking with its emphasis on professional autonomy, close personal relationships and satisfaction in collaboration is also a state of mind which, given its origin in western middle class professional tradition, may not be stimulated in environments with deep-rooted conventions regarding personal interaction and the place of individuals within institutions, and with well-demarcated social boundaries. Also the current economic climate impinging on the personal life situation of African academics and leading to more emphasis on personal academic survival is not conducive for the above interpretation of networking.

The experience would suggest that in the current research environment in Africa more effective implementation of research as well as interaction with other partners in the education field can be achieved where researchers work as part of a team with a recognized base in a particular institution or organisation, and with a formal agreement stipulating responsibilities and resource entitlements. Such programme could be based within one institution or reach across different ones.

Within this kind of framework there might be a better chance of not only good quality of work being undertaken in a timely manner but also of personal and institutional capacity being build up in the process.

General outcomes of Phase I

Despite the difficulties the national groups did produce state-of-practice reviews, the summaries of which are incorporated in this book. They give a preliminary overview of the range and types of EWP programmes that occur in the four countries as well as the limited knowledge that is available.

The principal value of the reviews[3] lies in that they constitute a local effort to produce a synthesis of the existing, but scattered, research output and the current state-of-practice in EWP. By so doing they make past research more visible and at the same time reveal what range of issues need further attention in the research agenda. The degree, however, to which the critical issues have been drawn out and the existing body of knowledge analyzed, varies - with the Tanzania study being the strongest on these points.

While the reviews seem to put EWP firmly on the educational research map and have laid a basis for a new research agenda, they have been of equal importance as an outcome of EPTA in the region in that they promoted a learning process among the participants on crucial issues of education and development. This learning appears to have been stimulated by the very fact of being part of a broader group in and outside the country sharing similar interests and ideas, as well as by the personal interaction generated by this network. The review exercises and the national and regional seminars, by confronting different experiences and interpretations, provoked a deeper exploration of the meaning of EWP and its implications, the nature of education in independent economies, and they led to new insights in its potential and limitations in helping to bring about vital improvements in the quality and relevance of education.

Some of this learning has been generated through the national seminars. These became vital occasions for dialogue with other actors involved in EWP (see Report on National Seminar Zambia 1987 and Report on Tanzania 1989 and Ethiopia 1988). In Zambia, for example, the seminar was the first occasion for researchers, administrators and practitioners in different ministries and organizations to openly discuss their experiences with education, training and production. The same seminar, however, also illuminated the difficulties in local networking in EWP. Some of these concern difficulties in language and communication styles. Others emanate from different institutional cultures and lack of resources for communication.

An interesting problem that emerged relates to the dual role of participants, especially among administrators and project managers: as representatives of their institutions or organizations with their specific viewpoints, official policies and practices on the one hand, and as individuals with their own perceptions,

experiences and interpretations on the other hand. Unfortunately in most documents and reports the institutional view prevailed, while 'think-pieces' as personal statements, typical of Western intellectual discourse, are rarely written, even by researchers. During seminars, in the ensuing discussions, very frequently the personal perceptions, hopes as well as frustrations came to the surface. Yet such instances of deeper analysis and exploration, of flashes of insight, rarely find their way into the documents. As a result, much of the collective gains of understanding remained hidden under a layer of formal statements. The network can only progress if the relevant shreds of verbal exchange can be taken as guiding lights in further informal communication.

Reviewing the original aims of the network in East- and Southern Africa it can be noted that a good deal of progress has been made. At the same time there is also more insight concerning the limitations of what has been done. State-of-the-Art/Practice Reviews have been carried out. They have synthesized much of the available information and identified the nature and scope of EWP programme that existed in recent decades. The analysis of the present situation is, however, not yet exhaustive and much more needs to be done to explore crucial variables in the different programmes and place their dynamics fully within the broader context of the changing socio-economic, political and cultural situation in each of the countries. The process of policy development and planning related to such programmes would need special attention in this regard.

Evidently a network preoccupying itself with this approach to learning came off the ground over the years. Membership became wider than the four countries that participated in the first round of research, as effective contacts now extend into nearly all countries in the region. It has to be acknowledged that these exist largely of researchers, and that, in spite of the national seminars, the communication with policy-makers and practitioners has remained incidental and has not led to effective collaboration in policy and programme development. A major drawback in this regard was that most FEP liaison committees that were promoted in the first half of the 1980s have not lived up to their expectations. Only few managed to come close to being a national platform for debates on the issues or for the initiation and guidance of policy reviews and development of new programmes. As result the national basis for continued research and development work in EWP as an alternative approach to education has remained very weak.

The role of external agencies

In a final section we can briefly consider the external support to the network. The contribution of two types of agencies can be reviewed here: funding organisations and research institutions.

Funding organisations

The role of donor agencies in the EPTA network has been modest but crucial. They enabled the first, founding seminar to take place (Dutch Ministry of Education and Sciences), funded all research activities and seminars in poorly resourced regions (SIDA in Eastern and Southern Africa, the European Commission and Swiss Development Cooperation in West-Africa, the Commonwealth Secretariat in Caribbean, and IDRC in Paraguay).

The experiences with different donor agencies gave rise to the following observations:

1. Current regulations and practices for allocation and disbursement of funds appear to make it difficult to fund sets of inter-related activities, particularly those involving collaboration between different individuals or institutions and even different countries. Attention tends to be piecemeal and uneven as some activities do 'qualify' and others do not, and as proposals from some countries do find favourable attention while others, regardless of their quality, do not.

   In several instances finances could only be obtained by singling out activities and by 'translating' the proposals giving them a focus, format and schedule that would fit the blueprint requirements for activities already planned for by the agency. Concessions made in the process could significantly alter the original intentions of the local initiators. Furthermore parallel or follow-up activities that were important for the network (for example review seminars, follow-up visits or publications) could not take place as it was not possible to receive funding for the whole package. It was thus especially the all important process of networking itself that could not be targeted for support. For EPTA the noteworthy exception to the above was SIDA that made funds available to the network for a variety of pre-defined activities that included communication.

2. A related problem for agencies has been the difficulties in channelling funds to networks as such. It is preferred to give money to institutions that will coordinate activities of individuals and take legal responsibility for accounting. Networks generally do not have a legal status unless they turn into associations. Although for quite some time such move was felt to violate the spirit of networks it has now become more common as a means to ensure autonomy and operational effectiveness.

3. As a result of increasing pressures on agency budgets and the parallel requirements for demonstrating real benefits of money spent, some agencies, such as SIDA, have come to face critical dilemmas in supporting research activities like those under EPTA. While SIDA has been much aware of the

need to sponsor the process of capacity building in research, it is also confronted with the reality that results may be slow in forthcoming and may not have the scope or depth that reflect tangible programme outcomes or make them immediately useful for policy development. Thus it is forced to consider to what extent the two aims of research support can still be harmonised and what implications this may have for continued support to educational research in Africa.

4. A final issue has been the general lack of donor cooperation and coordination. Negotiations have been between individual coordinators and/or institutions and individual agencies, with some mediation by Northern research institutions. Apart from making the position of the applicant rather weak this situation also diminishes the value of the donor's contribution as it is not complemented by support from other sources to related activities. Since one of the essential attractions of networks is that they help build up local institutional structures and make more efficient use of local resources they deserve more concerted donor attention.

Professional support organisations

Two organisations have played a role in the development of EPTA in the region: the Foundation for Education with Production (FEP), in Gaborone, Botswana and the Centre for the Study of Education in Developing Countries (CESO) in The Hague, Netherlands. Both institutions made a vital contribution, partly by providing a conducive environment in which a network like EPTA could be inspired, partly by supplying and/or mediating the necessary resources to keep the process going. It became clear that a well-endowed institutional base of some kind was essential to maintain the international linkages of a network in resource-starved Africa and to sustain the overall momentum. In this role FEP clearly showed its advantages by being located in the region and by having a direct interest in the outcomes of the process.

FEP was particularly active in the early stages of Phase I. It encouraged and mediated the initiation of the research programme and helped to make contacts in some of the countries involved in the early discussions, such as Botswana, Lesotho and Zimbabwe. Although none of these participated in the actual research contacts were maintained in part through FEP.

While the network was keen on working with FEP as a liaison with practitioners of EWP, it was also at pains to maintain its autonomy as it aimed at critical analysis and monitoring of EWP policies and practices rather than their promotion as such.

At a later stage FEP's involvement was much reduced, which appeared to be largely due to alternative commitments of the director in EWP programmes. But

this created a further stumbling block to the effective dialogue between the researchers and practitioner organisations and programmes.

As regards CESO its role has primarily been in the following areas:

- initiation in terms of bringing persons together in order to establish the network, e.g. workshops in The Hague and Harare;
- mediation in terms of creating opportunities for exchange between researchers of various regions, such as at various international conferences;
- mediation in obtaining funds from donor agencies and administering those funds;
- provision of technical support through inputs in the preparation and implementation of workshops and in the design and guidance of the research activities;
- support in the area of documentation by preparing bibliographies;
- dissemination in terms of producing and circulating reports on network activities.

CESO's contribution has been a modest one, with emphasis on initiation, mediation and selective technical support. This low-key position of CESO was influenced partly by the philosophy of the network favouring full local autonomy and a non-directive approach, partly by the institutions's limitation of resources, both financial and human. The latter problem was exacerbated by the fact that the main coordinator was not available in The Hague for a full three years. Although CESO had been given a role of stimulating EPTA activities in different regions its contribution was most effective in East- and Southern Africa. In this region CESO was in the best position to assist as it availed both of good contacts with interested donor-agencies (within Europe) and of a direct experience and involvement in the field of vocational education.

Education with Production: approaches to a state-of-the-art

Kenneth King

Introduction

This is an important moment to review what is known about the relations between education and production. In both North and South, different kinds of employment crisis have produced new and taxing demands on education and training systems. In situations where it is easier to build or reform schools than it is to produce new jobs, it is not surprising that politicians increasingly call for education to be related to production. As a result, schools are under pressure to be relevant to working life, to assist in schemes of transition to the world of work, to anticipate the realities of the labour market, and a whole lot more. In fact there is such a barrage of advice and recommendations addressed to schools that it may be useful to sort some of it out, using as an organising principle the relationships between education and production.

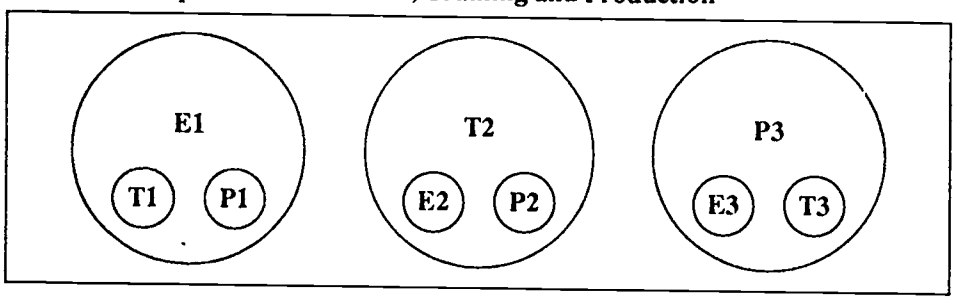
Since education and production relations can span a potentially enormous range of links between education and employment, it may prove conceptually helpful to enlist a model for exploring a number of the more important connections with which we may be concerned. In this diagram (on page 48), the worlds of education, training and production are presented as distinct and separate entities, in order the more easily to examine some of the ways in which they may be related. The starting assumption is that there really is a great deal of difference between the education mode, the training mode, and the mode of production. Each has its own institutional character (for example, schools, vocational training centres and factories or firms), its specialised personnel, its schemes of work etc. In many countries, differences between the education mode and the training mode are re-enforced by their being organised by separate bodies (ministries of education, and ministries of labour), and both and very different from the world of work, even when that is internally differentiated into wage and salary jobs on the one hand and self-employed work in trade or agriculture on the other.

The world's of Education, Training and Production and their satellites

The interest of this chapter is to distinguish between the modes of education, training and production when they operate according to what the 'owners' of these may see as their ordinary objectives, and those same modes when the owners seek to incorporate some elements of other modes. Some examples may make this clearer. The circle E1 refers to the world of education (whether preschools, literacy classes, primary and secondary schools, or universities),

while the circle T2 refers to the range of regular institutional training (from carpenters, to nurses, to car mechanics, to computer programmers). The circle P3 covers the world of productive work, whether in firms, farms or factories. What concerns us here is what happens here when there is an attempt to insert elements of training (T1) or production (P1) into the regular world of education. To illustrate the introduction of training or productive work in schools, we utilise smaller circles within the larger one. Thus P1 might stand for a school system which has adopted school production units, and T1 might indicate a serious attempt by schools to offer some training in agricultural, commercial or technical skills.

Model of the Spheres of Education, Training and Production



Comment: Large circles E1, T2 and P3 point to the education system, the training system and the world of production.
Small circles indicate particular activities which take place within a larger circle but which are more closely related to the primary activity of one of the other circles. Thus P1 could point to the presence of production units in schools, or P2 to the existence of training which has a strong element of production built into it.

Similarly, we can conceive of a training institution, such as a technical training centre (T2) offering some continuing exposure to education (E2) and to some of the reality of productive work (P2). Finally, in the actual world of production, it is possible to visualise an industry-based training scheme (T3), as well as the possibility of pursuing through day release or other mechanisms some access to continuing education (E3).

The main point to be stressed in this excessively simplified model is that when elements from other spheres are borrowed and incorporated into the world of education, training or production, they are naturally affected by the social relations and institutional character of the world they enter as much as by the one to which they seem, in name, to be related. Thus, production-in-schools is fundamentally different from industrial production, agriculture or commerce because the production thrust is inevitably subordinated to the larger context and tradition of schools; so that, for instance, a school carpentry project is a world or two away from the carpentry workshop, whether the latter is in the informal

sector or in the modern urban sector. Equally, when the school gears up to do training (whether for employment or self-employment), this training emphasis cannot help being affected by the character of schooling. Instead of being the dominant activity which it would be in T2, training-in-schools gets turned into a subject, like English or Maths, gets slotted into the school hierarchy of more or less high status knowledge, and thus gets incorporated on terms other than its own. Training-in-schools (T1) tends to have much more in common with schools than training in regular training institutions (T2) or again training-in-industry (T3).

These 'satellite' worlds of training and production are being increasingly recommended for inclusion in the world of education as aids to the process of transition from school to work. But they need careful attention, if governments are to be able to sort out what such schemes can and cannot do. A number of comments may be made in general on these satellite worlds before we move to look more closely at the special case of Education with Production. The first proposition would be that policies to include satellite circles within the larger circles of education, training and production must be informed of the limits to which the small circle can influence the larger environment. In most cases, to change the metaphor, the tail is unlikely to wag the dog. Production units are much more likely to become part of the school fabric than they care to introduce the flavour of production. Manned by school teachers and attended by students who have seven or eight other subjects (or 'jobs'), they have to take their turn according to the set routines of school, and soon lose the urgency and single-mindedness of a business enterprise.

Similarly when politicians, planners or external agencies encourage the school to become more training-oriented, it is almost inevitable that the school workshops, typewriters and tools participate in a very different existence to what they would experience in a regular training institution. Almost unavoidably, training becomes educationalised, so that, for instance, technical subjects like other subjects tend to concentrate on theory, or on creativity. Planners, however, never fail to be amazed at the way that technical subjects are successfully incorporated into the regular life of schools. One of the commonest complaints is that agriculture (or industrial arts) has become too theoretical or that the students rely on the textbooks only. Whereas, our assumption should surely be that training in school (T1) will take on the colour of the school.

A third proposition, related to the previous two points, is that if it is true that a training scheme will go through something of an educational metamorphosis if it is attached to school, then great care will need to be taken in evaluating the consequences of such an attachment. This is to say that metalwork training in school cannot be thought of as a substitute for institutional training, or training in the workplace. In the workplace training, the employment context and other factors will encourage the management to make the training as product-specific as is possible. In the school context, there will be strong pressures to interpret or

re-interpret 'training' as 'exposure' or 'orientation', - in other words to keep students' options open, rather than closing them, as may happen in industry. The implication of this rather basic observation for the comparative evaluation of training in school, in training institution, and in industry is that T1, T2 and T3 are not substitutes for each other. They are all very context specific, and therefore their respective success needs to be measured by tools appropriate to the context in which training is imbedded. For example, a research project that sets out to analyze which of the three training modes is best is flawed from the start. A school would not be a success if it allowed a training component to be organised in the form that an employer might prefer. Nor would an industry training school be a success in its own terms if it was seeking to make the training so general that the trainees were being prepared for mobility.

What this suggests is that the 'diversification' of education through building industrial arts complexes, or agricultural or commercial workplaces, will turn out to be more of an educational than a training project. The children will not be trained, if the school is doing its business; they will, at best, be oriented to these subjects. And the success of this orientation cannot be measured by whether they join a particular career, any more than geography can be evaluated by how many students become geographers or geologists.

The case of Education with Production

We have laid out the above discussion without any reference to particular political economies, whether free market or socialist. Obviously the model makes an assumption that the institutions of school, the training systems, and the enterprises will tend to have an influence on innovations, almost regardless of the wider political economy. There is an additional implicit assumption in the model, and that is that schooling privileges academic knowledge. In this sense, the model is possibly more useful for looking at change in rather stratified education and work environments rather than at situations where intellectual labour is not significantly privileged over manual. It therefore may be of some use in anticipating institutional resistances in ex-colonial countries seeking dramatically to alter established traditions of school and work, as well as in countries of Europe and North America where each successive unemployment crisis unleashes debates about school relevance.

There is a special resonance attached to the union of education and production, and that we shall come to shortly. For the moment, we shall look briefly at the various settings in which production is intimately linked to education, in schools, in training institutions, and also in the enterprises themselves. Since there has been a tendency to focus on schools and productive work, it may be worth starting at the other end of the spectrum.

Education and training in relation to productive enterprises

In the diagram, the circles E2 and T3 refer to education and training closely associated with the productive process in the firm or factory or farm. It may be valuable to distinguish at the outset informal, on-the-job learning from situations where the education and training components can be seen as discrete activities. Thus, in many jobs, there is no separation of education and training in the induction process. The job is simply picked up by doing more of it. To some extent this is the situation with much unskilled and semiskilled work, where the induction is only a few days. But it is also true of early forms of apprenticeship, including much of the informal sector apprenticeship in developing countries.

This mention of unskilled and semi-skilled work raises a rather basic difference in looking at education-and-production from the workplace as opposed to from the classroom. From the former, it may seem obvious that semi-skilled jobs do not demand any special education and training schemes to do them better. But from a classroom perspective, the impression is sometimes conveyed by proponents of education-with-production that *any* productive work - however unskilled - will produce the desired effect on the students. To put this another way, we could say that industry and agriculture enterprises are unlikely to invest in education and training schemes that are beyond the skill and knowledge needs of the work itself, whereas schools may sometimes be tempted to lay on the students productive work that is essentially unskilled labouring work that is quite undemanding.

In informal apprenticeship and on the job learning there are clearly discernible elements of education and training, but they have not been formalised or separated out. They are really inseparable from the socialisation process. But as in a number of countries apprenticeship becomes formalised, it is possible to detect the emergence of both an education (E3) and a formal training component (T3). Often the E3 element is covered by release to technical school or college, and the T3 portion is picked up in the firm itself or also by release to a local college. There is often a rather complex negotiation about these E3 and T3 components, especially when they are organised off the job. The 'education lobby' in several countries insists upon a modicum of general education/liberal studies for the trainees, the 'training lobby' is concerned with widening the theoretical base of the field in which the apprentice is becoming a master, and the firm is doing the training through production.

But in these dual off-the-job education-cum-training situations, it is obvious that education is not being combined with production in the same institution. Indeed, in many kinds of release, sandwich and 'alternance' arrangement, the education and training is quite separate from the enterprise, and obviously organised by quite different institutions. This means possibly that there is no particular interest in the production process by those offering the education and training; nor may there be any particular concern with what goes on in, say,

liberal studies in technical college on the part of the industry. What we really have here is education and training separate from production, and it is debatable whether this mode of interaction should be central in any state of the art of Education with Production. Instead, what might be reviewed, very relevantly, are the views of production by those responsible for organising the education and training, and vice versa.

One setting where training is much closer to the production process is where the firm established its own training school within the establishment. The reasons for this are often complex and varied, but include the desire to insure that the training is directly relevant to production, and in some countries the desire to claw back training levy funds by demonstrating the adequacy of in-house training. Not a great deal of work yet is available that examines the nature of these industry or enterprise training schools, but one assumption worth checking would be that the education component would be relatively insignificant. In this sense, the schools are more illustrations of Training and Production than of Education with Production.

There are several other points that should be made about these training schools. First, they tend only to be feasible for large scale enterprises, since only the large firms can allow for the development of separate training departments. Second, in some situations, e.g. Tanzania, the training schools can begin to have a life of their own, and take on trainees who are not going to work in the company. This reaffirms a constant problem in the developing countries - that it is easier to offer training than the opportunity for productive work. So the training side gets out of balance with production. This must be a very crucial concern for any review of education and training with production, for the tendency in many developing (and even developed) countries will be to use the training system as a substitute almost for the lack of production. Some training institutions will try to keep the balance between the two by insisting that only sponsored students (i.e. those with jobs) can get access to sandwich courses etc., but there is widespread evidence of shadow sponsorship in countries that lack opportunity for productive work. And in others, the imbalance between training and jobs is openly acknowledged by allowing 'apprentice' training without any sponsoring.

A third point should made in respect of these industry training schools. At this moment there is considerable interest in some of the development assistance agencies in giving priority to training that is as close as possible to the workplace. This may be the result of a reflection about the costs and benefits of school-based training, or the tendency for training colleges to be out of tune with or expand far beyond the 'needs' of the economy. But whatever the influence, there is evidence of a desire to close the gap between training and production. The rationales and forces behind these moves will require close attention in any state of the art, or state of practice in this field. For example, the emergence in

Singapore of joint venture training schools between foreign countries and the government may well be part of a strategy for transfer of technology with very close connections to international firms.

Part of the task of a review in this field is to pick out trends and important policy questions, as well as to pinpoint examples of the integration of education and production that looks promising, and that may justify closer research attention through case studies. Thus, even though there may be few examples to hand, it may still be important to examine quite isolated incidences of education, training and production. For instance, in some factories, e.g. the textile sector in Brazil, the trainees actually carry out the production of spare parts for the firms, which analytically produces a situation of training with production within a wider production process. In other situations, mini-enterprises have been funded for small groups of young unemployed, where the training component is not specific to a particular process but to the whole issue of running a business. Other examples of this are associated with the Commonwealth Youth Programme in Africa.

Thus, in determining what are the salient features for review in any regional or national setting, it will be essential to have some sense of the national and external agendas on training and employment, as well as some uncharacteristic examples of pilot programmes or NGO programmes that fall outside the national picture. There is no question therefore of deciding in advance for all regions, North and South, that the key combination worth analysing is some form of training in industry. What will be important, however, is to sort out on a region-specific basis the extent to which we are talking at all about Education and Production in P3, as opposed to various combinations of training and production.

One final point should be made in this set of comments about education and training in relation to the firm, and that is that there is a general tendency to think about industrial production rather agricultural production, and to think of both of these before commerce and the service sector. One possible explanation for this bias in favour of industry and agriculture is that one tradition of thought about education and production justifies the union in terms of linking intellectual and manual endeavour. In many developing countries, this bias towards manual work in agriculture or industry may make good sense, but in many of the industrialised countries, the service sector is increasingly where most jobs are located. It becomes important, therefore, to ask some questions about the changing nature of production (of goods and services) in different kinds of countries. The whole pattern of day release, sandwich courses and 'alternance' training may fit in much better with the industrial sector than with the commerce and service sectors; it may therefore be necessary to reinterpret the meanings of education and production, and training and production in the face of the service industries.

With the rise of information technology as a major employment sector in the most advanced economies, there is a further challenge to the implied dualism of

intellectual and manual work in the phrase Education and Production. As new information technologies (NIT) begin to be widely adopted in schools, it will be necessary to analyze how their introduction is similar to and different from subjects like carpentry, metalwork and agriculture. It is interesting to note that NIT in schools appears to form much closer liaisons with maths than it does with some of the industrial arts subjects. This might suggest that education and training in respect of new information technology enterprises may throw up very different patterns than those associated with older, traditional industries.

Education and production in training institutions

In our treatment of education and training in relation to production in enterprises, we have suggested at one level a historical process whereby the education and training elements gradually got separated from the production per se, especially in larger enterprises. There is some evidence from the history of training systems that the element of production by the trainees becomes important at particular stages of development of the institution and of the country. This was true of government trade schools in parts of Africa. But even today in some countries, the use of student labour allows some training institutions to compete for contracts and earn revenue. Elsewhere, the inability of government to provide materials to technical schools has pushed some institutions towards contract work where the customer provides all the materials, and the students provide the labour under supervision. There are probably many examples of technical and trade schools turning towards production, less on philosophical grounds than on sheer expediency. Much of this takes place in the South where trade unions are frequently weak, and it would not be possible in parts of the highly unionised North.

This means, in terms of the original diagram, that in some instances production in training institutions (P2) may be a very serious endeavour, but open to possible abuse. In other, such as the *escuelas agricolas* of Latin America, or the trade schools associated with the Salesians in Chile, Argentina and Uruguay, there has emerged a tradition of production in training that has had little scholarly attention.

Possibly the field of training where production will be most evident is nonformal education, especially small scale initiatives carried out with the aid of non governmental organisations. The range of possibilities is enormous here, but the total numbers of people exposed may remain small, since so many of these programmes are tiny, tailor-made exercises. Since Wim Hoppers has done an extensive elaboration of the possible categories of training involved in this nonformal sector, we shall content ourselves with drawing attention to his distinction between stay-put and through-put training. In the latter, successive cohorts go *through* the training centre; in the former, the trainees *stay put* in a

small training-cum-production unit which is spun off and becomes their own enterprise. Obviously the attraction of the through-put is that large numbers can use the same institution. The hope in the stay-put approach is that the training is inseparable from production and self-employment. Again, little is available in the literature on many of these small endeavours, but knowledge about their successes and failures could be of vital importance for realistic approaches to self-employment.

Education and production in schools

Most of the available literature relates to production (P1) in schools (E1). There is of course a good deal also on the introduction of various training components (T1) in schools. In both cases, as we have argued above, there is a strong tendency for the institution of the school to absorb and often to weaken the thrust of the training or production initiative. Thus production can become progressively watered down to varieties of desultory productive work, a short period of work experience, or a little prevocational education. And training can change very easily into mere orientation. Given the very dominant academic culture of schools, none of this should be very surprising, especially in countries that have been affected by colonial education.

However, there are new and compelling reasons for evaluating what has and has not been learnt about production in schools. Particularly in developing countries, new generations of politicians are faced with the escalating enrolments and costs of schools, as much as by the evidence that little relevant employment (in the wage and salary sector) awaits the school leavers. Hence there is now widespread recourse to the hope that schools can fashion students for *self*-employment. In many parts of Africa, politicians are urging their school systems to offer practical skills, become polytechnical, develop production units, and cover more of their costs. Not all of this enthusiasm for skills in school actually involves production, and a good deal of this practical aspiration has not yet been translated into practice. Still it is not too early for a state of the art in this field to examine the assumption behind these recommendations.

But it is not just a question of looking at some of the rationale for schemes which were on the drawing board in mid-1980s (e.g. Ethiopia), but also at the experience of institutions that have for almost two decades been exploring many possible relations between education and production. By 1987, Tanzania had twenty years history of combining education with various forms of production, from primary school to university, but we have remarkably few accounts of what this has meant for teachers and students at the level of the individual school. The half-study/half-work schools built by Cuban aid in Tanzania are said to be highly successful, as were the MTUU primary schools supported by UNICEF. But despite the gigantic efforts at thousands of schools around the country, there seem to be few available sources on what has been learnt. There are aggregate figures

of acres under cultivation or tons of various crops, but few 'process' studies that would give a sense of what this means to the local community, its village teachers and its children.

The situation is better with the internationally known experiments in Botswana. There has been a steady flow of material commenting on the politics and pedagogy of this series of innovations. Much of this has emanated from those closest involved, but the process of sifting and sorting out the lessons continues, and with the most recent publication, *Looking forward from Serowe*, and allied research, it will certainly be possible to reach some provisional conclusions. Elsewhere in Africa, work is just being concluded on the production units in Zambia, and is just beginning in Benin, and in the examination of the education and production schools in Zimbabwe.

In many of the situations where education is related to production, the existing documentation is much stronger on the rationales and justifications, on the normative issues of what should be achieved, than on how the programmes are actually working out in the field. Any state of the art will have to deal very sensitively with this present imbalance in the literature. For this reason, it may be useful in closing to make a number of comments about the methodological challenges presented by this kind of review.

Methodology and scope for state-of-the-art reviews in the area of Education with Production

It is hoped that in different regions it will prove possible to carry out state of the art/state of practice reviews on Education with Production. If these are to reflect the history, traditions and priorities of particular regions, there will be a large component of the scope and even methodology that will be region-specific. For example, many parts of the Anglophone African region look back to as recently as the 1950s, when Education with Production was in some form included in upper primary schools of the colonial era. Some regions or countries (China, Vietnam, Cuba and Tanzania) have been exposed to education and production for between twenty and forty years; others such as Ethiopia, Zimbabwe, Benin only began to explore its potential during the 1980s. This local tradition of experiment and experience is bound to colour the approach, as will the local state of production in industry or agriculture.

Beyond this essential regional specificity, there are a number of commonalities which might appropriately be taken into account in reviewing the rather complex world of education and production, both in terms of the scope and methodology of work:

a. Given the imbalance referred to earlier, it will be important to identify what work treats Education with Production (EWP) not only normatively, but as a process located in real school and production settings. The very absence of

process studies, e.g. in Tanzania, may argue for some commissioned case study work.

b. Since Education with Production is on the agenda of governments, it will be crucial to extend the review process beyond the analysis of conventional published, scholarly material. It will also be important to take account of the grey literature associated with political speeches, commissions of inquiry etc. Equally, because of the agency interest in aspects of this theme, some attention should be paid to their own concerns with evaluation of EWP.

c. More broadly, because of the possible location of educational production in any of the circles of the model, it will be necessary not to restrict the search to the world of education, but also to examine the sub-literature generated by the training lobbies in the region, as well as developments in industrial attitudes to training.

d. More broadly still, although reviews should have a regional focus and audience, they need to be aware of the international dimension which has an impact on local patterns of training and production. Industrial restructuring in the North, and the rise of information technologies, do have an impact in the countries of the South, throwing up the need for different skill mixes. This may mean that reviewers of EWP will need to be cognisant of the technological change literature to a limited extent, especially if attention is being given to new forms of training associated closely with the work place.

e. In a state of the art of EWP, it will be less important to review all the available literature (in the manner of an annotated bibliography) than to pick out some of the really central work available on different aspects of the theme. The selection of such material in turn has to be guided by an appropriate framework and concept for the region concerned.

The regional framework for what should be included in EWP and what should be omitted may present the most difficult part of this task. To some extent the model may help in distinguishing predominantly training elements from those essentially concerned with production. It must also be borne in mind that the prevailing characteristics of the education and training environments will very likely alter very significantly the kind of production that can take place within them. It will make sense to distinguish very carefully production-as-affected-by-education (P1) from production-as-affected-by-training (P2) and this in turn from regular production (P3).

But a more problematic division may need to be observed between what may be termed technical rationales for EWP, and political rationales. In the former the

fascination with EWP may be derived from a concern with passing some of the costs of education to the schools, or with attempting to offer a curriculum that will help children to embrace self-employment as well as wage and salary jobs. These approaches of course are also derived from political decisions, but they treat EWP as a mechanism or a variable that can be manipulated, like class size. On the other hand, EWP is also advocated by groups, individuals and parties who perceive it as the expression of a wider philosophy or ideology of cooperative or socialist development. Obviously these approaches to EWP can be found as individual experiments within countries that have not adopted the approach more widely, or as part of national education policy. In addition, between these minimal and maximal rationale for EWP there are clearly others, to some of which we have referred.

The purpose of distinguishing between the varieties of EWP in different regions must be to insure that the separate rationales and objectives are taken into account in reviewing the evaluation literature. For instance, in the maximalist approach to EWP, the aims of the innovation are not merely to cover some cost of schooling through production. Hence a research tool that attempts an evaluation without taking sufficient account of the differing objectives, *and* their interpretations by teachers and students may often not do justice to the programme. This may seem an elementary point, but to appreciate the great distinction in rationales it will be useful for researchers to contrast the literature associated with the journal, *Education with Production*, with that associated with experiments in vocational training that perhaps involve productive work. It would be important to sort out for any particular region the dominant examples of different traditions, but it is quite possible that a micro project may illustrate a whole tradition of EWP, even though it is relatively isolated within the country or region.

In order to narrow the field to the essential illustrations of EWP, it may be necessary to examine rather critically the difference between production and productive work. In many countries a lot passes under the banner of 'education and productive work', or 'socially-useful productive work' which is little more than a token nod in the direction of production. In these contexts, it may be necessary to employ some guideline such as accountability to separate out much practical arts education from education that meaningfully anticipates production. Similarly, there has to be a guideline or marker to help separate various forms of child labour, unpaid contract work by students etc. from EWP that has some pedagogical significance. These markers will obviously differ somewhat as we move from production in schools, to training institutions, to learning associated closely with enterprises; and they may also differ somewhat depending on what tradition of EWP is being examined at any point. They may also need to delimit the social significance of EWP.

The purpose of investing some time in the examination of this field must be to bring to a series of regional audiences insights about connecting Education with Production at a time when many people are casting around for solutions. The principal audiences of such a policy review would therefore tend to be regional directors of non-governmental organisations, regional representatives of aid agencies, regional decision-makers in ministries of education and labour, representatives of training organisations, unions and employers' organisations. For some of these, this kind of review may offer some policy options as well as a checklist for contemplating action.

Part II

The state-of-the-art of Education with Production in selected countries of Eastern Africa

This second part of the book present chapters on the state-of-the-art of Education with Production in four Eastern African countries: Tanzania, Kenya, Zambia, and Ethiopia. The chapters are in fact a summary of the original reports that came out of the individual country studies. The concern the following: for Tanzania Komba and Temu, 1989, and Komba (ed.), 1989; for Kenya Sifuna and Shiundu, 1988; for Zambia Haamujompa and Waddimba, 1988; and for Ethiopia Dibaba *et al*, 1988. These reports were produced in mimeograph form and are only available in limited copies.

The studies all followed a similar outline and approach, resulting from the joint preparatory work carried out by the national teams together. They review existing literature on the subject and utilize additional information obtained from field visits to a variety of institutions that were in one way or another involved in productive work. Mostly the emphasis has remained on productive activities within general education as well as within training settings. Within these domains it also turned out that much attention was given to vocationalized education, whether or not any explicit productive work was ongoing in the institutions concerned. The lack of clear empirical data on what actually went on in these institutions has also contributed to the difficulties of arriving at a clear understanding of the realities of EWP at the ground level. Much of the discussion, therefore, out of necessity, remains hypothetical and needs to be verified by focused empirical studies. As was noted in Chapter 2 data on activities within the third domain (the work environment) have remained scarce.

A further point to note is that the studies and the reports have been produced in rather difficult circumstances, as the work had to depend on pure personal interest and enthusiasm, and moreover had to compete with heavy daily workloads. In addition, in the case of Ethiopia the finalisation of the writing was overtaken by the collapse of the Mengistu government and later the transfer away from headquarters of the principal researchers. This, together with other delays due to problems of communication, has contributed to a situation that some of the information may be dated.

Tanzania: education for self-reliance dimension of Education with Production

Donatus Komba and Elisha Temu

Introduction

> "The independent state of Tanzania in fact inherited a system of education which was in many aspects both inadequate and inappropriate. It was however its inadequacy which was most immediately obvious" (Nyerere, 1967:4).

After five post-independence years of attempting to expand the colonial system of education, and making patchwork modification to it, Tanzanian leadership realized that what was needed was not more of colonial education, much as the situation of manpower shortage demanded it, but first and foremost a qualitatively different type of education. The blueprint for the independent nation became the policy of Education for Self-reliance (ESR) launched in 1967 and further elaborated upon through several subsequent policy statements (Komba and Temu, 1987:1). A cardinal dimension of ESR was the integration of Education with Production (EWP). That highlighted the need for Tanzania to relate in a very fundamental way the process of learning to the productive work life in society and therefore to the process of national development at large.

The philosophy of EWP in Tanzania

The policy on the integration of Education with Production (EWP) in Tanzania is best understood by placing it not only in the context of the macro-policy of ESR but also in the context of the ideology of *Ujamaa*. This was a Tanzanian version of socialism based on traditional values of human respect, work and communal sharing of major resources, and on egalitarian principles as adopted by the nation in 1967 in what is known as the 'Arusha Declaration' (Nyerere, 1968). According to it, Tanzania would become a nation consisting of none other than a class of people engaged in production, i.e. peasants and workers. There would be no room for a non-working and exploitative class, living of the sweat and toil of others. It is in the context of that Declaration that ESR was conceived as a policy to mould the youth to the image of an *Ujamaa* society. Accordingly, within ESR five rationales were put forward for the pursuit of EWP as a specific policy dimension.

The first rationale was politico-ideological. It underlined the commitment of Tanzania to use the education system to create producers out of the learning population, whom colonialism has taught to view the school as a way to avoid

working on the land and join the class of those who lived apart from their community and on the sweat and toil of others. Specifically, the introduction of productive work in learning institutions would help change the prevailing negative attitudes towards productive work and the labouring masses whose sweat and toil ironically made education possible.

The second rationale was sociological and was directly linked to the first. That is, through EWP Tanzania would produce citizens who would both in attitude and practice not set themselves apart from their communities of origin but be agents of change for their development. In this way educational institutions would become community development centres rather than alien entities that used to siphon off human resources of the community and so exploit and impoverish it.

The third rationale was economic. It was argued that EWP would enable the nation to tap effectively otherwise idle energies of young men and women in educational and training institutions who were conditioned to believe that their responsibility was merely to learn and not to work while they lived on the labour of the weak old folk in the villages. In this way these young people never learned to relate their education or training to the life-blood of their society i.e. production. They thought education gave them the right to consume freely the surplus generated by their communities. By introducing productive work in learning settings, it was hoped they would begin to work as they learned and to learn as they worked and so contribute to meeting at least part of the costs of their education or training.

The fourth rationale was pedagogical. That is, through EWP education would lose its purely academic orientation and become more practical and functional, as each level would be designed to meet the needs of the working life of those who would stop at that level rather than the needs of those few who would proceed to further education or training. Accordingly, the education of each cycle would be planned as if it were indeed terminal, preparing the youth for a productive work life in their communities.

The fifth rationale was paradigmatic or philosophical in the sense that EWP would be instrumental in forging a new orientation, a new vision and value for learning that should result into a new definition of the quality of education in the context of the independent society, and hence the design of a new curriculum, a new pedagogy, a new school organization and, above all, a new assessment system.

Historical background

A quick glimpse at history reveals that the concern to relate education and training to the world of production is not new in the Tanzanian context. Those who have analyzed traditional African education do attest to the predominantly practical or functional nature of education-cum-training offered to the youth and indeed from their early childhood (Ocitti, 1978). In those days to live was indeed

to learn, and to learn was to try to live better. In other words, education and training went together and both were part and parcel of life. However, a rift between education and training on the one hand and productive work or indeed life on the other was evident with introduction of western schooling and the emergence of work in the form of wage-employment. Komba (1980) has taken pains to show how over time the rich concepts of 'education' and 'work' got transformed under capitalism and came to mean merely schooling and wage-employment or 'jobs', the former being a preparation for the latter, and not for life. Work largely ceased to be a context of education and training besides being a context for production.

In Tanzania the first western school was established in Bagamoyo by the Holy Ghost Fathers in 1863 to absorb some of the slave captives emancipated by the British. In line with the prevalent prejudices against the recognition of the intelligence of Black people that existed then, the Bagamoyo school programme was heavily laden with a component of industrial and manual work as rooted in the Platonic tradition. As if this beginning of unfortunate associations with the school education were not enough, most education policies of the colonial administration reinforced the negative attitudes among Africans towards manual labour in educational settings and even to industrial education.

Specifically the Germans ran technical-oriented school programmes (as was the case of the Tanga school in 1892) largely designed to meet their requirements for artisans and technicians in such areas as the Railways and Harbours development. The British on their part opened a technical training centre at Mgulani to cater for ex-soldiers for fear that, if left idle, they might become agitators for political independence. It is worth noting that this later led to the establishment of to Technical Schools (Ifunda and Moshi). Moreover, their Ten Year Plan of Education (1947-1956) emphasized manual skills for Africans in what were then 'middle schools'. But the plan failed because it was unpopular. In addition, negative attitudes to the established technical schools grew so much that the demands for more academic education led to in-school riots in the first post-independence years.

A more significant British colonial education policy that reinforced negative attitudes towards work in educational settings was the maintaining of a radically segregated school curriculum whereby black people received an industrial and/or religious type of education which barred the road to further education and therefore to renumerative wage employment, while the European and Asian population received an academic-oriented education geared to further education or training which in turn guaranteed white-collar wage-employment.

In the light of this Africans justifiably believed that the rules of the game were unfair in the context of the colonial socio-economic reward structure and called for good academic education to be offered to them as it was offered to other races. Even their political party (then TANU), that championed the struggle for political independence, tended to support the same popular sentiments. This

perhaps explains why one of the first interventions into the education system at independence was for government to abolish the racially segregated curriculum and establish a single integrated national curriculum that was essentially academic. On the same score, it would seem, the government even went as far as abandoning for some time the teaching of agricultural skills in the primary and middle schools, not withstanding its presumed vocational importance. This shows that for the African people academic education, unlike industrial education, was regarded to be truly 'vocational', given its value for upward mobility of its recipients within the prevailing socio-economic reward structure.

However, it was not much long after that the post-independence government realized the need to give education and training a work orientation in the framework of the new ideology of Socialism and Self-reliance and through the new policy of Education for Self-reliance introduced in 1967. That was reinforced with a training policy as contained in the Vocation Training Act (1974), the Musoma Directive (1974), which required all schooling to be integrated with productive work, and other documents as a basis for an EWP-oriented educational reform.

System of general education and training in Tanzania

The formal system of education is 7-4-2-3 to 5. That is 7 years of primary education, 4 years of secondary education, 2 years of advanced level secondary education, and 3 to 5 years of tertiary or university education, depending on the nature of the programme one pursues. Non-formal or out-of-school education parallels the formal general education. Thus we have functional literacy running from stage 1-7 (which parallels primary education), Distance learning stages I and II which parallels the secondary cycle education) and Distance learning stages III which corresponds to advanced level secondary education.

The national formal vocational training system consists of two categories of training institutions, namely, (a) Vocational Training Centres (VTCs) under the Ministry of Labour and Manpower Development, and (b) Trade Schools run by non-governmental organizations, notably churches and/or missionary societies, and to some extent by local communities, parastatals and even government. In 1987, it was reported, there were 6 VTCs (Dar es Salaam, Tanga, Mwanza, Dodoma, Moshi and Morogoro) with an enrolment of about 3000 in over 30 different trades. In the same year there were 167 Trade schools with an enrolment of 5000 in various vocational fields i.e. 106 church/missionary trade schools, 59 private trade schools, 60 trades schools run by parastatals and 7 by government.

The coordinating authority for all vocational training in the country is the National Vocational Council (NVTC) that was established by the Vocational Training Act of 1974 but began to formally function in 1981. Its functions were: to handle vocational training policy issues; to supervise schemes of training and

governing regulations for institutionalized apprenticeship training; and to handle the registration, inspection and certification of all institutions imparting skills and knowledge in a trade or occupation. The executive body that is charged with the implementation of the directives of the 1974 Act is the National Vocational Training Division (NVTD) within the Ministry of Labour and Manpower Development. Its functions include the administration of Trade Tests, registration, inspection, curriculum development, planning and coordination of the development of training programmes, and institutions, as well as staff development especially in terms of the training of instructors, supervisions and training officers (UNESCO, 1984:27-28).

Within general education there is technical and vocational education. This consists of:

a. crafts subjects and agriculture in over 10.000 primary schools;
b. post-primary technical centres (PPTCs) (about 313 in 1984 with an enrolment of 11.000);
c. pre-vocational 'technical bias' secondary schools (16 government and 35 Community or Tanzania Parents Association - TAPA - schools), as well as 'agricultural bias', 'commercial bias' and 'Home economics bias' schools; and
d. technical Colleges (Dar es Salaam, Arusha and Mbeya).

The Ministry coordinating this technical and vocational education is what is now the Ministry of Education and Culture. Specially within it, the Department of Technical Training Coordination is in charge. This serves as the secretariat for the National Technical Training Advisory and Coordinating Council (NATT-ACC).

It should also be noted that, partly in response to the shortage in skilled manpower resulting from an inadequate formal training system and partly to meet industry-specific training needs, several ministries, parastatals and some of the large companies in the country, run training programmes and even operate training institutions. Thus the Ministry of Agriculture, Forestry and Livestock Development operates 10 Ministry of Agriculture Training Institutions (MATIs), six of which have established Farmers' Wings operating under what is known as the Farmer Training and Production (FTP) Project funded by USAID. This project trains about 150 farmers every year. The Ministry also runs 5 fully fledged Livestock Training Institutes (LITIS) with Farmers Wings attached to them to serve villagers. The Ministry of Communications and Works runs the Morogoro Training Centre as well as the National Institute of Transport. The Ministry of Water, Energy and Minerals runs the Water Resources Institute. There are five more such industrial training institutes - Bandari College, Ardhi Institute, Saruji Training Institute, Tanesco Training Institute and the Sugar Industries Institute.

Sometimes training for industries is offered in settings other than institutes. A good example comes from the Ministry of Industries and Trade under which The Small Industries Development Organization (SIDO) was established in 1973 with the responsibility of planning, coordinating, promoting and offering services and technical assistance to those who start small industries in the country. Within SIDO there exist what are called Training-Cum-Production Centres which serve as training and industrial extension nuclei. These emphasize simple technology using available local materials and manpower as well as local markets for developing entrepreneurship among its trainees. SIDO also offers consultancy services to groups of young entrepreneurs through its wing called Small Industries Consultancy and Training Assistance (SICATA) established back in 1983. Similarly, the Ministry of Defence runs the National Youth Service meant to mould young people to be both patriotic and productive. The programme offers basic military skills and, equally important, exposes youth to productive work through which they get involved in development work under difficult circumstances. All this forms national solidarity for the poor.

Terminologies and types of programmes

Those who have attempted to study the education and training system in Tanzania have found that "the distinction between 'education' and 'training' is not always consistently followed" (UNESCO, 1984:8). Ordinarily technical and vocational education refers to the acquisition of skills as part and parcel of general education while training refers to the acquisition of particular occupational skill or skills as the only goal. But in Tanzania the term 'technical training' often includes what in most countries is regarded as 'technical education'. For example both the National Technical Training Advisory and Coordinating Council (NATTACC) and the Department of Technical Training Coordinating have responsibilities for coordinating technical education as well as training (ibid). In addition, in Tanzania while vocational education and training is geared to the production of skilled and semi-skilled personnel at the craftsman level, technical education and training is meant for occupations of the technical category.

The implementation of the EWP policy in education involved the creation of various programmes within both general education and training institutions both formal and non-formal.

One type of programme that cut across all types of institutions involved in formal education and training was Self-reliance Projects. These are usually organized by and within the institutions. This type was labelled by Komba (1980) as an intra-institutional form of EWP.

But there are also a few occasions when self-reliance projects in which the institutions engage themselves are organized by workplaces or villages. This has been labelled as an extra-institutional or trans-institutional form of EWP. Either

form may be curricular or extra-curricular in terms of its intrinsic relationships to the official teaching and learning process.

Review design, approach and objectives

For both the domains of general education (E) and training (T) the state-of-the-art reviews involved the analysis of published and unpublished literature available on the programmes. Where this was wanting, as often was the case, the reviewers relied on making on-the-spot visits and conducting interviews with actors in the situations, particularly those acquainted with the origins and history of the institutions. Questions centred around the philosophy and motto of the institutional programmes, the learner entry requirements, the theory and production components of the programmes, the efficiency and effectiveness of the programmes, and the problems of implementing them.

Specifically the objectives of the analysis in training institutions included the following:

a. to make evident the underlying principles or philosophy of the institutions;

b. to assess the extent to which the programmes were examples of successful integration of training with production;

c. after visiting some of the typical programmes, to assess the adequacy of the literature coverage on training-cum-production activities and programmes;

d. to isolate factors that contributed to their success; and

e. to point out areas to which future research and policy should be directed.

Education with Production within general education

In this study general education included both formal and non-formal education or education for adults. In the domain of general education two complementary studies were made with a view to obtaining a comprehensive evaluation of the implementation of the EWP dimension of Education for Self-reliance policy during the last twenty years.

One study was a state of the art review of evaluative literature on ESR implementation covering 1967-1985 with a particular focus on EWP (Komba and Temu, 1987). The review covered the various dimensions of the policy, namely, the economic-managerial, the politico-ideological, the curricular-pedagogical and the communal and assessment. A special coverage of the non-formal education was made.

The second study was field investigation intended to gauge the state of ESR implementation as of 1985 (Temu and Komba, 1987). For this study questionnaires were administered in 16 Teachers' Colleges and 41 secondary schools. The respondents were 52 school heads, 517 teachers and 3245 students. In the non-formal education sector 23 Folk Development colleges were studied and interviews were conducted with 45 literacy learners, 84 post-literacy learners, 20 literacy teachers and 50 village leaders from 6 regions of Tanzania mainland.

The review findings focus on three areas namely, planning and management of EWP, EWP implementation and the outcomes of the implementation.

Planning and management

The first significant move by the Ministry of Education at the initial planning stage of EWP implementation was the convening of a National Education Conference at the University of Dar es Salaam in April 1967. That brought together key actors in education including policymakers and practitioners in the field such as regional and district education officers, heads of schools and teacher training colleges, inspectors, curriculum developers as well as some teachers. The purpose of the conference was for Nyerere to clarify the new educational policy as contained in the document of Education for Self-reliance (Nyerere, 1967) and for the Ministry to spell out the immediate sequence and strategy of implementing it. Among other things the conference directed the initiation of curricular revision and advised that each educational institution should have a farm which was to be managed communally and whereby modern agriculture could be practised.

Policy implementers left the conference with great enthusiasm to go and do something. In the absence of a preceding curricular reform the easiest thing to do was to initiate productive projects, known as 'self-reliance projects', within the institutional setting and within time reserved for that purpose in the timetable. In most cases the projects were of agricultural nature; other types of projects received only casual attention.

In due course the Ministry of Education specified the amount of time that should be allocated for self-reliance activities in various educational institutions or levels. At the primary level the range was from one hour per week for children in the lower grades to three hours per week in the higher grades. In the secondary schools and Teacher Training Colleges 10 hours were prescribed. In Folk Development Colleges trainees had to spend 15 hours per week while their tutors should spend 12 hours. Moreover it was decreed that students in boarding institutions were required to meet 25% of their catering budget while day students would meet their mid-day meal expenses.

In the area of EWP programme organization and management the Ministry issued several circulars from time to time. One of the earliest circulars required every educational institution to establish a self-reliance committee consisting of

students, teaching staff, non-teaching staff and parents. In another circular heads of the institutions were required to involve school committees and school board members, the Party and Government officials in the economic activities of their institutions in an effort to integrate the school in the community.

In order to monitor the economic component of ESR the Ministry of Education prepared special forms (EK 1-5) to be filled by institutions. These sought information on incomes from sales and the value of unsold products, expenditure of income realized from the projects; and the value of services and work done on cost-saving activities.

By 1978 the Ministry established a special committee under the auspices of the Sectoral Planning Department to coordinate self-reliance activities in all institutions. The same was directed to provide advice on the implementation of self-reliance activity programmes in schools and colleges (EL/MY/UM/1/81). The Ministry also organised festivals where institutions could display the outputs from their self-reliance projects, and appropriate rewards were given.

In addition, between 1976/77 and 1981/82 the Ministry set aside a total of Tsh. 4,4 million to assist educational institutions in setting up viable self-reliance projects. So on the average about Tsh. 720.000 were available every year. Institutions had to present project write-ups through their respective regional or district planning officers to avail themselves of these support funds. The relevant committee at the Ministry would study the write-ups and allocate funds to those that seemed potentially feasible and productive.

Regional Development Directors as per circular EDG, E1/5/43 were requested to also support educational institutions within their respective regions in their self-reliance economic projects. In fact, these were to be included in the respective regional development plans. In several regions, including Ruvuma and Kagera regions, the response was rather positive.

Support from donors was not lacking either. In Tanga, for example, GTZ provided tools to primary schools to enable them to realize ESR objectives through the Polytechnical Education Support Programme (PESP) under the Tanga Integrated Rural Development Education Programme (TIRDEP). Similarly, the 4H-Club of Finland donated US$ 36,000 for initiating agricultural projects in primary schools in Lesotho district, Tanga. From within the country donations on record came from the Community Development Trust Fund of Tanzania (CDTF) and the Catholic Relief Services (CRS) for the same purpose.

On the whole, in the area of planning and management the review shows that, although a comprehensive plan of ESR implementation was lacking, the Ministry took keen interest in the programme and dished out a number of circulars to guide practitioners in the field in the implementation of the EWP programme. There is evidence that the Ministry maintained close authoritative and supportive supervision of the implementation process.

The implementation of the EWP programme

Knowledge about the process of EWP policy implementation is based on the analysis of reports that practitioners in the field were required to submit to the Ministry Headquarters as well as by reports of evaluative research that was carried out from time to time.

The review shows that most educational institutions were involved in some form of productive as well as merely cost-saving self-reliance activities. The former included the cultivation of various crops, the running of shops for business, the raising of cattle and the running of poultry units, to mention but the most lucrative activities. Less profitable ones included gardening, running canteens, needlework, keeping pigs, etc.. Cost-saving activities included maintenance work within educational or training institutions which would otherwise call for hired labour. Often the value of such work was not easily quantifiable.

As noted earlier on, in the implementation it was expected that the entire population associated with learning institutions, even parents, would take an active part in the self-reliance projects. The participation was to be at two levels. One was the decision-making level, particularly through representative involvement in self-reliance committees. In this regard the review has shown that in most cases the self-reliance committees were in existence and active. For example, 79.8 per cent of them were found active in 1985 and only 14 per cent of students that were interviewed felt that their views on EWP were accorded low respect in those committees.

It was also learned that the work on the various projects was organized on an individual basis, on a group basis (i.e. around classes or dormitories), or on whole-school basis. About 30% of all institutions were said to have a combination of the three types of organization. The time allocated for the activities per week was as directed: 1-3 hours in the primary school and 10 hours in the secondary school or Teacher's College. Generally student participation was rated quite high, while that of teachers was reportedly below the nations' expectations. Specifically in 1985 student participation ranged from 94.7 per cent in secondary schools to 95 per cent in Folk Development Colleges and to 97.4 per cent in Teacher Training Colleges. Parents involvement in the same year stood at 28.5 in Folk Development Colleges, 37.4 per cent in Teacher Training Colleges and 43.6 per cent in secondary schools. Teachers and schoolheads were reported to sometimes decide on behalf of, or to overrule, self-reliance committees especially in matters related to the use of school production.

With respect to the process of linking theory with production, the review has revealed the existence of a knowledge-gap. That is, available studies have focused more on the outcomes, leaving, as it were, the inside of the 'black box' systematically uninvestigated. The little they say about the process suggests that the link between what goes on in the classroom or training workshop and what

goes on in production, is quite weak. Thus learning and production appear to run parallel to each other but without much interaction.

The explanation seems to be threefold: first, self-reliance activities tend to be extra-curricular within institutions of general education. Secondly, the lack of specific EWP orientation in the training of teachers contributed to their failure to use productive activities on the school farm for teaching purposes. Thirdly, closely linked to the extra-curricular nature of self-reliance activities was their non-reflection in the school assessment system. However, an exception in this regard should be cited in connection which character assessment: this forms part of the continuous assessment and does include items that refer to the assessment of learners' attitudes and behaviours regarding EW implementation in the institution of education or training. However, the adequacy of this instrument for gauging learner attitudes and behaviours under consideration is controversial (Idama, 1987).

Outcomes

Educational outcomes

We have noted above that there was a strong educational rationale behind EWP. That is, it was expected that by relating general education to production learners would acquire functional knowledge. skills and values for life. More specifically, the learners would value work of all types as essential for development. They would also become aware of the demands of the production process. Needless to say, the attainment of all this should be linked to both the nature of the curriculum and the assessment mechanisms that we have discussed above.

As to these outcomes the review shows that not much is directly known. Often learning is inferred from the production that is realized. This is not a valid deduction as it is possible to have much production from robot-like work activity! There is, therefore, need to assess seriously just what is learned from self-reliance projects in general education institutions. The research reviewed so far is not conclusive.

Social/communal outcomes

The impact of the EWP implementation on the community surrounding the educational institutions was one of the expectations of Education for Self reliance (ESR). It was envisaged that some of the self-reliance activities would be those that should bring the school community and the local community together in the spirit of give and take. That is, at school new ideas and new practices would be tried out for the community to emulate. From the village around, the school should tap on both indigenous and non-indigenous resources and expertise

available there. In short, the school should become a responsible educational and development resource centre vis-à-vis the local community.

Also in this respect does the research review indicate a knowledge-gap regarding the EWP programmes as a link between the school and the local community. More is known about the contribution of the village community to the school: for example through providing labour to put up the physical plant, and paying fees and other forms of cost-sharing. The school may well have largely remained an institution that siphons off youthful energies from the local community never to return. The greater the number of educated that a community has, the poorer it may become in terms of its human resources for development. Also the quality of the production and the technology used at school can in most cases not be really exemplary to the surrounding villages.

Economic outcomes

The review points to the predominance of the economic motive behind EWP programmes. Even the Ministry of Education has for long been economically biased in reporting the performance of schools in EWP implementation.

The review also shows that the data which have been accumulated on self reliance projects have several gaps which make it difficult to assess the economic dimension of EWP. For example, without data on what resources the school has or has acquired for implementing the EWP policy and without data on incurred costs, one cannot deduce much regarding the real value of the production that the school may have realized.

Yet this is the case with most of the evaluative studies on ESR implementation. The review has revealed that often the schools which the Ministry rated high in terms of output from self-reliance projects had received large financial support which was not taken into account in rating their performance and so falsified it. Table 1 below attempts to provide a more balanced picture.

Against these limitations the review reveals that while there are institution in Tanzania that produce more than the required level of 25 per cent of the their catering bill, the average school by 1985 contributed just 10 per cent. This rather unsatisfactory level of the economic performance has been explained by several factors including the extra-curricular nature of the EWP programme, inadequate resource base, failure to get or tap local markets, lack of incentives and training of teachers as well as lack of institutions to support graduates from institutions involved in EWP implementation.

Table 1: *Gross revenue, cost of production and surplus income from self-reliance projects in government secondary schools 1980-1985*

Year	Gross Revenue	Cost of Production	Surplus Income	Cost/Surplus of Ratio Production
1980	11.058.108,50	8.238.198,35	2.819.910,15	2.9:1
1981	15.855.817,10	12.605.497,10	3.250.320,00	3.9:1
1982	20.704.561,10	14.413.570,70	6.290.990,40	2.3:1
1983	25.587.431,75	17.038.004,70	8.549.427,05	2.0:1
1984	37.234.909,75	24.044.689,35	13.190.220,40	1.8:1
1985	41.796.662,35	25.695.952,70	16.100.709.65	1.6:1
Total	152.237.490,55	102.035.912,90	50.201.577,65	14.5:6
Average	25.372.915,09	17.005.985,48	83.669.296,08	2.4:1

Source: *Compiled by the researchers using data from the Ministry of Education.*

Education with Production in training institutions

The review undertaken in 1987 (the second study) involved consulting available literature on training institutions. This had to be supplemented by field visits to selected exemplary institutions. These included two technical schools, one Teacher Training College, two missionary/church trade schools, three SIDO Training-cum-Production Centres, two Post-primary Technical Centres (PPTCs) and one Folk Development College. Interviews were conducted in order particularly to obtain the philosophy governing the institutions and the factors which might have contributed to their success or failure in their perceived mission.

The literature that was reviewed included reports of research most of which was undertaken by donor agencies and researchers based in the Institute of Curriculum Development and the Faculty of Education. Much information was obtained through direct visits to institutions followed by interviews.

The findings of the review on training with production can be grouped into two types: those related to knowledge-gaps and those related to the content of various approaches or modalities pursued by various administering authorities in general and by specific institutions in particular.

The review shows that the literature available is thin on the life histories of the institutions, on the process of integrating training with production, on the nature

of production, and on the graduates of the various institutions and their relative advantage in the world of work. The review is therefore more descriptive of the broad policies of the government and of voluntary agencies in the area of vocational and technical training in the pre- and post-independence period. What follows are details of various modalities in the provision of vocational and technical education or training.

1. Government institutional modalities

The government institutional modality of getting involved in the provision of vocational and technical training varied from the German to the British colonial administration and then to the post-independence national government. As was already discussed previously the motives behind the provision of the training had not always been the same. Generally, the colonialists recommended practical and industrial education (rather than academic education) for Africans to ensure that they remained traditional and thus supported the colonial economy. But Africans refused education for adapting them to traditional settings and demanded an academic education that the government was prepared to give only to children of other races.

It has been noted that in the post-independence era the government had been vacillating in its vocational and technical training policies and strategies. In the primary school cycle, for example, the teaching of agricultural skills and handicraft was first abandoned at independence only to be re-introduced a few years later under the umbrella of ESR. Similarly, in the mid 1960s, the Ministry of Education gave in to student pressure for academic education and closed down the only two government trade schools of the time, Ifunda and Moshi, that had grown out of Mgulani vocational and technical training centre established by the British for rehabilitating their ex-soldiers. The two trade schools were actually converted into technical schools with academic expectations. Following the closure of those trade schools and with the birth of the policy of 'Education for self-reliance' in 1967 the government had to review its vocational and technical training policies.

The Vocational Training Centre modality

Over time several institutional 'modalities' were developed by government in its effort to take a leading role in the provision of technical and vocational training. The first one is the 'Vocational training Centre' modality. With the conversion of trade schools into technical secondary schools the government had to decide how to produce craftsmen for industry. With the support of UNDP and ILO it initiated the National Vocational Training Programme (NVTP) in 1968 under the Ministry of Labour and Social Welfare. As part of the programme a Vocational Training Centre was established in Dar-es-Salaam. The training there involved

one year of residence at the centre plus 1-3 years of apprenticeship training within an industry. The basic training in the initial year was a combination of practical training in workshop, theoretical instruction in subjects directly related to the workshop work and to the trade, and the up-grading of general education in subjects such as mathematics, science, English and Kiswahili. The in-plant component involved engagement in the actual production process. After one year of such in-plant apprenticeship training the trainees were allowed to take Trade Test III prepared by the central National Vocational Training Division (NVTD) authorities. Other tests were taken if one passed that initial Trade Test.

According to the 1984 UNESCO report, 59 private trade schools had sprung up while there were about 60 other trade schools operated by parastatals and another 7 by the ministry. By 1986 the government was running 10 Vocational Training Centres enroling over 10,000 trainees, 73 per cent of whom qualified for in-plant training placement and 40 per cent finally passed their Trade Tests.

The Technical School modality

We have already noted that the popular pressure for academic education contributed to the conversion of the first two government Trade schools into Technical Secondary schools in the late 1960's. It was believed that more of such schools would go a long way towards self-sufficiency in manpower requirement as emphasized in the National Science and Technology Policy on Education. In 1973 the ruling party, TANU then, called for greater emphasis to be placed on scientific and technical education. Coupled with the secondary curriculum vocationalization and diversification, this led to the creation of several technical-biased secondary schools in the country in the mid-1970s.

Training in a technical school usually involved theoretical classwork where principles were taught through lectures, discussion and demonstrations. It also involved practical work in workshops or building sheds as well as visits to industries. Training was thus combined with productive work. Examples that were visited included the Moshi Technical Secondary School and the Arusha Technical College. In the former case students were reported in 1987 to have realized revenue to the tune of Tsh. 337,422/= from woodwork, Tsh. 42,836/= from welding and fabrication and Tsh. 17,400/= from fitting and turning. At the Technical College in Arusha students were involved in construction, roofing and furnishing of teachers' houses and a guest wing, and repairing vehicles from government departments, parastatal organizations, individuals and private companies. The production of items or construction of buildings was done under strict supervision of a specialist.

However reports also revealed a number of shortcomings of technical training in secondary schools. These included shortages of instructional materials, textbooks and equipment as well as shortages of qualified staff. Consequently there was a high failure rate among students. In the case of Moshi Technical

school, for example, 73.3 per cent of the students failed, 10 per cent passed at grade C level and 16.7 per cent passed at grade D. Teachers were reported to give too few exercises there, while the situation was only slightly better at the Technical College, Arusha.

The 1978 and 1982 JASPA Employment mission called into question the need for and the utility of Technical Secondary Schools as these were considered to be expensive and ineffective in producing skills at the required level. With respect to attitudes there was no hard evidence to show that students who undertook the technical path had positively changed their outlook on productive work. Other things that stand out in the reports include inadequate time allocated to practicals, underutilization of available machines and tools due to shortage of raw materials and spare parts, and unclear objectives for the promotion of technical secondary education and training.

The Polytechnical modality

The Polytechnical approach to training was adopted by a curriculum project called The Polytechnical Education Support Programme (PESP). That was a curriculum experiment under the auspices of the Tanga Integrated Rural Development Education Programme (TIRDEP) working in cooperation with the Institute of Curriculum Development and GTZ as the executing agency on the ground. As a pilot project it aimed developing an appropriate model for primary school agriculture science education cum training from Standard V to VII. It involved the development of teaching units using the modular approach, preparing courses for reorienting teachers, and monitoring the progress of the experimental schools.

Evaluation of the project revealed that it successfully integrated theory and practical work in agriculture. But the demands in terms of well trained personnel and finances were also high and as such the programme had to be modified to provide for core subjects and optional ones depending on their feasibility in the given environment. While the project certainly did well in Tanga as an excellent example of integrating agricultural work into the curriculum it was not clear how sustainable it would be in areas without direct donor support of the kind that Tanga was receiving.

The Post-Primary Technical Centre (PPTC) modality

In response to the primary school leaver problem that was discussed even in parliamentary sessions since 1965 the PPTC Programme was launched in 1975 leading to the initial establishment of 275 Post-primary Technical Centres aimed at providing a two-year training course to primary school leavers. Most of the centres were former Middle Schools which were assumed (wrongly as it later turned out) to have good buildings and craft tools and equipment. The Ministry, aided by DANIDA, provided some tools and allocated Tsh. 140,000/= to each

district for the running costs of the four centres in each. A technical teachers course was initiated in 1976 at Kleruu Teachers' College. However, one of the problems facing the centres was a low national capacity utilization averaging at 27 per cent in 1987. Other problems included the lack of materials, tools and equipment and the lack of qualified staff to run the programme effectively.

As earlier noted the review involved visits and interviews to two centres which by the education authorities were considered 'exemplary' out of a total of about 313 most of which were considered failures. These were Uwemba PPTC (Njombe) and Dar-es-Salaam Centres. It has shown, *inter alia*, that factors did exist which tended to contribute to their success. One was a good tool acquisition policy whereby at the end of two years the trainees left the centres with tools which they could use for initiating their own ventures. The tools were secured by using students' production revenues or were produced by the pupils themselves during their training. The centres had also a committed and innovative teaching staff. Student participation in planning production and using production funds proved to be a highly motivating factor. The centres were also linked to the immediate environment which proved to be a source of local materials, local expertise and services and it served as a local market.

The review has revealed also that the weaknesses of the programme lay in a number of its untested assumptions including the assumed presence of a widespread establishment of small scale industries in rural areas; the existence of a demand for skills in rural areas that would have been created by the Villagisation Programme that began in 1975; the availability of handicraft tools, equipment and buildings in former Middle Schools to enable the programme to take off; and the presence of a positive change in attitudes away from academic education towards vocational and technical education/training leading to genuine readiness of learners to remain and work in rural areas after graduation. One may say with some confidence that the planning of the PPTCs back in 1974/75 without prior needs and resource assessment, was hasty and faulty. That explains perhaps why about 2/3 of all the centres (313) were reported not to be working and had failed at the time of the study.

The Folk Development College modality

The Folk Development Colleges (FDCs) in Tanzania were founded in 1975 as the third phase of the literacy programme, namely, the post-literacy phase, aimed at preventing relapse into illiteracy. Other support programmes for post-literacy included rural newspapers, rural libraries, correspondence education, radio programmes and films.

The objectives of the FDC programme include the promotion of knowledge and skills in agricultural handicraft, domestic science and health science. The implication of this was the need for the students of this programme to engage themselves in real productive work in these areas. This was in line with the

middle range objective of enabling neo-literates to apply their newly acquired knowledge and skills in solving their basic economic social and cultural problems and thereby to participate in their own development.

Evaluation reports on samples of the 52 FDCs have varied over time in the assessment of the programme. A study of 1979 by Malya (1979) revealed that there was a close link between functional literacy and vocational training that was being provided. Another study by the Ministry of Education (Mosha, 1985) showed that the FDC programme was well received by the clientele, the villagers; that graduates from it learned functionally relevant knowledge and skills; and that 78 per cent of them actually returned to the villages to engage themselves in development projects. The knowledge gap in the programme concerned information about the graduates in the field, especially the extent to which they actually utilized their acquired knowledge and skills. The process whereby the colleges integrated learning with production was not well documented either.

Taking Bigwa as a clear example of FDCs attempting to implement the EWP policy, the review indicated that it had both long-term and short-term programmes. The long-term courses took two years and included courses in technical training, agriculture and livestock as well as domestic science. The short-term programme, lasting a few weeks, attempted to raise the knowledge and skills of villagers in production. For this purpose the college ran several productive projects including animal husbandry (i.e. dairy cattle and goats, poultry, piggery and rabbits), horticulture, maize farming, carpentry and masonry.

Through these projects both tutors and learners tried to integrate theory with production. In the evenings the projects were regarded as self-reliance projects and students were allocated to work on them regardless of their lines of specialization i.e. the technical, domestic and agriculture. The problems of the programme included the failure to provide graduates with tool-kits for self-employment later, and the lack of an enabling rural environment for their work.

SIDO Training-cum-Production Centres modality

The review documented information on the SIDO programme in Dar es Salaam, Mbeya and Dadoma. For example, it revealed that the Dar-es-Salaam SIDO Industries Estate had at the time 20 sheds installed with machinery, each producing different items, and a common facility mechanical workshop that produced spare parts. The machinery in the workshop was imported by SIDO and given to clients through hire or purchase. Successful entrepreneurs to SIDO's advertisement for renting sheds and using the machinery underwent on-the-job training on the machinery. The clients worked with the machinery, producing items for sale, thus enabling them to pay rent for the sheds and the mortgage for the machines. Employees, generally untrained, were recruited to work on the

production line but first underwent training at the machines and sometimes were sent to a Training-cum-Production Centre of SIDO.

Discussion on the SIDO programme showed that, despite its success and relevance, the SIDO training tended to be narrow and specific; it was not broad and general enough to enable the trainee to fit into other situations outside the production scheme of original training. Again, because of the brevity of the training period and the low educational background of most trainees, it was doubtful whether they got to know the physics behind the machinery they worked with for ease of maintenance and economic operation.

2. The missionary/church trade school modality

It is noteworthy that missionaries were among the forerunners and supporters of the colonization process in Tanzania. They created an enabling environment for the colonizing powers particularly by establishing schools with both a catechetical and educational function. The curriculum in their schools naturally combined religion with literacy to enable converts to read the Bible. But, because one of their goals was to establish economically self-supporting mission stations, vocational skills training-cum-production was incorporated in their school programmes.

The Benedictine Fathers (Catholic) established themselves initially in Dar-es-Salaam in 1889 but later went further inland to Lukuledi in 1895 and to Peramiho and Tosamaganga in 1989 where they established good trades schools. The Evangelical Missionary Society for German East Africa established itself in Tanga and Dar-es-Salaam in 1887 and later reached to Lushoto where they established the famous Usambara Trade School. The Evangelical Lutheran Church assisted the Wameru people in 1975 in establishing the Leguruki Vocational Training School at Arumeru, Arusha Region.

For closer analysis of the missionary approach the review focused on Peramiho Benedictine Father's Trade School and the Leguruki Vocational Training School. The following aspects stood out as unique:

a. There was an emphasis on character or attitude formation along with the skill training to promote positive attitudes towards productive work.

b. Everything was done to ensure genuine skill mastery learning for the graduates, which rendered them highly marketable even before they finish their courses.

c. There was a serious effort to relate productive activity with skill training; and products were sold to help offset some of the training costs of their institutions.

d. The provision of a tool-kit to the graduates upon completion of their programme to enable them start living by their acquired skill, was guaranteed.

e. The quality of the teaching staff was ensured by selecting teaching staff from among the best of their students, and an appropriate incentive scheme was put in place to ensure a high staff retention rate.

f. The formation of an association of graduates was encouraged so as to link them up to one another and to their training centre. This was a powerful means to help them enter, and successfully function in the labour market.

g. Running costs of the training institutions were largely borne by the missionary society of church with benefaction from abroad.

It would seem, that the various government programmes in training with production earlier outlined above tended to be successful in so far as they incorporated more and more of the elements as listed above that characterized the missionary/Church modality of vocational education or training.

In relation to the impact of missionary/church vocational training, the review reported only one tracer study carried out on Leguruki graduates by Fowler (1986). A number of interesting findings were highlighted. About 50 per cent of the respondents were found to work in rural areas while 20 per cent worked in both rural and urban areas. This was particularly so for those who were involved in masonry work. Only about 6 per cent had migrated to distant urban areas. Over sixty per cent of the graduates were self-employed with ten per cent of the carpenters owning their own workshops and capable of taking contracts or working as sub-contractors. However, about twelve per cent of the respondents were no longer working in the fields they were trained in. Twenty three per cent of carpenters and twenty per cent of masons secured formal employment. The study noted too that formal employment provided the lowest income for the graduates even to the extent of being "lower than daily paid workers".

The study found out that graduates used local materials such as stones, black sand, black soil, clay, and unprocessed timber, sisal and bamboo to produce products demanded of the local community. These included local structures and pit latrines. About 50 per cent of the graduates did not receive any assistance in starting their working life. However, about 20-25 per cent of the respondents received aid from 'UMALE' (*Umoja wa Mafundi wa Leguruki*), the association of Leguruki vocational graduates. The association did ease their access to work, materials, tolls, upgrading courses in theory and practise, and provided technical advice in designing and plan drawing and in acquiring loans.

Other forms of assistance came from friends and relatives, but not from the government or financial institutions. It was the opinion of the majority of respondents that working with others was a much better alternative than working

on their own. Fowler was of the opinion that the school was succeeding in achieving its set objectives but attributed the success particularly to the general economic situation in the country. As this was conducive to the objectives of the Centre it might have been a more important motivating force behind the rural self-employment of the majority of the graduates than the curriculum innovation.

General practical issues in EWP

From the review findings on EWP policy in Tanzania a number of issues do arise. Some of these are more practical while others are more theoretical in nature.

Organization and management of EWP

There are a host of challenges that Tanzania faces in the implementation of EWP. One of them is how to achieve a balance of power in decision-making between various segments of the school population, not only within the school self-reliance committee but also between the committee and the school head as the committee often lacks managerial skills and depends on the head for guidance.

The second is the role of the teacher in the productive projects against his/her role in classroom teaching especially where the projects are extra-curricular. Both of these challenges demand proper training of teachers and schoolheads in organizing and managing production for the simultaneous attainment of its various objectives; economic, pedagogical, social and political.

The third challenge has to do with the extracurricular nature of most productive activities that fall under Education for Self-reliance. These do not seem to be linked much to what goes on in the classroom and as such they risk being performed almost purely for economic rather than pedagogical reasons as well. On the whole there is need to revisit the issue of curriculum content and of managing production within educational and training settings to achieve the varied objectives set out in the policy.

Piecemeal changes of the education system

Ideally the introduction of production within educational and training settings should have been proceeded by a thorough curricular and assessment reform as well as the orientation of teachers and administrators. But in Tanzania the implementation of EWP was done piecemeally. Thus, following the national conference of 1967 school heads went ahead to introduce productive activities in educational and training institutions even in the absence of other essential components of the educational reform. This by itself gave rise to a number of problems in the implementation. One of such problems had to do with production being extra-curricular and not being fully taken into account in the assessment

mechanism. This created some conflict in the minds of learners and teachers between attending to academics in class and extracurricular practical activities. The required change in the assessment system has not yet been fully implemented. For example, the Primary School Leaving Examination at the end of the primary cycle in combination with the Quota system, is still used for selection to secondary education rather than for measuring learning achievement of the primary level terminating majority. Thus primary education is still seen to be largely or primarily a preparation for secondary education rather than for directly coping with challenges of productive life.

Scale of production

Given the still predominant academic nature of the education system there is a practical problem regarding the scale of production that schools should engage in so that it is compatible with the pedagogical mission of the school. There is always the danger of being carried away by the economic objective of EWP and thus failing to balance it with the pedagogical objective, by not setting a limit to the extent to which the educational or training institution should be expected to cost-share.

After ten years of implementing ESR Nyerere (1980) observed: "It is estimated that in the school year 1974/75 economic activities in our schools produced Tsh. 7.7 million .... These self-reliance activities are still small and often ill-organized (...)". Yet it was the feeling of the 1977 and 1982 JASPA Employment Mission that "the cost-covering objectives receive relatively greater emphasis and productive work tends to occur outside the academic curriculum (...)". These two opposing views highlight the problem faced not only by the Ministry of Education but also by schools, teachers and students when it comes to deciding on the aim as well as the scale of production that is appropriate for an educational or training institution.

Theoretical issues

The theoretical issues are related largely to the assumptions which have been made about the EWP policy in Tanzania.

Compatibility of various rationales for EWP

We have noted at the beginning of this chapter that the rationales for the pursuit of EWP were economic, pedagogical, social and politico-ideological. The issue is whether all these objectives are compatible with the essential traditional educational mission of the school as people, teachers and learners understand it. How can productive activity be used as a vehicle to pass on knowledge, values and skills of the traditional subject-centred curriculum? How much of the non-

pedagogical purposes are achievable without steering the school away from that pedagogical mission? This is an intricate issue for analysis (Komba, 1980).

Terminality of education and training

In Tanzania the EWP policy was seen as a way to reform the education and training system so that it should cater for the needs of majority of learners who did not proceed to further education or training, without however ignoring the needs of the few who would have to go on to higher levels of education or training. The issue is how to design a curriculum and an assessment system that is sensitive to both needs. This calls for a new conception of the traditional school whose main function has been to siphon off manpower from the local community and thus impoverish rather than enrich it. It also calls for disengaging the education and training system from its conventional link with the formal sector of the economy and orient it towards the informal sector where self-employment, especially of agricultural nature, is the norm. Needless to say, this is very new and there is limited experience and theory work to guide Tanzania in this regard.

Linkage of educational with overall socio-economic reform

It was the intention of Tanzania to undertake educational reform as part of a total socio-economic reform as conceptualized in the Arusha Declaration on the building of an *Ujamaa*-based society. Indeed Tanzania embarked seriously on a rural development strategy through the creation of *Ujamaa* villages as nuclei of agricultural and industrial development. Resources of the nation were deliberately directed towards rural development, and institutions such as the Small Scale Industries Development Organization (SIDO) were created for that purpose. In that context it was logical to conceive of Education for Self-reliance in general and of education with production in particular.

However, Tanzania faced many difficulties in implementing the *Ujamaa* ideology especially as far as its economic dimension was concerned. The issue now is: how far is EWP as conceptualized in the context of *Ujamaa* ideology sustainable when that ideology is being re-conceptualized in the light of the collapse of socialist Eastern Europe and a western liberal ideology is being adopted instead?

Popular notion of what is vocational

We have seen that the EWP policy has been conceived as a means to render education and training more practical and therefore more vocational. But right from colonial times there has never been an agreement between the government and the people as to what form of education should be regarded to be really 'vocational' in the context of the prevailing socio-economic reward structure.

Under colonialism people believed that it was good academic education that was truly vocational in the sense of giving its recipients an upward social and economic mobility when the colonial government insisted on what was called industrial education. In the post-independence period it has usually been assumed that people should go along with government perceptions of what is vocational. But given the evidence of persisting negative attitudes even today this assumption needs serious scrutiny. There is need for a serious popular needs assessment in this regard. In other words, the vocational school fallacy of Phillip Foster (1965) is still worth considering.

Some conclusions and recommendations

At this point we can draw some conclusions of the review with respect to the scope of its coverage, the quality of its content, and the recommendations for both action and further research.

Ideally a review on Education with Production ought to cover the domains of general education, of training, and of production. But the review of literature in this chapter has focused on the first two domains and it is almost silent on EWP within production settings. The exceptions are the reference to SIDO training-cum-production centres and the in-plant component of the National Vocational Training Programme. There is therefore a knowledge gap here which needs to be filled.

In terms of the quality of the review content in the two domains one can say that it has delved more into secondary-level and post-primary level institutions. Not much coverage has been given to the EWP within the primary and tertiary cycles and the non-formal area. In addition literature is quite thin on the processes of EWP within various institutions. Also literature is silent on the relative performance of graduates from EWP programmes in the world of work apart from one case study of the Leguruki Vocational Training School.

On the positive side the review reveals that Tanzania has an EWP-supportive macro policy environment in that there was a general socio-economic reform policy as a context for the EWP policy. However, with respect to vocational and technical training there has been a lot of vacillation in the government micro policies. There is need for clearer objectives and accompanying programmes that are well planned and administered. There is also need for coordination of the various programmes and the cross-fertilization of ideas and experiences in the various programmes which seem to work in achieving the various objectives set for EWP policy.

There seems to be a difference in the nature of the EWP within the domains of general education and of training. In the former the production is largely extra-curricular and brings tensions given the fact that the orientation of the institutions

is still largely academic. In the latter production tends to be related to the training although the production takes place outside training sessions in most cases.

Within the training domain, the voluntary agency trade schools seem to point the way in the provision of elements for successful training-with-production programmes. Such elements include, inter alia, the provision or making of tool-kits for graduates, the continuation of linkage of graduates with the training institution beyond graduation, the need for the graduates to enter or organize themselves into a network that mobilizes resources and relevant information about the world of work, the need to emphasize the work ethic as well as a heavy practical dose during the training.

Generally speaking, production within both general education and training tends to fulfil more the economic than either the pedagogical, social and politico-ideological purpose partly because of its poor linkage to the curriculum and the assessment system.

On the basis of the review on EWP in general education the following recommendations for action may be made. One, for the policy to succeed the macro-level policies should be reviewed and strengthened. Two, the productive activities should be linked to the curriculum and the assessment system as far as possible. The latter should be revisited in the light of the principle of terminality of each education level or cycle. Three, the ministry should take a comprehensive view of the rationales for EWP policy and strive to assess the programme primarily in terms of the pedagogical outcomes and only secondarily in terms of the economic, social and political outcomes.

Within the domain of training it is recommended that the government should pay heed to the elements that contribute to a successful programme. In this regard there is a lot it can learn from training programmes of non-governmental organizations as much as from some of the successful institutions within its own programmes. In general, there is need for systematic training in the organization and management of production within institutions in both EWP domains. This should affect administrators, teachers and learners in self-reliance committees. There is also need to revisit thoroughly the assumptions underlying EWP in the light of the new social and economic policies currently being adopted or adapted in Tanzania in the wake of the collapse of the socialist block in Eastern Europe.

On the basis of the limitations of this review it is recommended that:

a. a review should be initiated to cover EWP in the production domain;
b. within general education EWP in the primary and tertiary cycles should be systematically studied;
c. there should be an in-depth study of the process of EWP within general education as well as training institutions;

d. there should be tracer studies of graduates from EWP-oriented institutions into the world of work to establish how well they fare there relative to graduates from non-EWP oriented ones;
e. there is need to come up with a self-employment needs assessment that should guide the review of curricula and assessment mechanisms;
f. there is need to revisit the issue of negative attitudes towards work at this juncture when the socio-economic reward structure is changing with the economy.

Education with Production in Kenya

Daniel N. Sifuna and John O. Shiundu

Introduction

Since the achievement of independence in Kenya in 1963, various attempts have been made to vocationalise the formal school system. These involved the inclusion of practical subjects in the school curriculum in order to inculcate in students some basic knowledge, skills and dispositions that might prepare them to become skilled workers or to enter manual occupations (Lillis and Hogan, 1983:89). These efforts have largely been prompted by the problem of school leaver unemployment.

At the policy level, it has been repeatedly suggested that in so far as education equips individuals with skills for employment or self-employment, it can improve the employment situation. However, it is argued, if school leavers are unable to find work for which they have been trained, then the resources invested in them will have been wasted, and the unemployment thus created will have serious social consequences including a higher incidence of crime and political instability (Bray *et al*, 1986:40).

In this chapter we examine Kenyan vocationalisation policies in a historical perspective. We shall focus on education and training in the formal school system, and on training in production settings.

A historical perspective

In Kenya Education with Production (EWP) programmes have a long history which dates back to the colonial period. Partly due to racial factors and partly as a result of a concern that education be directly related to the nature of the colonial economy, technical training was the main focus of the educational policy. As early as 1909, the Fraser Report on education, recommended an industrial apprenticeship scheme for schools (Leader.., 1909). The Education Commission of 1919 adopted a similar approach and argued that for native education to have effect, it should be along technical lines so as to enable graduates to find a future in labour instead of in the literary field. It was considered disastrous to direct them to clerkships and related office occupations (Report.., 1919:7). The famous Phelps-Stokes Commission of 1924 talked of adapting the school curriculum to local conditions with an emphasis on the training in the rudiments of health, home life industry, agriculture and recreation (Phelps Stokes Commission, 1924:23).

On the basis of these policies education institutions were established which geared their activities to training and production. For example, the Jeanes School Kabete, which opened in 1924, had among its activities the running of a dairy

farm, a school cooperative shop and a workshop where students made their own school equipment and furniture. It was hoped that this idea of self-reliance would spread in schools (Department of Education, 1926:28). The Native Industrial Training Depot (NITD) which was also opened in the same year with the objective of providing specialized training in the various trades, carried out technical training as well as production. Between 1927 and 1937, for example, apprentices at the Depot erected buildings worth over £ 128,000 and made articles in the workshops worth nearly £ 25,000 (Furley and Watson, 1978:182). Government and mission schools taught agriculture and trained students in such trades as carpentry, masonry, house construction, tailoring and shoe-making with the aim of encouraging self-help among them (ibid:183).

The Beecher Education Commission of 1949 placed considerable emphasis on the need for pupils to retain rural attitudes useful in rural development. The report advocated a 4:4:4 education system i.e. four years of primary, four years of intermediate, and four years of secondary education. At the intermediate school level, in particular, teaching was to focus on rural science and handicrafts (Beecher Report, 1949:38).

Following the publication of this report, the government established 300 intermediate schools with sufficient land to set up small holdings and demonstrate agricultural and animal husbandry practices suited to the locality. Workshops were also established to teach carpentry and handicrafts. To promote technical training, between 1949 and 1960, building apprentices of Kabete erected similar schools at Thika, Sigalagala, Kwale, Machakos and Eldoret. A technical school was also set up at Mombasa for Muslim communities whose technical syllabus included the carving of Arabic doors, a relatively neglected coastal art (Furley and Watson, 1978:255).

It is important to mention that although the colonial education policy and practice embraced important elements of education, training and production, these aspects were generally unpopular with the African communities. These rejected the political and socio-economic premises of this type of education, seeing it as an inferior provision designed to hamper their political advancement. The argument that such an education was devised to condemn Africans to be forever 'hewers of wood and drawers of water' was supported by the fact that in both European and Asian schools not much emphasis was placed on agriculture and technical training (Dodd, 1969:14).

With the approach of independence, therefore, there were general demands that the colonial administration should provide for Africans curricula equivalent to those in European schools. The occupationally inferior industrial education should be scrapped in the interest of social and political equality.

There was also the general pressure to remove the Common Entrance Examination (CEE) which was seen as a colonial device to prevent 80 per cent of primary school children from continuing their education into the upper classes

of primary education. The examination was indeed scrapped in 1962 and the primary cycle was reduced from eight to seven years. This move ensured that much higher number primary school pupils completed the seventh grade: rising from 50.000 previously to half a million. In a further move, the Education Commission which was appointed soon after independence in 1963 to survey the existing resources and to advise the government on the formulation and implementation of national policies for education, recommended that agriculture be abandoned as a separate subject in the primary school curriculum (Republic of Kenya, 1964:58).

The high number of pupils completing primary education precipitated a primary school leaver unemployment problem since many were not absorbed by the existing secondary schools. The government and voluntary organisations first responded to this 'primary schoolleaver crisis' by establishing non-formal institutions with a strong vocational bias. These included the National Youth Service (NYS) and the Village Polytechnics now known as Youth Polytechnics (YPs). Apart from these programmes, there was a growing concern that primary schools should tackle the problem of the majority of the pupils who completed their primary education and had no prospects of further education or paid employment.

It was in this context that a conference on Education, Employment and Rural Development held at Kericho in 1966 proposed to add two years to the existing primary course of seven years to tackle what it called a 'teenage gap' through the teaching of practical skills necessary for the adult world. It recommended that some practical craft, agricultural and youth training be infused in primary education (Sheffield *et al*, 1967:24). This proposal was later taken up by the International Labour Organisation mission to Kenya in 1972. It proposed a restructuring of the school system to include one cycle of basic education of 8 or 9 years duration which would be devoted to pre-vocational subjects (International Labour Office, 1972:xi).

The report of the National Committee on Educational Objectives and Policies (NCEOP) of 1975 endorsed the ILO Report's recommendation to restructure the education system. It also stressed the need to integrate the school and the community through the teaching of such subjects as cultural studies, agricultural science and pre-vocational studies (Republic of Kenya, 1976). In 1979 attempts were made to launch the proposed restructuring of the school system by the creation of a Ministry of Basic Education to steer its implementation. Developments in this direction were stopped in 1981 following a pronouncement that the country was to begin preparations to move from the 7:4:2:3 nomenclature to an 8:4:4 education system.

This pronouncement seems to have been prompted by the proposal made by the report of the Presidential Working Party on the Second University in Kenya. The Working party appreciated the reasoning by the NCEOP that primary

schoolleavers should acquire some basic education in addition to numeracy and literacy skills (Republic of Kenya, 1981:10). From the Kericho Conference through the ILO and NCEOP reports, the underlying factor to the problem of schoolleaver unemployment was believed to be a product of the existing education system in which children started school at six or so years of age and completed when they were too young to become responsible workers. Some extra years were considered necessary to provide them with opportunities to mature and be exposed to a more functional school curriculum.

There was some justification for restructuring the school system. The primary school segment was of a seven year duration with a concentration on examinable subjects which included English, mathematics and a combined paper in geography, history and civics. A majority of the secondary schools had a strong academic orientation with the exception of 15 technical secondary schools which offered technical courses in conjunction with a number of academic subjects. Some academic secondary schools also had a component of industrial education and agricultural science. Post-school formal technical and vocational training was conducted by the Industrial and Vocational Training Centres and non-governmental institutions. The Directorate of Industrial Training administered and co-ordinated industrial training programmes. There was, however, no provision in the primary curriculum to orientate pupils towards these post-primary options, whether in technical/vocational training or in the labour market.

The Working Party, therefore, recommended a restructuring of primary education from 7 to 8 years. The eight year primary education was to offer numeracy and literacy skills in the first six years and basic education with a practical orientation in the last two years. The latter would include such subjects as agriculture, home science, business education and art and crafts. The four years of secondary education were to include a pre-vocational component consisting of agriculture, industrial education, wood and metal technology and others (ibid).

Although the pronouncement for the new system was made in 1981, it was not until the end of 1984 that a policy statement was issued providing a rationale for the new system. Among the points listed were the following:

Need for a more relevant curriculum:

> The education system hitherto followed by the country did not cater for the greater number of pupils enrolled. There is a need therefore to provide a practical oriented curriculum that will offer a wide range of employment.

Technical and vocational training:

> The 8:4:4 system with its emphasis on technical and vocational education will ensure that the student graduating at every level has some scientific

and practical knowledge that can be utilised for either self-employment, salaried employment or further training (Republic of Kenya, 1984:1).

The stated objectives of the education system thus reflected a vocational bias. Among the objectives of primary education, for example, was "to acquire a suitable basic foundation for the world of work in the context of economic and manpower needs of the nation". Secondary education had the objective of preparing the learner to make a positive contribution to the development of society, choosing with confidence vocational education after school, and acquiring attitudes of national patriotism, self-respect, self-reliance, cooperation, adaptability and a sense of purpose, integrity and self-discipline (ibid).

From this historical overview, it is apparent that considerable efforts have been made to introduce pre-vocational subjects in the formal school system. There has, however, been no definite policy which demands that schools and training institutions develop units of production. Much of what is taking place by way of production is through the initiative of individual institutions. Within the formal school system a small proportion of primary and secondary schools is engaged in productive activities for economic self-sufficiency through sale of products and for inculcating skills in view of pursuing further training and of participating in community life.

The feature of production has been most pronounced in Harambee Institutes of Technology (HITs) and Youth Polytechnics (YPs), the two institutions that were launched by the community in response to the problem of schoolleaver unemployment and the demand for technical training. While the HITs had the objective of providing training for employment for secondary school leavers, the YPs aimed at providing rural primary schoolleavers with informal training in the skills for which there was a demand in the local community. Most of these institutions, being self-supporting, have suffered in varying degrees from chronic shortages of recurrent as well as development funds. Hence they resort to production as a way of generating funds (Loubser, 1983:56-64).

Design and approach of the review

This review, like several others in the Eastern and Southern African region, was an outcome of the EPTA network programme initiated during the meeting at The Hague in February 1985. The reviews were to adopt a framework which focused on EWP in the domains of general education, of training and of production explained by King in Chapter 2.

On the basis of this framework, the main objectives of the state of-the-art review were to:

a. identify different types of the EWP activities;

b. identify, collect and analyze published and unpublished literature on EWP programmes in formal and non-formal institutions as well as production settings;

c. describe different examples of formal and non-formal production/training with production settings within which the integration of education/training with production takes place;

d. identify missing gaps and indicate areas for further research and action.

To meet these objectives, researchers first and foremost carried out library research to map out available literature on EWP. This was followed by a visit to the various government ministries and non-governmental organisations with the objective of obtaining information on departments, institutions and other organisations which offered programmes that attempted to combine education with production. Through these visits, efforts were also made to obtain policy statements by the ministries and non-governmental institutions in the area of EWP.

The second part of the investigation involved visiting a sample of formal and non-formal institutions in a number of provinces to obtain information on activities relating to EWP. These included primary and secondary schools, Youth Polytechnics (YPs) and Harambee Institutes of Technology (HITs). A number of production settings around Nairobi were also visited. Information was collected through interviews.

The review started on the premise that attempts to integrate education with production in Kenya were a recent phenomenon and have not been articulated as an educational policy. It was therefore necessary to visit schools and training institutions to assess these activities.

Education, training and production in the formal school system

One major objective of the 8-4-4 education system, as we have already discussed, was to infuse pre-vocational subjects in the primary and secondary school curriculum. At the primary school level pre-vocational subjects included art and crafts, agriculture, and home science although business education was later added to the list.

The main aim for the art and crafts as stated in the syllabus is to provide a sound foundation for every child whether or not he/she becomes an artist or craftsman. It has also the objective of encouraging a primary schoolleaver to face (working) life with greater confidence and to acquire skills for self-employment (Kenya Ministry of Education, 1986:37).

The teaching of agriculture is expected to fulfil, among others, the objective of demonstrating through practical experiences that agriculture is a profitable and

honourable occupation. In addition it should assist pupils in acquiring practical agricultural knowledge and skills which are relevant and useful to their lives, and to develop self-reliance, resourcefulness, problem solving ability and an occupational outlook in agriculture (ibid:5).

Home science includes food and nutrition, health education, clothing and textiles and home management. It has the objective of enabling the learners to develop and use appropriate skills and techniques for solving problems relating to food choice, utilisation, preservation, and storage in their community. It also aims at enabling pupils to acquire and apply relevant knowledge, attitudes and skills necessary for the proper care of the home and family, and to use relevant knowledge and skills in choosing and using fabric, tools and equipment for clothing and construction (ibid:157).

The teaching of these subjects is expected to be practically-oriented. In art and crafts, for example, pupils are supposed to produce useful and functional articles like posters, greeting cards, baskets, table mats, earrings, combs, stools, cane chairs, coat hangers, bricks and others. Practical activities in the teaching of agriculture cover the growing of crops such as vegetables and flowers for use and sale, the rearing of domestic animals, poultry and bee-keeping, the making of farm tools and the caring for the soil and environment. In home science pupils are expected to make articles such as pyjamas, tablecloths, blouses, shirts, children's garments and food (ibid).

As stipulated in the syllabus, primary school practice is expected to focus on elements of education (E1), training (T2) and to some extent production (P1)[1]. Studies on the teaching of pre-vocational subjects in primary education have, however, established that T1 and P1 activities experience serious difficulties due to a lack of teaching facilities which include workshops, equipment and tools as well as the inadequacy of well trained teachers in these subjects (e.g. Kaime, 1989).

For purposes of generating funds a small number of primary schools engage in productive activities. Some articles made by pupils in the teaching of art and crafts are locally sold. In many cases such commodities are not of a high quality as those found in the local market. In agriculture some crops are grown in school gardens or plots for demonstration purposes and for teachers' food.

In some regions schools with large acreages of land engage in commercial agricultural production. The activities which were identified include the growing of food and cash crops, the keeping of livestock and the production of milk. Production is often carried out by pupils under teachers' supervision. In some schools parents work with pupils especially in activities which are heavy or involve high risks. Certain productive activities necessitate the hiring of labour. This is particularly the case with the keeping of cattle, pigs, sheep and poultry.

The selling of the school products is carried out by selected school personnel in collaboration with the headmaster and members of the school committee. On the whole production is on a small scale with little capital investment.

Studies which have so far been carried out on efforts to vocationalise the primary school curriculum have pointed to the lack of basic facilities such as workshops and tools as a serious drawback to the teaching of pre-vocational subjects. Through an aggressive mobilisation of funds at the time when the 8-4-4 education system was launched in 1985 communities were able to complete the building of standard eight classrooms. However, rooms for specific subjects have rarely been built. In places where they have been completed they are not adequately equipped (ibid).

A second major draw back in the teaching of pre-vocational subjects has been that most teachers handling the subjects in the schools are generalists and are therefore ill-equipped professionally to pass on technical knowledge and skills to their pupils. The teacher education programmes they were exposed to were not specifically geared to the teaching of pre-vocational subjects (ibid).

What has been lacking are detailed studies of primary schools that have successful production programmes and activities. Not much is known as to why such programmes were launched, the production process developed and the problems faced. This is particularly important since, as we have already pointed out, production has not been embraced at the policy level.

At the secondary school level, the government in the early seventies responded to the problem of secondary schoolleaver unemployment by upgrading and expanding technical schools. The existing secondary vocational schools offered academic training in the first two years and craft training in the third year. Other schools, known as 'secondary trade schools', offered a three-year pre-craft training. These programmes were not successful because students entering the employment market at the end of Form 3 were encountering serious difficulties in getting jobs. At that time Form 4 schooling was in a high demand and preference was given to graduates from the academic secondary schools with their better standards of mathematics and science. This led to the reassessment of the programme with a view of providing it with a status equivalent to that of the academic schools.

From 1972 technical schools provided a full four-year course, and pupils sat for the then East-African Certificate of Education. The curriculum was structured to provide a sound academic course together with either the basic engineering or basic building subjects (Balsdon, 1979:12). The number of technical secondary schools was increased from six to fifteen. The expansion was carried out with technical assistance from the Swedish International Development Authority (SIDA).

In the development of technical secondary schools, the emphasis on technical training was geared not only to equipping students with the necessary skills required in the labour market but also to making them appreciate the importance and function of technology. However, studies which were carried out on student attitudes revealed a strong desire among students to pursue post-secondary

education and obtain white collar employment (e.g. Sifuna, 1982:71). A study sponsored by the Swedish International Development Authority in technical secondary schools before their later conversion into technical training institutes noted that only a minority of school leavers from these schools succeeded in gaining entry into apprenticeships. The great majority either went on to further education of an academic kind (Form 5) or looked for employment without further training. It was concluded that technical secondary education did not serve as pre-vocational education for further vocational training for most students (Lauglo and Narman, 1987:240). It was for these reasons that the government changed them into training institutes.

A second line of secondary school vocationalisation was the introduction of industrial education. In 1968 some schools which had been offering a 'wood and metal' subject in the Cambridge Overseas School Certificate had their programme reorganised to embrace industrial arts whose objectives, among other things, were to "develop an insight and understanding of industry and its place in society" and to "develop students talents in industrial technical fields" (Kenya Ministry of Education, 1968:2). With SIDA assistance, the programme was expanded to 35 government-maintained secondary schools. Out of this number 25 would offer wood and metal technology and ten would provide power mechanics and electrical technology. In the 8-4-4 education system all secondary schools in the country have to offer applied education together with academic education. Applied education includes agriculture, industrial education, wood and metal technology, power mechanics, electrical technology, business education, accounts, commerce typing and office practice, home science, clothing and textiles, food and nutrition, art and music (Kenya Ministry of Education, 1984:4).

Studies carried out in the field of industrial education seem to indicate that 'production' is not an aspect of the teaching process. It is stated that the teaching of each subject includes theory and practical work. Students are not engaged in production as such but they are expected to 'manufacture' various artefacts and in so doing gain the skills associated with each area of study. Such an approach is intended to offer ideal opportunities for students to develop powers of creativity, initiative and problem solving, which is the overall goal in industrial education (Cumming, 1985:2).

Industrial education is perceived by both teachers and students as a preparation for work or for further training. In each of the 35 government-maintained secondary schools referred to above, the industrial subject is usually compulsory in Forms 1 and 2. In Forms 3 and 4 it is part of the Kenya Certificate of Secondary Education (KCE). One study established that students devote about six weekly periods to industrial education, a relatively small proportion of their total weekly timetable. It was also concluded that skills acquired through the learning of industrial education do not seem to be of much use after school as a means of a livelihood or further training (Lauglo and Narman, 1987:36).

Agriculture was one of the pre-vocational subjects started on a pilot basis at Chavakali Secondary School in Western Kenya in 1960. With the assistance of USAID the programme was extended to six schools in 1964. In 1967 the number of schools was increased to thirteen and in 1975 to 94. These schools offer academic programmes alongside a course known as 'agricultural principles and practice'. The course is intended to stimulate interest in and create an awareness of the existing problems and opportunities in agriculture, to bring about attitude change by demonstrating that farming can be a dignified occupation that is both profitable and honourable, to teach basic principles and skills in agriculture and to provide a background for advanced studies in the subject (Kenya Ministry of Education, 1975).

More detailed researches have as yet to be undertaken to evaluate the effectiveness of agricultural programmes in schools and what happens to graduates who take the agricultural principles and practice subject in the KCE examination. What seems certain, however, is that a small number of schools engage in agricultural activities for purposes of self-sufficiency, namely, to produce food for their own consumption. This applies particularly to boarding schools.

A study by Sheffield (1976) makes important conclusions as regards the position of agriculture in secondary schools. Here it is noted that although agriculture is offered in nearly one quarter of the government-maintained schools, its place within the secondary curriculum is weaker than overall statistics seemed to suggest. Although students are compelled to take the subject in Form 1 and 2 in schools where it is offered, it is optional in Forms 3 and 4 in many schools. The number of students taking agriculture in the KCE was found to be only five percent of the total. Among the various reasons for the relatively low status of agriculture in the schools, the same study notes, is the pressure on students and teachers to do well in academic subjects required for further education. Although agriculture is counted as a science subject in the examination, the fact that it is not offered in Forms 5 and 6 makes it less attractive than other science subjects (Sheffield, op.cit.:5). This view was supported by the report of the National Committee on Educational Objectives and Policies (Republic of Kenya, 1976:67).

It also appears that students do not see the agricultural course as preparing them for a full-time career as farmers. For example, the original course at Chavakali had been called 'vocational agriculture', in the expectation that many students would go into farming. It is noted that in view of the greater opportunities in the modern sector it was hardly surprising that a follow-up of Chavakali students revealed that none were full-time farmers (Sheffield, 1976:7).

A survey of selected secondary schools offering agriculture revealed a considerable variation in the agricultural programme in schools. Despite the emphasis on expensive equipment in the USAID/Virginia contract as well as in IDA loan requirements, equipment was frequently in serious disrepair. Besides, it never seemed to be an important part of the teaching process. The survey

emphasised that in spite of the enormous differences in costs between schools having workshops and schools without them, there was apparently little difference in examination results. Land, on the other hand, was frequently the most important variable in determining results The differences in both quality and quantity of land available for school agricultural programmes were dramatic. Among the schools in the survey this size varied from more than 80 acres of fertile land (a few miles outside Nakuru town) to one or two acres (on the outskirts of Nairobi). Most of the land was allocated to the school farm leaving insufficient land for individual student plots or farms. Students did not look forward to full-time careers as farmers, but expected to do part-time agricultural work and others wished to pursue careers in agriculture after further training (Sheffield, op. cit.:7-8).

From available research it appears that policies aimed at vocationalising the school system have not achieved the desired objectives. The economic usefulness of pre-vocational subjects needs to be assessed in the light of the realistic opportunities that students have after school for work or further training. This is particularly important since these subjects are expensive and it is more demanding to integrate them in the formal school structure. Equally important is the articulation of their realistic justification on pedagogic grounds rather than their relevance for employment or self-employment.

Education, training and production in training settings

The technical training field in Kenya is very extensive. It involves formal, informal and non-formal elements at a variety of levels. Organised training has come to be a responsibility shared among many agencies, including private companies, non-governmental organisations, and the government. There are many technical training institutions which are run by various government ministries and departments.

Historically, most training has been informal, acquired on-the-job through an informal apprenticeship system. The 1972 manpower survey, for example, found out that 80 per cent of skilled workers had no formal education beyond the primary school and very little institutionalised vocational training (Kenya CBS, 1972:39). Even today most technical training is on an inservice rather than a pre-service basis, and at the lower levels most of it still appears to be informal in spite of the rapid development of technical training institutions.

There are different levels of technical training with different entry requirements. These include the semi-craft level, craft and technician. Of all the qualifications only the Government Trade Test is not tied to a formal educational certificate as an entry requirement to the training programme. With the exception of the semi-craft level which is mainly post-primary, a secondary school

certificate is the minimum prerequisite for entry into the formal technical training system.

Technician training is available almost exclusively on sponsorship basis at the polytechnics. The secondary school leaver has first to find an employer who is willing to sponsor him or her for further training. This is possible either by enroling in one of the polytechnics or in the National Technician Apprenticeship Scheme under which the formal training will take place initially at one of the National Industrial Training Centres (NITCs) and eventually finish at one of the polytechnics.

In both cases the training will consist of sandwich courses, but at the polytechnics day-release courses may also be available. At the polytechnics the full technician certificate will be either the Ordinary Diploma or the Full Technician Certificate (FTC), both requiring three years of training.

Those who wish to acquire crafts skills normally register with the Directorate of Industrial Training in search of employment and sponsorship for further training or apply for admission at one of the HITs offering the course in which they are interested, if they can afford fees. If employment and sponsorship are secured, the trainee would then enter one of the National Training Centres under the National Craft Apprenticeship Scheme and would follow sandwich type of courses involving both training at the centre and on-the-job. At the HITs the training is mostly institutional, but in some cases a one year industrial attachment is built into the programme. The former technical secondary schools, now known as Technical Training Institutes (TTI's) also offer craft courses which last 3 to 4 years.

In the 8:4:4 system of education, technical secondary schools were converted into Technical Training Institutes (TTI's). The restructuring was intended to increase the number of training opportunities for school leavers. They mounted diploma programmes to provide for more training for the middle level technical cadres. Secondary school leavers and holders of craftsman's certificate at the junior level are eligible for entry (Lauglo, 1986:36).

The semi-craft institutions catering for primary school leavers prepare their trainees for the Government Trade Grade III. The trade test provides an open access system of certification, available to anyone who can afford fees, which is minimal regardless of level of education or formal training. The tests are graded from III to I and are tied to wage levels and entry qualifications for certain occupations (Loubser, 1983:45).

The three national polytechnics are government financed. The Kenya Polytechnic in Nairobi dates from 1961 and Mombasa Polytechnic evolved from the former Muslim Technical Institute in 1974. The Eldoret Polytechnic is a recent development. The polytechnics are the only institutions in the country that train at the technician level in the main branches of engineering. A majority of the students are sponsored by industry, government or parastatals in a variety of training programmes pursued through sandwich, day release, full-time and night

courses. In addition to engineering subjects (mechanical, electrical and civil), the polytechnics offer programmes in science, business studies, printing, institutional management and library science.

Staffing has remained a perennial problem at the polytechnics, although the situation has shown some improvement in recent years. There are high turnover rates and qualifications have been rated to be low in some of the polytechnics. The British Overseas Development Agency (ODA), which for long has assisted the Kenya and Mombasa Polytechnics, commissioned an evaluation of the two institutions. Although the evaluation on the whole was positive as regards the contribution of these institutions, it was stated that 'the main criticism voiced by employers was that they had become too academic and the technicians were lacking basic craft skills' (reported in Loubser, 1983:51).

Many government training institutes focus more on the training component rather than production. Actually there is no explicit policy to push them in that direction. Moreover there is no economic compulsion either as they benefit from sufficient recurrent and development funds from the government and some donor agencies. Only the National Youth Service (NYS) emphasises production as part of its training. The service which was started in 1964 had as its main purpose to train people in service of the nation and to undertake economic projects of national importance. Following several months of orientation training, recruits are divided into companies and assigned to work in units to take part in development projects, such as road and dam building, bush clearing, farming and others. At the end of the first year, they return to the training centres for further general training and undergo a battery of tests to determine their aptitudes for further training.

The NYS has had substantial bi-lateral assistance from The Netherlands, Germany, Denmark, Japan and the United States. A cost-benefit analysis of the programme (NYS) by the International Labour Organisation calculated a positive cost-benefit ratio of 1.2 if foreign aid was taken into account, and 2.1 if it was not (ibid:69).

If production does not feature in government-sponsored institutions apart from the NYS, then it does feature prominently in institutions sponsored by non-governmental organisations like the churches and institutions founded on *harambee* (self-help) basis as in the case of the HITs and YPs. The Christian Industrial Training Centres (CITCs), the YMCA, the YWCA and the Undugu Society of Kenya, for example, offer courses in such areas as carpentry, masonry, welding, plumbing, arts, crafts and others to underprivileged boys and girls to train them for self-employment or wage employment. In some of the programmes shops have been opened in major towns to sell the items which students produce during their training.

The HITs represent a community response to the demand for post-secondary education and training opportunities. Harambee fund raising efforts started in 1971 for some of the planned training institutes and by 1973 there were 17 of them at various stages of development. They offer three year programmes to secondary school leavers which in the case of technical subjects includes a one-year industrial attachment.

It is estimated that in the mid 1980s recurrent costs of HITs amounted to between Kshs. 15,000 to 20,000 per student per year. Fees ranged from Kshs. 2000 to 4000 and the government provided grants-in-aids to the tune of Kshs. 2800 per student (Yambo, 1986). Only a few institutes have a regular income from *harambee* efforts and in most cases the initial fund raising for the establishment of the institute was the last of such effort. It is therefore not difficult to imagine that most of the institutes experience serious problems in raising operational and development funds even from the most well-off communities, despite government and donor support. Although several of the HITs have fairly large farms, their income earning capacity in support of recurrent expenses is limited.

It is difficult to generalise about all the HITs since they constitute a heterogenous range of institutions. What they, however, all have in common is that they were all started on a harambee basis and consequently in varying degrees they all suffer from chronic shortages of recurrent as well as development funds. Hence plans have been partially implemented, a handful of courses are offered, teachers are in short supply and enrolments are quite limited. The result has been increasing dependence on government and donors, and an increasing resort to production. The government and donor assistance is mainly used for payment of teachers salaries.

In 1975 all HITs, each of which had been planned in isolation from others, were all placed under the management of the Ministry of Education. This enabled a support unit to be established with assistance from UNESCO for coordination of planning and curriculum development.

The Youth Polytechnics (YPs), formerly Village Polytechnics (VPs), represented a community response to the problem of primary school leaver unemployment. They originated in 1966 through the initiative of the National Christian Council of Kenya (NCCK). The original idea was to provide rural primary school leavers with informal training in skills for which there was a demand. Trainees were to be offered courses in the areas of agriculture, masonry, carpentry, home economics and others.

The VP 'movement' spread so rapidly that by 1971 there were 69 polytechnics. By 1982 there were over 286 YPs with a total enrolment of 29,500 and 1600 instructors. Evaluation studies which have been carried out have concluded that YPs vary greatly in quality and adequacy. In most of them facilities have been built by the YPs themselves and qualified instructors are

generally lacking. They also experience problems in obtaining funds for recurrent costs as well as development. Most alarming however, has been their tendency to formalise. Many aim at their trainees passing the Government Trade Test Grade III on completion of the two year course. Some have started dormitories and are adopting other trappings of the formal school system such as uniforms. Few offer training in agriculture and the idea of forming a work group of self-employed leavers does not seem to have worked out on a significant scale (Court, 1980:156).

YPs have also received much assistance from the donor community. Apart from the NCCK and other local non-governmental organisations, international NGOs such as Action Aid, Care-Kenya and Foster Parents Plan International have been supportive. International agencies have included UNICEF and ILO.

Government and donor assistance has not eliminated HITs and YPs financial problems, hence their efforts to turn to production as a means of generating more funds. We now focus on production programmes in HITs to illustrate the kind of production that is undertaken in these institutions. What is discussed here is however based mainly on information provided through interviews with institutional leaders and instructors. Therefore its objectivity is yet to be adequately established.

HITs appear to be engaged in two major types of training with production. First, there are those institutions which produce through training activities where instructors produce goods as they give demonstrations and students produce as they carry out practical training, applying their theoretical knowledge. In some cases the instructors and the final year students engage in specific productive activities with the objective of both training and production of goods. In this kind of institutions the instructors and students are the main producers with little help from other personnel. Such programmes may be called production through training. The administration is however responsible for sale of the products. Money accruing from such sales is utilised in further production and the general running of the institution.

In the second type there are institutions with special units of production. Here, in addition to production through training programmes, the institutional management sets up a separate unit whose main goal is production. This unit has special personnel which operates on a commercial basis and is expected to make a profit. It may also play the role of a model firm where students practice the various skills. Such programmes may be referred to as production through special units.

Some institutes operate the two forms of production. Institutes with clearly defined production units are generally divided into two sections. There is the Training Division and Production Unit or Division. Each division has its own head namely: the Training Manager, and in some institutes he/she may be referred to as Director. The manager or director is responsible to the Principal

who is the overall head of the institute. The division or unit is intended to promote effective administration by ensuring that both training and production are properly carried out (Omulando, 1984:8). In some institutes, the production unit or division does not engage in any form of training except production. Such units often attract shareholders from outside the institute.

Institutes which use their production for training purposes, attempt to expose students to real work situations through attachment and give them opportunity to practice their skills. The units also provide part time or vocational employment to students. Whenever there is a high demand for goods students provide the additional manpower necessary to cope with the situation. Funds generated by the units are used to subsidise the running of the institutes. They help in easing financial constraints of the institutes like the training and boarding costs. Students as well as instructors and other personnel benefit directly and indirectly from the productive activities of the production units.

Examples of production units include the Western College of Arts and Applied Science (WECO) which manufactures hand pumps, Kiambu Institute of Technology which makes high quality furniture; and Kirinyaga Technical Institute which is famous for garment making. It was generally difficult to obtain accurate information regarding sources of funding for production units for most of the institutions. But from the Ministry of Education, which was originally coordinating HITs programmes, it is clear that there has been substantial donor support for production in Kiambu, the textile unit in Kirinyaga, an engineering production unit in WECO and Murang'a, and an agricultural unit in the Rift Valley Institute (Churu, 1987). Estimated income from the production units in the various HITs ranged from Kshs. 50,000 to over 500,000 per year.

Although production units have become an important component of the HITs, they have emerged as an economic response to financial problems facing the institutes and as a means to address difficulties related to industrial attachment. All vocational courses in HITs have industrial attachment as part of their curricular requirement. The attachment is supposed to expose students to the real world of work (industry), to challenge them to apply skills to a work situation and to enable them understand and appreciate life in industry and industrial psychology.

Many HITs however experience serious problems in securing industrial attachments for their trainees. Some industries, for reasons not stated overtly, are unwilling to accept trainee students. Others impose conditions that may make it difficult for institutions and their apprentices. They may refuse to pay subsistence allowances in spite of the fact that trainees are involved in productive work for the company. It is also difficult for the institutions and industries to determine the appropriate time for student attachment and quite often it is expensive for trainees to meet their own transport costs. Finally it has been difficult to determine who should identify students in cases of accidents (Ligaga, 1987).

For these reasons HITs have had to set up production units for commercial and training purposes. The following reasons, which led to the establishment of the production unit at WECO, apply to many other HITs as well:

a. To generate revenue for recurrent expenditure, especially training costs, as the institutes have no guaranteed sources of income.

b. To fulfil the institute's goal: to be a centre of research and development in technology, especially in the applied sciences.

c. In case of WECO, the Production Unit has the added use of serving as an example of a real industry, where students in training are placed for industrial attachment (ibid).

Production, as it has already been pointed out, varies from one institute to another. This means that student participation in production also varies considerably. Yambo (1986:75) asserts that in vocational institutions where there is production, it is carried out at the expense of training. It is estimated that in some institutes as much as 60 per cent of the time is spent on production. In others, training is carried out in the mornings and production in the afternoons. Still in others there are special times outside formal training hours for production or at the weekends. Students are involved in making articles as part of their practical work. They generally do not participate in the designing and marketing of the products.

The relationship between such training and production is that they tend to compliment each other. Theory is linked with practice in the same institutional setting, not as in the case of industrial attachment. The HITs with production units believe that they are attempting to bridge the gap between theory and practice that tends to characterise many training institutions. Some students also secure vocational employment which provides them with income to pay fees and even to purchase tools.

Some institutes now boast of real success with their production units. WECO, for instance, is well known for the manufacture of hand pumps for deep and shallow water wells in the Western region and other parts of Kenya. It has also undertaken other projects which include the production of slaughter house equipment for the Ministry of Local Government and the maintenance of factory machines for the West Kenya Sugar Company (Ligaga, 1987:4). By providing services such as these, WECO and other HITs meet the expectations of the communities that assisted in establishing them. Production units now generate funds that go a long way to alleviate problems of recurrent costs (ibid).

The cost-effectiveness of production units in HITs training programmes still has to be studied and determined. As was already pointed out, much of the information discussed here is based on interviews with the institutional manage-

ment and the instructors. More research needs to be carried out to assess their contribution in terms of training and financial costs. If their importance is established as stated by our informants, they likely to set a model for government training institutions which are beginning to face a serious financial crisis with the worsening economic situation in the country

Education, training and production in production setting

As has been pointed out in the previous section an important feature of training for productive enterprises is its informal nature of on-the-job training. The private sector in particular tends to rely more heavily on informal training than the public sector. Such training in the private sector is generally commercial or company specific.

Since independence the government's main objective has been to introduce policies that can induce industries to actively participate in formal training. These policies have included the imposition of a training levy on all enterprises within specified industries. This can provide a fund from which enterprises can be reimbursed for the costs of sponsoring apprentices or other types of trainees (Bennel, 1984:37). In 1971 the Directorate of Industrial Training (DIT) was established under the Industrial Training Act to administer and coordinate industrial training. Government intervention through such measures has however not significantly stimulated the participation of industries in formal training (ibid).

The reason for the apparent failure of enterprises to participate in formal training is that skills requirements of the industrial sector in Kenya as elsewhere in less developed countries are generally very limited. It has been observed that industrial production in many of Kenya's larger enterprises involves processing of the assembly line type (e.g. manufacture of tins and car assembly). In this type of production process, technology and the organisation of work tends to have little impact on skill development. The majority of workers either carry out highly fragmented manual work tasks or operate special purpose equipment which is of a repetitive nature.

It is emphasised that this kind of industrial work actually underdevelops skills and requires very little general education and technical training. Training on-the-job of a very short duration is generally considered sufficient for the large group of semi-skilled craftsmen (Mikkelsen, 1986:35). Productive enterprises therefore rely primarily on in-plant job training of skilled workers to perform specific tasks rather than the acquisition and utilisation of the broad range of skills of craftsmen. This type of training is also occupationally linked and production oriented.

Another important type of training arrangement in the production setting is informal sector training. This type of training is not institutionalised. It is also generally not sponsored and the number of those involved and methods of training are not widely known. Surveys which have been carried out on the sector,

however, revealed important characteristics of trainees and methods of training. It is widely acknowledged that a majority of trainees in the sector have had some formal schooling and a large percentage are school drop-outs (King, 1977:24).

As regards methods of training, the predominant mode of training in the informal sector is through employment as casual labourer and later as skilled men/women. Skills are learnt exclusively on-the-job. Employers are not particularly interested in such aspects as the level of education, trade test grades or salary linked to formal qualifications. Related to casual labour, *kibarua*, there is a process whereby an individual attaches himself to a skilled person in a type of informal apprenticeship. In this type of training, trainees pay their masters to accept them, and in some cases they expect some form of maintenance or subsistence in return. A number of studies show that trainees do not generally choose trainers because of geographical proximity. They are influenced by their friends and relatives. There are however, cases in which trainers exploit their trainees in supplying cheap labour (Aleke-Dondo, 1986:13; see also Ndua and Ngethe, 1984).

The length of training varies from one trade to another and the ability of the trainers and trainees. Apprenticeship can be for a few months in some of the tinsmith operations and slightly over a year in many of the automotive-related trades. In some operations, the bright student would be expected to take less than a year and a slower student up to a year or more. In many cases, courses are now geared towards government trade tests. An important feature of the system is the determination of the trainees to move as rapidly as possible in establishing their own workshops or enterprises. Very often the brightest trainees are absorbed within a short period into a cooperative arrangement with their former masters (Aleke-Dondo, 1986:14).

Conclusion

The proceeding sections highlight the state of EWP programmes in the formal school system, training institutions and in production settings. What seems to emerge from the review is that since EWP is not a wide-spread practice in Kenya, there has been no serious investigation into the status of production programmes where it has been adopted, for example in some primary and secondary schools as well as in training institutions. For this reason it has been difficult in the review to provide accurate information on the nature, achievements, problems and their impact on the society at large.

Since the production phenomenon is however, beginning to gain popularity, there is an urgent need for research in all aspects of education, training and production. Empirical research would also be useful in providing guidance for future developments of these programmes. Research should focus on aspects such as the relationship between production and training, financing and outcomes of the production units and their impact on participants and society at large.

A national workshop, which discussed the review in November 1988, while questioning the lack of a clear cut policy on the EWP in the country noted that there was abundant political good-will to promote such programmes. The adoption of EWP programmes it was emphasized, could subsidise operational costs in schools and training institutions as it was the case in some countries of the East African region. EWP programmes could also reduce unemployment among school leavers if education, training and production were successfully integrated (Sifuna and Shiundu, 1989:58).

The same seminar appreciated the fact that EWP programmes could not easily be introduced in school and training settings without proper planning. There are issues such as the preparation of teachers and instructors for EWP programmes; the integration of production in the school system without neglecting academic subjects and problems regarding cost and time; the trade-off between liberal education and vocational training; the exploitation of students and instructors, and other related ones (ibid).

For future developments in this area some of the major recommendations were as follows:

- there was an urgent need to study the system before making a projection for the future;
- the educational level at which EWP can be introduced should be identified;
- there is a need to establish a 'think-tank' to advise on the notion of EWP;
- linkages should be established between EWP and the communities at large;
- training and production should be harmonised;
- a body should be established to handle EWP which could co-ordinate all institutions involved in executing the concept (ibid:59).

Note

1. The codes refer to the diagram on page 48

Education with Production in Zambia

Patrick Haamujompa

Introduction

Since the attainment of political independence in Zambia in October, 1964, much concern has been expressed over the fact that the formal education system has not been able to prepare the learners with the relevant skills for the world of work

The problem became more pronounced and accentuated when as from the 1970s large numbers of school leavers were unable to find work and drifted to the urban centres where they joined the ranks of the unemployed. This led to the realisation by educationists and politicians that, while going through the formal system of schooling or through the non-formal system, participants should be enabled to develop skills that would facilitate them in obtaining employment or in becoming self-reliant.

In order to find a lasting solution to the problems of unemployment among school leavers, deliberate efforts have been made in Zambia to formulate policies aimed at ensuring that production skills would find a place in the formal system of education. One of the unresolved problems in these endeavours has been that it was not always possible to determine fully how long children should remain in formal education in order to achieve the necessary practical skills for survival.

As will become clear later, in Zambia over the years a number of efforts at both policy level and implementation stage have been made to relate formal education to production. Accordingly, this paper will provide an account of policies to foster programmes dealing with Education with Production (EWP), the types of such programmes, problems experienced so far and what could be expected in the future.

Historical background

Like in many other developing countries in Zambia some forms of Education with Production activities were practised within the formal system before the attainment of independence. These largely consisted of manual work activities carried out by pupils around the school premises or staff quarters. In many schools practical work also became an essential part of instruction in the basics of carpentry, mechanics and agriculture. In the latter the major production activities undertaken were fruit growing, crop and animal production. The activities were regarded as an integral part of the children's upbringing, preparing most of them for an improved life in the surrounding villages.

While most of the skills practised by pupils were of a very elementary nature, more advanced technical and vocational training, like academic secondary education, was very slow in developing. Zambians received on-the-job training as artisans. With African advancement during the 1950s most attention came to be focused on continued academic education as this type of education was evidently the key to success in social and economic life. Indeed it was during the early independence that vocational education appeared to be receiving less attention as evidenced by the closing of most of the Trades Schools which were in existence at the time.

Later, as a result of the boom period in the post-Independence years, there emerged an increased demand for technical and other professional staff. This prompted the new Government to open a new series of Trades Training Institutes and a Technical Teacher Training College so as to train a large number of tradesmen, technicians and technologists and other specialists. These developments led to the approval of the Technical Education and Vocational Training Act by Parliament in 1970. A related outcome was the establishment of the Commission for Technical Education and Vocational Training in the country. In 1972 the Commission for Technical Education and Vocational Training changed its status and became a Department of Technical Education and Vocational Training. This department is still in existence today (in the Ministry of Science, Technology and Vocational Training).

In this emerging formal vocational and technical training system, however, very little actual production took place. In order to enhance their status the minimum qualification to enter the institutions was set at Form 2 level, which at that time only a very small percentage of young people attained. In addition there was an emphasis on theory, while also other academic subjects were added to the curriculum. Though workshop practice was included in the time table, it was pedagogically nor socially considered necessary to extend this to the more systematic production of complete items. The latter was also not imperative for economic reasons as in those days the institutions were well-endowed with funds, both by the Government and by generous donor agencies.

During the 1970s other problems were emerging. Due to international developments as well as poor choices in national economic policy Zambia's economy began to stagnate. Most immediately this affected the ever larger number of pupils coming out of primary schools for whom secondary places could not be provided fast enough to absorb them. In the competition for formal sector jobs they quickly began to loose out against the category of junior secondary leavers whose better academic qualifications made them more attractive to employers as well as to vocational training institutions. Later, during the 1980s, the same process repeated itself with regard to the competition between junior and senior secondary leavers.

Within the Government and education circles these developments heightened awareness of the need to provide practical skills to the pupils in formal educational institutions. It was thought that the excessive emphasis on academic education contributed to young people not finding employment as they would only be satisfied with a wage-earning job and, for that matter, only one that was considered commensurate to their 'academic status'. The (re-)introduction of practical subjects and of production activities was meant to counteract these attitudes, widen the range of 'employable' skills and make schoolleavers more amenable to menial jobs if not to the prospect of small-scale self-employment.

These considerations played an important role in the Educational Reform exercise that was conducted at national level involving all segments of the population during 1974-1977 (Republic of Zambia, 1977). The exercise arose from a wide recognition of the social, economic and pedagogical crisis in which general education had come to find itself. This included the problems of irrelevant curricula at all levels of education. The ultimate policy document that resulted from this process stressed the place of production activities in the education system as follows:

> "Production activities in educational institutions have educational value. Through production, students can apply knowledge, appreciate the importance of working with their brains as well as their hands, develop the spirit of self-reliance and learn how to contribute to the nation's production activities. This important aspect of education, which is part of a child's up-bringing, has not been emphasized in the part." (ibid:6).

The policy statement on education with production went on to state that

> "In future, production and service to the school community and the nation will be among the main features of education to be developed and emphasized in curriculum organisation." (ibid).

Much of the impetus for Education with Production in Zambia derived from the President's directive in 1975 promulgating that all educational institutions should become production units. By this decree nation-wide implementation of EWP had to commence even prior to further detailed discussions of such a policy in the context of the Educational Reform debate. Schools were asked to use any resources available to start up productive activities, which were assumed to be mainly in the agricultural sphere. Thus in pursuance of the policy, a number of programmes have been established in educational institutions the purpose of which is to offer specific skills to pupils and adults that would enable them to be employed or be self-reliant.

Another development associated with Education with Production was the establishment and expansion of adult education. In 1965 the first Adult Education Centre was built and several more followed thereafter. There are now called Centres for Continuing Education under the Department of Continuing Education in the Ministry of Education. These 'schools' offer vocational courses alongside continued academic education. Production activities are also a central feature.

Design and approach of the review

Given the brief historical background above, the main objectives of the state of-the-art review were to:

a. identify different types of the EWP activities in Zambia;

b. identify, collect and analyze published and unpublished literature on EWP programmes in formal and non-formal institutions as well as in production settings;

c. describe different examples of formal and non-formal education/training with production settings within which the integration of education/training with production takes place;

d. examine linkages between general learning and productive activities in the educational institutions;

e. identify types of technology being used and their impact on production;

f. examine EWP impact or outcomes;

g. identify missing gaps in the knowledge about EWP and point out areas for further research and practical action.

In orde to accomplish the objectives of the study, researchers visited the headquarters of various Government Ministries and other non-government organisations in Lusaka with the objective of obtaining accurate information on departments, institutions and other organisations running EWP programmes where skills were taught in both formal and non-formal settings. Visits were also made to some agencies providing financial aid in order to acquire knowledge of level assistance to various production-oriented activities. A second objective for undertaking visits of various institutions was to obtain policy statements on Education with Production in Zambia.

The second part of the investigation involved sampling randomly institutions in each of the nine provinces of Zambia for data collection according to a matrix

developed for the purpose. Much of the information was collected through interviews.

One assumption held by researchers was that several studies of production activities had been conducted by researchers whose work was accessible. Much of this literature was consulted. There was need to ascertain the conceptual clarity among the informants regarding their activities. In general the policy of infusing production activities into educational programmes was assumed to be a national practice which only differed in degree from one institution to the other.

Education, training and production in the formal school system

Although the Educational Reforms document was published in October 1977 it took quite sometime before the new structure of the education was implemented. During most of the 1970s the formal system of education consisted of 7 years of primary, 3 years of junior secondary and 2 years of senior secondary education.

In 1982 a new structure was adopted which included 7 years of primary education, 2 years of junior secondary and 3 years of senior secondary education. This change brought about modifications in the structure of the curriculum.

At the primary level significant developments have taken place in the concept of Education with Production in Zambia. They include the diversification of practical activities in the curriculum and their gradual linkage to school-based productive work.

In 1974 the Practical Subjects Project was established with support from FINNIDA. This has enabled many Upper Primary Schools to receive tool sets and material support for the construction of simple workshops. The subject was also established in Teacher Training Colleges so that a new curriculum for teacher education and training could be introduced.

The amount of time spent on practical subjects and production work varied between Lower Primary and Upper Primary Schools. This was largely due to differences in ages between pupils of the two groups. Because of the need to handle this part of the curriculum properly handbooks for teachers were also prepared.

At the junior secondary level (Grades 8-9) pupils have been expected to choose one subject from the practical subjects group. This includes Industrial Arts, Agricultural Science, commercial subjects and Home Economics. The Industrial Arts include Woodwork, Metalwork, Technical Drawing or (sometimes) Building or Leatherwork. Subjects included in commercial subjects are Office Practice, Typing and Bookkeeping. Usually the offering of such subjects depends on the available facilities in the school. Production work at junior secondary level is given 3 hours per week.

When the offerings at the senior secondary level (Grades 10-12) are considered one finds that more subjects are available depending on the staffing situation in a given school. Among the technical and practical subjects commonly found are Food and Nutrition, General Housecraft, Needlework and Dressmaking, Woodwork, Metalwork Engineering, Geometrical and Building Drawing and Geometrical and Mechanical Drawing. Commercial subjects on the other hand include Commerce, Economics, Principles of Accounts, Shorthand and Typing.

According to the report the then Ministry of General Education and Culture given at the National Seminar on Education with Production in November, 1987, production work is claimed to have been accepted as an integral part of the school curriculum (Report of the National Seminar on Education with Production, 1988). Educationally the greatest merit of practical subjects is that they contribute to making the curriculum more balanced and relevant to the Zambian situation in general and to the future life situation of a good many pupils in particular. It is further said that practical subjects introduce an element of practical application so that learners can actively apply the knowledge they have acquired in the classrooms. It is also hoped that the diversity of practical subjects introduces a range of skills which schools and their communities could exploit.

The above objectives should not be taken for granted. Researchers who have done some work in this area in Zambia have noted certain particularities. In his study of Production Units in Zambia Shanks (1983) found that in many (secondary) schools the objectives cited for having production activities included the following: first, to achieve skills training; second, to prepare pupils vocationally; third, to provide the best environment for human development; and fourthly, to achieve self-sufficiency.

It has also been generally assumed that the outcomes from such programmes would include a change in pupils' negative attitudes toward manual work. The latter was considered one of the main problems preventing youngsters from utilizing opportunities for productive and gainful work in the economy. One has to observe that in the formal education institutions it is difficult to accept fully that the pupils receive meaningful training as much of what they are involved in is academic work. Moreover, there are rare occasions when any such skills imparted would enable the schoolleaver to be self-sufficient.

However, it may be true that as far as production goes, most primary and secondary schools engage in agricultural activities such as growing of vegetables, bananas, maize, depending on the location of the school. Schools in urban settings do not have as much land and so their main production activities relate to what they can do in the environment and what the local communities engage in as a source of livelihood.

The Self-Help Action Plan for Education

Since 1987 many problems in the schools outlined above have been tackled through the Self-Help Action Plan for Education (SHAPE). SHAPE, which has been supported mainly by Swedish SIDA, was designed as a programme of support to provide a variety of inputs for the improvement of quality and relevance of education. The emphasis has been on primary education, although also secondary schools have benefitted. Its starting points were: that productive activities had become an ordinary, though deficient, part of school life; that in this time of economic crisis they helped to generate supplementary funds to cover essential educational costs of the schools; that if well designed and implemented they had a good potential to broaden the variety of basic skills developed by the pupils; and that with greater initiative in the hands of teachers and parents such activities could become more interesting and more meaningful in the light of local needs and circumstances (cf. Mbulwe and Chelu, 1994).

Under the programme teachers, inspectors, education officers and parents have been encouraged to organise themselves at different levels of the education system and undertake self-initiated activities for the professional development of teachers, for the improvement of teaching and learning in the classroom, and for the enhancement of the relevance of education. The latter was tackled through efforts to improve the nature, scope, and methods of involving pupils in productive work related to agriculture and to subjects such as industrial arts and home economics. SHAPE assisted by developing guidelines for the improvement of planning and implementation of productive activities, by organising a variety of in-service training for all those involved in school production, by helping to establish linkages with other government departments, private agencies and local technical expertise, and by financing material inputs for small-scale production projects.

SHAPE has been unique in that it linked improvement of production directly to other measures for enhancing the quality of education. This made it possible for production to benefit directly from a wider variety of measures related to the professional development of teachers, while in turn school production started generating more funds that could sustain local self-help activities of teachers and schools (Hoppers, 1989).

With the help of the programme a national infra-structure was created of production coordinators at different levels, specializing in agriculture, industrial arts or home economics, backed up by clear policy guidelines on the nature and role of productive work in education. This structure was directly linked up with a broader structure of educational (SHAPE) committees established at all levels. Through this structure training, guidance and material support was provided to the schools on the basis of local initiatives and plans.

Thus far the programme has resulted in larger numbers of schools becoming involved in meaningful productive activities and in a widening of the variety and

scope of such activities. There is also evidence of greater interest among teachers, pupils and parents in such activities, which appears to have been stimulated by factors like increased local responsibility, more efforts at joint planning, enhanced self-confidence, and a greater visibility of benefits to the quality of school life. For teachers, in addition, it became clear that engaging in practical subjects and production provided experiences which they could profitably apply also at home to improve their own life situation. To what extent such productive activities also contribute to learning outcomes in other subjects, to a greater variety of practical skills, and later also to better life chances in the community is not yet clear and still needs to be ascertained through research work.

Education, training and production in training settings

The manner in which the survey was conducted was such that a variety of institutions were visited. The Educational Reform policy has very much encouraged the further development of vocational training programmes for out-of-school youths. Practical skills should enable Grade 7 leavers:

> "to acquire essential skills of learning and harmonise their development in order to apply what they have learnt in and out of school in a useful and socially acceptable way" (Republic of Zambia, 1977:17).

In Zambia since Independence a variety of training programmes for youth have developed. Within the formal education system only the Trades Training Institutes provided basic technical training. Although their trainees are involved in practical work no engagement in full-scale productive activities has so far emerged. These have, however, become a key characteristic of non-formal training schemes, i.e. those that were not officially recognized as part of the national education and training system, but were rather seen as supplementary programmes for school leavers. Most of these schemes were run by voluntary organisations, local authorities (District Councils) and community groups. Two programmes came under the Ministry of General Education and Culture: the Schools for Continuing Education (under the Department for Continuing Education) and the Skills Training-cum-Production Centres (under the Department of Youth Development).

The development of the skills training centres dates from the early 1970s. Most of them are independent projects, having been established by different voluntary associations (especially churches or religiously-inspired organisations), are locally run, and provide courses in a small number of industrial skills ranging from carpentry and mechanics for boys to dress-making and homecraft for girls.

Most courses last between nine and 18 months and consist of theory and practical application of a given skill. Premises can be of different quality ranging from an abandoned workshop on a mission station or stall in a market to a

specially designed 'trade school' with separate classroom, work space, storerooms and offices.

By 1984 there were about 100 centres officially registered with a total intake estimated at 2.000-3.000 trainees. The enrolment per centre varied greatly, depending on the number of courses and the length of the programme.

The basic policy guidelines for the establishment of skills training centres and for obtaining government support had been laid down in the SNDP. This recommended that training schemes for school leavers:

a. "must be simple, flexible, low-cost, community-based and managed, and project-oriented;

b. should take into account local economic needs and conditions in framing their programmes;

c. should aim at training young men and women as far as possible for self-employment;

d. should provide some extension service to trainees upon completion of their course" (Second National Development Plan, 1971).

Few projects have been truly 'community-based' in the sense that they have been initiated by local people, are controlled by representatives from the local community elected for that purpose, and primarily serve the needs and interests of that community. This may be partly due to the absence of great traditions of self-help in the field of education or training. While in cases of absolute necessity community self-help has supplemented Government effort, it was seen as natural that subsequent control would be in the hands of the Government. A contributory factor, as far as non-formal training is concerned, has been people's lack of enthusiasm for anything less than full secondary education. Non-formal training is regarded as a second-rate option that does not merit special collective effort (Hoppers, 1985).

Financial and technical support have varied in nature and scope. Some voluntary associations have a well-organised popular base with established channels for local fund-raising. Moreover, when they are not part of an international network already (such as the Y.W.C.A.) they tend to have good relations with foreign donor organisations which have assisted in establishing the centre and/or from which they receive occasional capital grants for expansion. From time to time smaller bits of support come from local sources such as business houses. This is especially important for community-based projects, which tend to have more difficulties in making effective international contacts. Moreover, for reasons indicated above, they are not necessarily assured of

material support from their own community. Most centres have a practice of charging participants/trainees moderate fees, generally about K 50.00 per year.

Very problematic for the centres is the issue of staff. Not only are instructors with both technical and pedagogical training hard to find, but it is also difficult to pay them an adequate salary. This is certainly the case where centres try to attract graduates from the Technical Teacher Training College in Luanshya. Although some centres have been able to make an arrangement with a particular ministry (other than Youth and Sport), it is Government policy not to contribute towards running costs. The result is that centres try to attract volunteers, especially those from overseas. Apart from easing the pressure on the budget, their presence has the additional importance of being a channel for other types of aid.

Many centres in Zambia are engaged in some form of commercial production. Usually this involves the scale of items produced during the course. They are disposed of at annual fairs or informally offered to relatives and friends. Revenues provide a welcome addition to the current account and the aim is generally to cover the costs of materials, so that only overheads, upkeep, and salaries have to come from subsidies. Some centres, however, explicitly attempt to gain orders which are then produced as part of the programme, either by juniors or by seniors depending on the nature of the order. Such orders are generally obtained through personal contacts of the management or instructors. Longer time of delivery is here off-set by lower prices of the items. Finally, there are a few centres which try to operate on a more substantial commercial basis by setting up a small production unit alongside the training unit. In these cases some former trainees are invited to stay on. They are employed by the centre and, under supervision of a (foreign) volunteer, given the task of producing good quality items for a wider clientele and making profit for the centre (Hoppers, 1985).

The Department of Youth Development (DYD) was established in 1979 with a brief to take responsibility for a direct Government input in the national youth training effort along with the policy guidance and coordination of training and youth development schemes ran by non-governmental organisations. Through the years the Department has been shifted from one ministry to another, having been under the umbrella of ministries for 'youth and sport', education, and 'sport, youth and child affairs'. A characteristic of this administrative manoeuvring has been that the Department was never systematically mixed with other government sections dealing with 'youth', with 'training', or with 'employment'. Even where it found itself under the same roof with other training or education, this was not exploited to forge closer conceptual or organisational linkages.

Under the Third National Development Plan (TNDP), 1979-1984, DYD had been given the task to start its own youth training programme so as to help combat youth unemployment. The aim was to establish skills-training-cum-

production-centres for youths in all districts. The schemes had to be low-cost, enroling about 50 youths at a time, and moreover, to assist groups of trainees to settle in productive self-employment. Because of this emphasis on settlement, DYD aimed at continuing residential training with national support for futurel self-employment.

Due to problems of logistics and finance the programme developed only slowly and by 1984 only two centres had started operating: Chiyota in Lusaka Rural, and Zgangani Kachinga in Lundazi District. In addition, DYD took over a centre at Manyinga in Kabompo District, which was previously under the Ministry of Agriculture and Water Development (Integrated Rural Development Programme). More recently two more centres were established, in Ndola Rural and Mpika district.

In the Schools for Continuing Education it was observed that one of the objectives stated for offering such skills training courses was that schools should offer training to both recent school leavers and adults, both men and women. The idea was to meet basic learning needs and to depend as much as possible on available raw materials. In a number of Centres visited, Food and Fashion proved to be a popular offering. The purpose of the course was to enable trainees process food for sale, design clothing and engage in tailoring.

The Handbook governing the operations of the Schools for Continuing Education summarises the objectives of the skills training courses as follows:

a. to rely as much as possible on the human and material resources available locally;

b. to teach the youth and adults useful skills which may enable them to produce reliable items needed in the community and as a whole to work in harmony with their environment;

c. to reduce unemployment by creating self-employment;

d. to integrate young handicapped people into every programme;

e. to teach the students how to appreciate the importance of working with their brains as well as their hands;

f. to solve some of the economic problems by raising funds through education based on production and thereby create self-help schools.

In terms of implementation of the programmes, the Department of Continuing Education provides guidelines. The duration should be 18 months with students being taught for 35 hours a week. Apart from the practical training, the course

should cover one lesson per week in English, Mathematics, Book-Keeping, Civics and Technical Drawing. Because of the variations in environment and needs there is no uniform syllabus as such. The instructor is required to draw up a programme of work according to needs and interests of the trainees.

The Schools for Continuing Education attempt to teach students some academic subjects but not to provide training for certificate purposes. Usually, whatever is produced at the Centre is sold to the community.

It was noticeable that in most of the Centres there was a considerable presence of organisations that render assistance. These included the German Volunteer Service and the Danish Volunteer Service. Often the planning of activities was done by such personnel.

Hoppers (1986:11) has identified four variants of youth training programmes, which he calls 'mini-trade-schools', 'training workshops', 'apprenticeship' and 'cooperatives-in-training'. In a few institutions surveyed, these examples could be identified. According to Hoppers, in the mini-trades school training tends to be fairly structured and standardized, divided up into uniform sequences which all trainees must pass through within a given period of time, with the instructor wielding authority and control. Training workshops involve programmes whereby training is wholly production-based with the problem of having to reconcile the demands of technical training with those of production. In the apprenticeship model, training and education take place on the job. The assumption is that such a youth may be employed permanently at a later date. In the cooperatives in training, the basic purpose is that youths should be trained in a centre and are expected to receive further training through extension (Hoppers, 1986:19).

It should be pointed out that in a number of institutions visited one emerging trend observed was that instructors thought that the idea of cooperatives whereby certain items would be produced and sold by the members was good. Any acquired profits are shared by the members of the cooperatives. Such members would have different skills to offer depending on their training backgrounds.

Another trend observed in some skills centres was that instructors thought it necessary to introduce skills in agricultural production alongside the major regular skills being imparted. It was felt rather useless to train youths in various practical skills if they could not be self-reliant after training. They need to learn how to grow their own food. While also being able to apply other practical skills as a means of learning a living.

Problems identified by institutions and by the researchers

The wide coverage of the different types of institutions for the state-of-the-art review made that problems could only be identified in general terms. Other researchers such as Bwalya (1983), Shanks (1983) and Achola and Kaluba (1984) identified problems which were related to production activities of an agricultural

nature in formal educational institutions. Their research mostly concerned EWP in secondary schools.

For example, Bwalya found that there were problems of organisation and management of the production units and that there were problems of time-tabling in some schools as more time was consumed by regular subjects. It was further discovered that in a number of schools there were no proper tools, water and arable land to undertake some agricultural activities.

Problems identified from the state-of-the-practice survey can be summarised as follows:

1. Production settings situated away from main urban centres faced a chronic problem of lack of transporting raw materials and products.

2. Depending on the nature of production activities engaged in by an institution, it was found that sometimes there was scarcity of raw materials for the institutions. For example, timber for carpentry and joinery activities and scrap metal for metal products was often difficult to obtain.

3. It was also found that some production activities faced problems of lack of sufficient capital funds even where raw materials were in plentiful supply.

4. Where some groups of individuals worked as cooperatives, there was sometimes a problem of cooperative members being unable to raise the membership fee which could reach over K100.00 (then about US$ 12.-) per member.

5. There was also the problem of marketing produce in some areas due to insufficient market outlets. Sometimes this problem was compounded by the presence of several producers within the vicinity, all with limited potential for a wider market. Thus competition among producers could be stiff. There was therefore a need to coordinate the sale of different products in certain localities.

6. A common problem mentioned by a variety of institutions visited was the theft of products, whether these be agricultural, carpentry or metal ones, and also of the tools and machines being used by the particular institutions. In the majority of cases thefts were reported to have been perpetrated by members of the surrounding communities. The latter occurred particularly in the urban areas.

7. A problem mentioned by some formal educational institutions related to the disbursement of funds realised from sale of items from production units. At the time of the study government institutions were not allowed to retain the

proceeds from production unit sales as these flowed back to the parent Ministry. The overall effect of this was that the institutions were unable to utilize such income for new investment or as a supplement to the institution's recurrent budget.

8. A technical problem mentioned less often by a variety of institutions that were visited related to the preparation of project proposals. In a number of institutions the researchers were informed that there was a problem of preparing acceptable project proposals that would be submitted to prospective donors. Quite often assistance had to be sought from expatriate volunteers for the preparation of such documents. There was, therefore, a need to provide assistance of such technical nature.

9. Another finding related to the keeping of records. Quite often it was difficult to find sufficiently adequate records of course programmes or activities being undertaken in some institutions. For example in a number of skills training centres and other production oriented settings, it was not possible to see actual work plans. Nor was it apparent that there was a system of record keeping.

10. Transport could be another problem. This was the case where the only available vehicle tended to be used by the volunteer personnel on a personal to holder basis. As a result it was difficult to use the transport for project activities in times of need. At the same time, however, it was also frequently recognized that without the services of a volunteer the project could easily come to a halt.

11. An overall problem concerned the accessibility of funds or equipment from donor agencies or other organisations. It was observed that certain types of institutions such as Schools for Continuing Education and some skills training centres had established channels for acquiring assistance. Many other programmes, however, had no such channels or had been bypassed by agencies for a variety of reasons. As a result the resource base for EWP activities varied greatly. In some cases Members of Parliament were reported to be instrumental in getting the centres established and facilitated in their activities.

It should be pointed out that the above problems are by no means exhaustive nor should it be construed that they have been presented in the order of significance. However, these were the problems which the researchers thought warranted sharing with an interested audience at this juncture.

Recommendations by the National Seminar

From what has been said above it will be clear that the concept of Education with Production (EWP) in Zambia has been recognized as a necessary undertaking in a variety of institutions. The review has demonstrated the multiplicity of settings in which EWP operates The concept has been supported at the policy level but a number of problems require concerted efforts to achieve alleviation.

In the National Seminar held in November, 1987 a variety of recommendations were made to improve the implementation of Education with Production in Zambia. These touched both programmes in general education and those in formal and non-formal training settings.

The recommendations were as follows:

1. *Objectives and principles of EWP*

1.1 The main objective of production in schools should be to enhance the overall development of the children and youth by combining theory with practice, leaving with working.

1.2 The main objective of production in training centres should be to enable trainees acquire skills for self-reliance through self-employment in order to help the country to achieve self-sufficiency in production.

1.3 The basic principle of EWP is the integration of various components of education, training and production in youth and adult development programmes. These should vary from community to community to relate to the needs of the community.

1.4 In order to enhance the quality and effectiveness of youth training and employment programmes the following measures should be taken:

- The type and pattern of training offered should be in conformity with identified needs of the local community and the society at large.
- The aims and objectives of training should be clearly defined and explained to the participants before starting the programme.
- A policy should be formulated to cater for the future of those trained after leaving their training centres.
- There should be a strong linkage between the community on the one hand and employers on the other.
- Theory and practice as well as intellectual and manual work should be integrated.
- The trainees should be taught management, administrative, and organisational skills to enable them to coordinate and effectively utilise their own resources.

- Efforts should be made to help trainees set up their own business after graduation from training institutions and this help could take the form of capital, tools and other appropriate equipment.
- Trainees should be introduced to service agencies in order to prepare them for future contacts with financial institutions when they are in self-employment.

1.5 Production units in schools and other educational institutions should aim at producing both for local consumption and sales in order to reduce economic dependence an external assistance.

2. *Need for follow-up action on EWP projects*

2.1 Governmental and non-governmental agencies should assist the trainees with initial capital to buy the necessary tools and equipment for their business and cooperatives.

2.2 More training, re-training and in-service training be offered to the graduates especially those self-employed to maintain their skills or to enable them produce items of high quality.

2.3 The training agencies should find out whether their former graduates are able to settle in a viable activity; a register on such graduates should be maintained by the relevant provincial officer.

2.4 Self-employed youths and young adults in rural areas should be assisted with more services such as part-time technical training, management assistance, acquisition of materials and with marketing.

2.5 The Department of Cooperatives, in the Ministry of Cooperatives and Marketing should continue providing the small cooperatives with loans.

2.6 There should be coordination and co-operation among government and non-government agencies in handling the problems of self-employed youths and other youths.

3. *Role of different agencies involved in youth development*

3.1 Agencies involved in youth development activities should mobilise all youths in their areas including those with least education and the poorest; the latter categories should be provided with political education and assistance to form cooperatives.

3.2 Agencies should assist trainees to formulate adequate project proposals before they (trainees) can approach donor agencies for financial and material assistance.

3.3 The agencies should provide extension personnel to assist self-employed youth in solving their social and academic problems.

3.4 Career counsellors from various governmental and non-governmental agencies should visit schools to help pupils identify suitable careers and develop their skills and talent in pursuing those.

4. *Role and linkage between formal school and training institutions*

4.1 There should be more linkages between formal schools and skills training centres for youths and adults. For example, study tours should be arranged for the pupils to visit training centres and places of work as a form of motivation in choosing their own careers, at an early age, for their further practical life.

4.2 Skills training centres should serve as focal points for counselling the pupils on their future work situation.

4.3 Formal schools should enable the self-employed youths and adults improve their academic background for the benefit of running their businesses efficiently and effectively. They should serve as a national linkage between education, work and production.

4.4 The effective linkage between education, work and production should encourage the community, young people and teachers/trainers to change their attitudes towards EWP.

4.5 The activities in training centres should be seen as a continuation of education linked with work and production.

5. *Need for Coordination between agencies involved in EWP*

5.1 Experts and researchers should be consulted on matters relating to policy formulation and programme implementation.

5.2 Research studies should be relevant to programmes and projects to be set up.

5.3 Those engaged in programme and project implementation should be trained personnel.

5.4 Copies of research papers on youth development should reach the National Youth Development Council (NYDC) to be used for formulating policies and strategies for implementation.

5.5 Those involved in youth development should be involved in discussions on policies from the start rather than leave it to the top leadership only.

5.6 Since research findings are often not used in the process of policy formulation, it should be stressed that these findings should be translated to reach those concerned.

6. *On understanding the concept of production*

6.1 To promote efficiency in production performance, there must be an improvement in institutional leadership.

6.2 Teachers, students should be encouraged in appreciating and planning for other equally important roles in production work.

6.3 There should be a variety of production activities as this could assist in identification and development of talent among the youth. This calls for diversification of production activities.

6.4 The in-depth exploration of what constitutes Education with Production should continue. Efforts should thus be made to investigate the theory and practice of production work.

6.5 In order to have a common understanding of the meaning of terms, a start must be made to define the more common ones.

In this regard, the following were recommended:

- the term 'productive activities' or 'production work' be used for all production taking place directly as part of skill training in a classroom setting.
- the term 'production project' be seen as production that is separate from classroom work and is organised explicitly to achieve production goals.

7. *On teacher participation and attitude to EWP*

7.1 More workshops and seminars on EWP for teachers, lecturers and instructors should be mounted by the two ministries of education and the Department of Youth Development.

7.2 Efforts should be made to suggest ways and means of utilising trained manpower more effectively.

7.3 Some methods of assessment schedules for production work should be formulated.

7.4 Efforts should promote participation in EWP activities.

8. *Curriculum integration*

8.1 Curriculum integration of EWP is part of the educational reforms and should be carried out in relation to social and economic considerations.

8.2 Changes in the curriculum should involve methodology, content and assessment. There ought to be a degree of integration across the curriculum so that production becomes an integral part of the whole curriculum.

9. *On community participation*

9.1 The community should be actively involved in certain specified projects to ensure their successful implementation and to maintain community support.

9.2 On marketing, institutions should embark on projects that have an immediate local market so as to enhance overall development of the communities. There should be coordination with other institutions in order to avoid production of goods and services that have no market or consumer. A qualified body is required to carry out the coordination and cooperation between the institutions. It is suggested that initially the production unit itself should carry out market research to determine the marketability of its products and services.

9.3 There should be active community involvement in workshop construction in industrial arts as a way of ensuring continuous interaction between adults and youths. School leaver projects and literacy clubs are other ways of linking youth and adults, thus ensuring continuity in youth development in EWP.

10. *On the need for subject integration*

There should be subject correlation and integration as a way of encouraging teachers and pupils to appreciate the role of production in changing negative attitudes towards EWP.

11. *On policy*

Policies on EWP should be based on a clear philosophy to make them solid and longlasting. Experts ought to be consulted during formulation and implementation of policies. The experts should be well versed with the prevailing social norms and order. Planning should be with the people and not for the people.

12. *On need for research*

The seminar felt that there was need to make nationals of participating countries more aware of the value of research in national development. In this regard, the following steps should be taken;

12.1 Both academic and developmental research should be used to enhance the implementation of EWP projects.

12.2 Researchers from different sectors of national development should coordinate their efforts for the efficient operation of EWP programmes.

This should be achieved through the Educational Research Bureau at the University of Zambia.

Education for production in Ethiopia

Birhanu Dibaba and Deneke Mokuria[1]

Introduction

This is a summary report of the study made to investigate the concept of Education with Production (EWP) activities in Ethiopia, which includes the status of education with production programmes, guidelines, and their implementation and impact at school or training institutions. In Ethiopia one of the national educational goals is 'Education for Production', the aim of which is to produce young citizens which combine intellectual education with productive labour. This concept has therefore been one of the guiding slogans for curriculum development and its implementation. A substantial amount of manpower, material and finance is mobilized to this effect, so that there is a necessity for monitoring and evaluating to ensure the proper implementation of this goal.

The nature of the review

In the Ethiopian context a survey of the educational system (general education and areas of training) was carried out to identify elements of productive activities within it. The study was expected to provide information on existing policies and practices of EWP in various sectors in Ethiopia. The conclusions are hoped to give direction to future in-depth and comprehensive research on vital aspects of the programmes. The specific objectives of the study were to:

a. identify different types of EWP programmes that are in existence in the country;
b. identify, collect, analyze and synthesize literature on EWP programmes in formal and non-formal educational and training institutions;
c. describe different examples of formal and non-formal education training and production settings within which the integration of education/training with production takes place;
d. examine linkages between EWP programmes and productive activities in educational institutions;
e. identify types of technology being used and their impact on production;
f. examine EWP impact or outcomes;
g. identify missing gaps and point out areas for further research and practical action.

A documentary analysis of government and educational directives, documents, and guidelines passed to schools and training centres was made. Along with this,

a small field survey was conducted in five purposely sampled regions, namely: Shewa, Addis Ababa, Arsi, Bale and Gojam. On the side of the formal education sector the sample consisted of elementary, junior secondary, academic and comprehensive senior secondary, and technical and vocational schools. On the side of non-formal education, community skills training centres and other special training institutions were included. In total 20 schools and training institutions, and four community skills training centres were selected.

Two types of instruments were used for data collection. These were interviews and observation formats. The interviewees were school headmasters, teachers or trainers and students. Teachers selected were those involved in teaching Productive Technology, Agriculture, Home Economics, Handicraft. They also included those leading labour education programmes. The primary, junior, academic senior secondary and comprehensive school students were selected from grades 6, 8, 10 and 11. Students selected from technical and vocational schools and special training centres were those in their final year of study or training. Group interview was used. For each educational level or training centre, the general views of the respondents were presented in a descriptive manner. These were substantiated or supplemented by observation whenever appropriate.

A historical overview of the Ethiopian education system

Traditional education

The Ethiopian education system has a long history that dates back to the sixth century B.C.. It has gone through many upheavals in the change from traditional to modern education. Traditional education was religion-oriented. Under the Orthodox Christian religion, which came to existence about 327 A.D., the church used its schools as the main propagator of its culture. The contents of learning were largely biblical and the process of learning included memorization of selected sections from the Bible (S. Pankhurst, 1955 and R. Pankhurst, 1966). Moreover, the church was also conservative and used to be an obstacle to changes or innovations which might disturb the status quo (Alemayehu, 1969).

The contents of Muslim education were similar to that of Christian education. The Qur'an school curriculum included some chapters from Qur'an, Grammer and Islamic Law. The method of learning was mostly memorization in Arabic (Markatis, 1975). In general the Christian and Muslim education concentrated more on rote learning and memorization. The type of education offered in both types of institutions encouraged the recipients to develop negative attitudes towards productive work or manual labour.

Modern education

Traditional religion-oriented education was not flexible enough to incorporate the new scientific and technical culture. Emperor Menelik who saw the short-comings of the traditional type of education, opened the first modern school in 1908 with the objective of producing administrators, interpreters and technicians. Academic courses in general, and languages in particular were offered (R. Pankhurst, 1968).

With more influence of the Western culture in the 1920s mission schools began to expand widely in different regions of the country. Relatively speaking, contrary to the traditional Orthodox Church, Western missionary influences had some positive impact on practical education. The curriculum that was offered had some work-oriented courses. For example, a Swedish Evangelical School in Eritrea offered Typography, Bookbinding, Carpentry, Language, Needle-work, Spinning, Weaving and Domestic Work in general. Handicraft was also offered by a Catholic mission in Dire Dawa (R. Pankhurst, 1968).

Only in the 1930s can one find schools that prepared the pupils for technical and professional work by providing courses related to production. One of such schools was Lycee Haile Selassie I, that offered courses in Mathematics, Physics, Chemistry, Civil Engineering, Veterinary Science and modern languages. Another school, Menen Girls School, used to offer courses in Science, Mathematics, Drawing, Dressmaking, Home Management and Physical Training. Gulele School of the Redeemer for Orphans (founded in 1932), offered courses in Science, Mathematics, Shoemaking, Blacksmithing and other trades (R. Pankhurst, 1968). Another school established by the MOE in 1934, known as 'Ecole Nationale des Arts Techniques', also known as Gondrand School, used to offer Fitting, Blacksmithing, Machining, Automotive and Electrical Engineering, Carpentry, Masonry, Welding and Driving (Abebe Gete, 1984).

Such educational provision, which was hoped to be a basis for the development of the country, was interrupted by the 1935 fascist invasion which abolished the whole basis of the educational system (Markakis, 1975). The only remaining school in the country was that of the Catholic Mission which accepted students in a 4-grade system in which emphasis was on religion, the Italian language, and subservience to the Mussolini regime (Education in Socialist Ethiopia, 1984).

As soon as the war of occupation was over, the Ministry of Education and Fine Arts was established in 1941, and the interrupted modern education started all over again. In 1947 the First 10-Year Education Plan was drafted, and the 6-6-4 system was introduced. This was intended to produce teachers and agricultural personnel. It faced a serious problem due to lack of teachers (Educational Revolution under the special conditions of Ethiopia, Draft, Ministry of Education, 1976). In 1957 the educational system was organized into 6-2-4 higher education (Some Aspects of Educational Development, Ministry of Education, 1971).

The objectives and contents of the curriculum for primary, junior secondary and secondary education contained some elements of production. In the Elementary School Curriculum of 1958 and later of 1972, the following subjects were cited: Fibrework, Basketry, Woodwork, Carving, Stonework, Hornwork, Gardening, Keeping poultry and dairy cattle, and Home Economics. The Secondary School Curriculum Books (published in 1963) contained general objectives among which the one related to EWP reads as follows:

> "to prepare one to participate efficiently in the productive work ... so that one may contribute something of value to society. This includes both love of work, and appreciation of the dignity of labour and insistence on high standards of efficiency and workmanship. These aims are practical as well as moral assets".

The purpose of the junior secondary education was entrance into one of the specialized technical, agricultural, or commercial secondary schools; and immediate employment as a semi-skilled worker after completion. For the senior secondary, immediate employment in the intermediate levels of public administration or private enterprises was anticipated. These curriculum books also listed down the specific objectives of the junior and secondary school subjects as follows:

- to offset the idea that schools are only for the purpose of training clerks, civil servants and urban workers;
- to teach, by experience and example, the dignity of manual work;
- to show that pleasure may be derived from work properly undertaken and completed;
- to balance theory and practice, the practical side being catered for in the laboratory and the school compound;
- to teach students the importance of soil conservation, irrigation, and re-afforestation;
- to show the economic importance of each of the various forms of crop and animal husbandry;
- to teach students (where possible) the care and management of livestock;
- to give future farmers, gardeners and others a knowledge of the scientific principles underlying work on the land and their applications in practice.

Subjects consisted of Agriculture, Horticulture, Irrigation, Forestry, and others which were relevant and could be related to local conditions.

The Industrial Arts courses for junior and senior secondary schools included general Electrical work, general Metalwork, and general Woodwork. In teaching Industrial Arts in the secondary schools it was stressed that, at each stage in the courses, theoretical and practical instruction must be strongly linked. There had

to be regular evaluation of the practical work undertaken by students and this evaluation had to be weighted so that practical work received its due recognition in relation to the result from theoretical studies.

From 1941-1974, there were few technical schools established in the country to meet the shortage of technically skilled manpower. These were the Addis Ababa and Asmere Technical Schools, the Bahir Dar Polytechnic Institute, the Ambo and Jimma Agricultural Schools. The Addis Ababa and Asmara Technical Schools have been training students in Automechanics, Machining, Woodwork, Electrical work and Electronics, Drafting, Surveying and general Mechanics. The Bahir Dar Polytechnic Institute has been offering courses in Agromechanics, Electrical technology, Industrial technology, Wood technology and Metal technology. The Ambo and Jimma Agricultural School have been training agricultural personnel in various branches of agriculture. Although not intensively, the comprehensive secondary schools have also been offering courses related to Technology and Agriculture in various fields mentioned above.

In addition to these, government and non-government organizations like the Ethiopian Airlines, Telecommunication, Electric Power Authority, etc. have their own training centres for technicians in their respective fields (History of the Development of Ethiopian General Education, Ministry of Education, 1983.)

The implementation of curriculum changes

In the above section the objectives and contents of the pre-1974 revolution educational system that were relevant to Education with Production have been pointed out. General views on the implementation and evaluation of the directives and objectives are discussed below:

In its report to the World Bank on the second loan for the expansion of education, the Ministry of Education and Fine Arts (1970) stated:

> "starting from the Second Five Year's Development Plan, blending our educational programme with the country's economic growth and producing not only academically trained people but also professionals trained in various technical fields became obligatory, and the education system has been improved to suit this task".

The report goes on stating the steps that were taken in blending academic learning with technical and vocational training in the elementary schools by offering courses like Home Economics, Poultry keeping, Gardening, Carpentry and various handcrafts. This was claimed to have enabled children to develop positive attitudes towards manual work and to appreciate the honour and prosperity that result from the world of work (Report on Second Loan Permitted by World Bank, for the Expansion of Education, Ministry of Education and Fine Arts, 1971).

The above reports indicate a relative success of the educational system in incorporating productive activities, up to 1969. In 1969, a new and more work-oriented curriculum was introduced, which was reported to be better than the previous one. The Junior Secondary School Curriculum, Book, II, 1969 stated that "this (the new curriculum), marks a radical departure from the academically weighed courses that have previously dominated the secondary school system".

Despite these efforts the Ministry of Education has also admitted weaknesses. For example it has acknowledged that targets in the field of technical and vocational education have not been met by the normal school system, because of more weight given to academic learning (Some Aspects of Educational Development 1967-1971, Ministry of Education and Fine Arts, 1971.) Lulsegoed Alemagehu (1969) has also made similar comments on the theoretical nature of the educational system, when he stated that academic achievement received much emphasis, and even the few technical and vocational schools in Ethiopia selected their entrants from among the top twenty percent of students, who have passed the national examination. The latter, which are sat for at the end of grades 6, 8 and 13 were all based on theoretical assessments. In order to pass or get good scores more emphasis was given in teaching and learning to the academic subjects. Thus the general education system did not manage to equip students with useful employable skills.

The introduction of the comprehensive system of education in the senior secondary was to find solutions to such problems as the high dropout rate, the growing demand for skilled manpower and the increasing difficulties of access to the university. In spite of this strategy, a majority of the students joining the secondary school continued to pursue their studies within the academic stream (Girma Amare, 1982).

Non-formal and adult education, which did not receive due attention and necessary support by the toppled feudal regime, was until the 1955 proclamation operated mostly by non-governmental agencies. The new proclamation made the Ministry of Education the official body through which adult literacy programmes were to be conducted and coordinated. The Adult Literacy Project in Ethiopia was to include the following elements:

- work-oriented or functional literacy programmes directed at workers in specific fields such as agriculture, textiles and others;
- vocational and technical programmes in specific fields;
- basic courses in Home Economics, Child care, and Hygiene for women in rural and urban areas;
- comprehensive community development and agricultural development programmes for individuals and family groups.

In general, in both formal and non-formal education, there was a gap between guidelines and their implementation. The academic oriented education was found

not to contribute to the country's economic and social development. This forced the government to carry out a comprehensive review of the entire educational system in 1971. Two of the responsibilities of the review, pertinent to this study, were to analyze the education and training system of Ethiopia and its capability for promoting economic, social and cultural development; and to suggest, wherever necessary, ways to improve and expand the education and training system in order that it might achieve aims relevant both to the society and the overall development of the country (Draft Report Education Sector Review, 1972).

The following were the major findings of the comprehensive review of the education system: it was too elitist, and emphasized rote learning and passing of rigidly set examinations; it did not provide employable and relevant skills to raise the earning capacity of the students; it was designed to produce a few intellectuals; it favoured only six per cent of the total primary school enrolment that reached a higher level of education after 12 years; its advantages were for the few living in urban and industrial areas; and it did not enable the recipient to be economically self-sufficient.

The Education Sector Review Report presented proposals to be included in the national goals and objectives of education. The national goals became: to speed up economic development of the country so that the living standard of the people would improve; to create a society that appreciated its own cultural heritage and would be capable to create new things (innovative mind) with a strong feeling for modern civilization; to build a generation that was self-reliant, and participated in world-wide affairs. The educational objectives were: to popularize the dignity of work and get rid of the traditional dislike of manual work; to produce the required trained manpower for the economic development by teaching science and technology; to make individuals self-supporting by raising their own income.

Among the many policy-related issues raised by the report, and in particular those points connected with work-oriented education were the following. The educational system would be prepared in such a way that it would be useful and related to life. Therefore, education would be linked to agriculture, small scale industry, cottage industry, commercial enterprises, etc. Education would therefore be integrated with life and not remain only theoretical or academic. Furthermore, the report recommended an integrated economic development programme as well as the establishment of community skill training centres in various parts of the country.

Early 1972 the Council of Ministers discussed the policy-related issues raised by the Educational Sector Review Report and accepted them unanimously. However, certain proposals from the Review drew criticism from teachers and educationists on the grounds that they were allegedly designed to turn the majority of the students and literacy learners into tenants for the landlords under the feudal land tenure system by introducing a four-year education (Education in Socialist Ethiopia, Ministry of Education, 1984). Yusuf Omer Abdi (1975) has

pointed out that the major reasons why the Review was unacceptable were that the Report did not consider adequately the socio-economic and psychological condition of the country; that the method of the study had been inappropriate; and that it proposed an elite type of education.

Under such conditions teachers' and students' protest against such education system was only one of the factors contributing to the overthrow of the feudal government.

Ethiopian education since 1974 (post revolution)

Since 1974 efforts have been made to reform the education system. A major development has been the tremendous quantitative expansion. Large number of schools have been built and the number of teachers and students has increased. The Ministry of Education reformed the education system along the line of socialist general education which follows a polytechnic approach. Such type of education (according to the Handbook on the School Experiment, Ministry of Education, Curriculum Department, 1982), is to be acquired equally by all members of the society; it refers to all cultural areas, and it is a precondition for life and for work in society, for all kinds or further education; it also contributes to laying a foundation for the all-round development of the human personality.

To accomplish this reform of education the Ministry of Education, through the Curriculum Department, elaborated a new curriculum, and developed new textbooks, teachers' guides, etc. for nearly all grades and subjects of the regular schools. The instructional materials have been produced by referring to the government guidelines, the National Democratic Revolution Programme, and later on the Workers Party of Ethiopia's Programme, the 10-Years' Economic and Social Development Prospective Plan, and other economic, political, social and cultural proclamations.

Concerning the educational objectives, an unpublished paper written by the Ministry of Education (1975) stated:

> "... by linking education with work and translating science and technology into practice in order to improve and develop the living conditions of the people and by restoring handicrafts and arts for the use of the broad masses, vocational education must be expanded to produce trained manpower needed for the change the country is undergoing".

Another unpublished paper of the Ministry of Education, written in 1976, stated:

> "... the education offered at each level will be practical and related to production. Since education is a typical instrument to overcome basic problems and to increase productivity and production, its objectives under the prevailing conditions of our country are to make academic learning

linked with practical experiences in order to seek solutions to the problems of the broad masses by using scientific and technological methods" (Education for Production, Scientific Research and Political Consciousness, Ministry of Education, 1976).

The new curriculum, which replaced the old one, is known as the Transitional Curriculum. It has been undergoing modifications from time to time based on direct feedback from schools and on evaluative studies. The curriculum was meant to be the basis for school instruction until the new Polytechnic Education could be implemented nationwide. However, after experimentation this new Education has been discontinued in the late 1980s.

In the New Educational Objectives and Directives Part I, 1980, the general educational objectives of Ethiopia were stated as 'Education for Production, for Scientific Research, and for Political Consciousness'. The document elaborated the three general educational goals, and as regards 'Education for Production'" the following points were highlighted:

- The education offered at each level would develop in the students respect and love for work, a desire to work and the culture to relate theoretical learning to labour.
- Theoretical and practical education for manpower development with a range of vocational skills will be offered
- Education will be of the kind that enables the effective implementation of development plans and of other national obligations by teaching ways in which the quality and quantity of productions can be increased.
- Schools will be models of development that introduce and deploy new kinds of implements and machinery and the knowledge for establishing new methods of production.
- The students will be made to appreciate productive work through labour education.

To attain these broad educational objectives, the contents of education was to embrace a balanced proportion of the following areas: intellectual education, ideological education, polytechnical education (technical and vocational), aesthetic education, and physical education. The Directive further describes the profiles of the learner who goes through such educational system, as follows:

> "... a student developed by these educational objectives will not be endowed with a narrow academic education, nor will he be a producer alone. He will be provided with academic and a productive education. He will be humane and productive worker. He will not be living on the produce of others, nor will he be dependent on others for his livelihood".

This intended outcome was further emphasized by the National Production and Cultural Development Campaign Centre, in its Second Year Plan of 1980, as follows:

> "To make the students, especially, those in middle and higher levels, participate in socially useful work in their schools, environment, 'Kebele' associations, production organizations, etc., to render mental and physic ' services in order to enable them to become productive citizens that love and respect work".

The specific objectives of the technical vocational education were also outlined in the New Education Objectives and Directives. Part I, (Ministry of Education, 1980). Those relevant to EWP are· to develop the skills of modern production systems; to familiarise oneself with the processes and the means of production in the economic sectors; to unite theory with practice; and to practically and effectively participate in local development activities.

To achieve these specific objectives the general contents of technical and vocational education included basic productive skills in agriculture; artisan occupation; home economics; the processes of production and distribution; general polytechnics education; and technical and vocational education.

In order to effectively implement and strengthen the EWP within the general education system, a programme known as 'Labour Education' was launched in 1979. This was a programme in which students were expected to render physical and mental services to the community according to guiding plans (Second Year Plan, 1980).

Besides formal education attention has also been given to adult education. The Second Year Plan states the programme of adult vocational training as follows: "In order to teach the rural communities the necessary vocational skills and to enable them to be self-sufficient, adult training centres will be constructed in the districts, relevant to the needs of the peasants; courses in basic productive skills, and those courses of peasants' choices will be offered".

In almost all official speeches, state and party documents, that dealt with the educational system, the need for integrating classroom instruction with productive work was stressed. For example in a speech delivered to the 10th Educational Conference (1980), a government representative stated:

> "To carry out an educational revolution in Ethiopia means to combine theory with practice in the teaching learning process. - We want to develop an education system that blends academic learning with productive work".

In the Third Year Plan (1981) it was also stated that the general and basic objectives of education should be to link education with work in order to produce a physically, mentally and spiritually developed socialist individual. With regard to EWP objectives, specific points which substantiate and supplement the previous ones are listed.

In the Programme of Workers Party of Ethiopia (1984) it is also stated that, "due attention will be given to formulating and implementing programmes that will enable the youth to actively participate in production, science, technology, the arts, sports, military training and other spheres; as well as to spend their leisure time rendering services beneficial to the society, in broadening their horizon of knowledge, and in recreation".

So far an attempt has been made to give a general view of the Ethiopian education system from the time of its inception up to the present period, with emphasis made on the relationship between theoretical and practical learning. In the following section the design, implementation and impact of the EWP programmes int different educational spheres - formal education and training sectors - will be described.

Education with Production in formal and non-formal education

As indicated in the previous section 'Education for Production' is one of the three national educational goals in Ethiopia. It is, therefore, important to know the degree to which schools and training institutions have attained this goal.

Within the general educational system productive activities are expected to be reflected within all subjects, and in particular in Productive Technology, Agriculture, Home Economics, Commerce and Economics. Besides these subject-based activities, students are also expected to take part in what is known as the 'Labour Education' programme, in which they conduct socially useful activities within and out of school.

EWP in general education

The government, in the National Democratic Revolution Programme, and the Party in its educational policy statements have emphasized that schools should be centres not only for academic knowledge but also for productive activities in which the youth should actively participate in such areas as science, technology and the like. Towards the realization of these aims various directives and guidelines, and circulars clarifying these issues were also disseminated.

Among the first directives to formal education institutions was one outlining strategies for student participation in production. In this regard major objectives have been as follows (Ministry of Education, 1978):

- to enable students to participate in the productive activities of their respective communities as inseparable units and not to exist as islands as was the case in the previous social system;
- to be productive while learning and learn from their productive activites, thereby developing respect for physical labour and developing spirit of cooperation and team work;
- to make them realize the importance of using natural resources for economic development so that they will be stimulated to develop and conserve them;
- to acquaint them with possible constraints that schools may face in their efforts to practically implement agricultural activities and with methods of solving them;
- and finally, to strengthen the income generating capacity of schools so as to make them self-supporting.

Another directive towards strengthening the 'Education for Production' concept and its implementation through 'Labour Education' states the following objectives (Ministry of Education, 1981)[2].

- to attain all-round personality development, intellectually, in terms of skills and abilities, in ideology and in morals, through labour education activities;
- to redress the dichotomy of attitudes that are prevalent in society with regard to intellectual work and physical labour, by developing in students respects to labour, irrespective of type;
- to foster workplace discipline, a spirit of team work, cooperation and a sense of responsibility in students;
- to develop a sense of belonging to and being one with the community of their schools, to be reflected in their active participation in their community's productive activities, learning from these and developing progressive ideas and new methods of production and of controlling the natural environment.

Towards the fulfilment of the 'Labour Education' objectives, the same directive recommends that three to six hours per week be allotted to Labour Education activities. It also lists types of practical activities for the different ages and grade levels. Under handicraft are listed objects or articles to be produced from horn, fibre, leather, reed and bamboo, leaves of palm tree and some types of grasses. Under woodwork are given types of furniture to be produced and/or repaired, kitchen wares, agricultural tools, and doors and windows for construction projects. Under metalwork are groups of furniture, items from tin and various agricultural tools and implements. Schools with machine shops can produce different geometric and other figures, nuts and bolts and simple spare parts. Where auto-shop is available, students are to carry out simple repair work and servicing of vehicles; schools with the requisite facilities can do some drafting work, draw out bill of materials, design wooden and metal components for

building constructions projects. supervise building constructions according to the plan drawn out, and carry out poster work. Under electricity and electronics students can undertake residential and other wiring and line maintenance, installation and repair of engines and generators, repair of household electrical appliances, recharging of batteries, and installation and repair of electronic equipment such as radio and television sets and antennae.

In addition to the above activities the paper gives an extensive list of optional items under the different sub-headings of productive technology. Then there are various productive activities under agriculture and still more under sports, art, music and drama.

There is a directive on co-curricular activities (Ministry of Education, 1981) whose stated objectives, vis-a-vis the students' acquisition of knowledge integrated with productive activities, are:

- to acquire better knowledge;
- to inculcate love of work;
- to lead students towards research;
- to inculcate respect for and healthy attitude towards physical labour;
- to enable students, in accordance with the educational goals of Ethiopia and their desire and ability, to wisely choose technical and vocational fields to pursue;
- to develop their knowledge and ability in science and technology;
- to encourage students to render social services;
- to create pleasurable past-time activities by enabling them to spend their leisure time engaging in educative activities;
- to encourage every student to develop his creativity both as an individual and as a member of a group.

Another guideline issued by the Ministry of Education (1980) is one on School Administration with the express purpose of enhancing income generating capacity of schools and hints on how to obtain aid from the community. This gives advice on how to care for and mow grass in the school premises; to grow forest trees, fruit trees and vegetables; and where land is available to grow crops, produce poultry products, maintain an apiary (for beekeeping) and fatten livestock. The products should all be for sale and with the proceeds the school can purchase supplies and raw materials for making students' education more production-oriented.

The directive on "Schools' Internal Management and Administration" also outlines the duties and responsibilities of schools' labour education committees towards better attainment of the above mentioned objectives (Ministry of Education, 1981).

The information so far discussed is based on document studies. Interviews with headmasters, teachers and students, and school observations show that actual EWP programmes are found to consist of the following:

At the Primary and Junior Secondary level:
- Agriculture and Gardening;
- Handicrafts and Productive Technology;
- Labour Education;
- Home Economics.

At the Senior Secondary Level:
- Agriculture, i.e. vegetable production, crop production, dairy farming, poultry, beekeeping, afforestation, etc.;
- Productive Technology i.e. electricity, woodwork, metalwork, automechanics;
- Home Economics i.e. textiles, home management, child care and nutrition;
- Labour Education i.e. repair and maintenance of school property, fencing and beautifying the school environment, giving services to the community.

So far we have tried to indicate some of the major points with regard to EWP plans, programmes and directives in the general education system. The general educational objectives and directives apply to all levels in the educational system although the degree of actual contents and implementation vary from level to level.

Implementation of EWP programmes

At the Primary and Junior Secondary School level:

In line with the EWP programmes students have accomplished the following tasks. In Agriculture they have produced variety of vegetables, cash crops, such as sugar cane, coffee, banana and hops and kept some beehives. In Handicrafts and Productive Technology they have produced shelves, carpets, mats, bags from leather, chairs from ropes and wood, bedside lamps, clay work, and needlework. In Labour Education they have participated in repairing and maintaining school properties and fencing school compound by bringing the necessary materials such as wood and stone. Furthermore, students have participated in community services such as digging pit latrines, building houses for the weak and disabled, clearing and repairing feeder roads, building wooden bridges across rivers, weeding and harvesting school and community crops, etc.

The tools and implements used at this level to accomplish EWP activities include simple hand tools distributed by the Ministry of Education, tools made by local artisans and traditional means.

Some of the innovative activities and improvisation noted are the use of drainage on cultivated land, improving traditional beehives, making tables from sisal fibre and wood, making different dyes from some soil types and plants, using solar energy for boiling tea, etc.

To accomplish the EWP activities schools are authorized to generate their own income and support themselves based on the central guidelines (Educational Proclamation No. 260/1976, Ministry of Education). In these surveyed primary and junior secondary schools, the annual allocated budget for productive activities was on average Birr 1,400.- per school (Birr 2 was appr. US$ 1) and from this schools generated an income ranging from Birr 3,330.- to 4,500.-. The schools' budget allocation is supplemented by contributions from the community.

The problems that hinder successful implementation of EWP in primary schools as mentioned by the respondents, and also observed by the study team, have been: the lack of adequate area of land (despite the circular that allows schools to have 10 hectares of land); the lack of tools and money; the lack of quality teachers; the lack of workshops or similar workplaces for productive activities; a shortage of raw materials especially wood; the lack of interest among some students to participate in agricultural activities and labour education, and a misconception among some community members about the meaning of labour education, which they consider to be exploitation of the labour and time of their children for the advantages of the school only. They do not see the finalresult as beneficial to the overall development of their children.

As regards the improvement of EWP the respondents generally suggested that the problems cited above must be solved by those concerned: teachers needed to participate more actively; ample time must be allocated for practical activities; conditions should be made more conducive for educational visits, and the community should be enlightened to gain a proper understanding of the concept and objectives of Education for Production.

Wherever environmental and other conditions would be conducive, the following new EWP activities were suggested to be introduced in schools where they were not offered. These included modern poultry production, livestock fattening, dairy-farming, beekeeping, horticulture, tailoring, woodwork, building construction, food preservation, fishery, tannery.

Suggestions and recommendations[3] by primary and junior secondary schools included (a) the necessity for establishing links between schools and productive enterprises so that students could get the opportunity for an introduction to actual production processes, (b) recruitment of teachers from among candidates interested in the teaching profession, (c) motivation of teachers by concerned authorities so that they could develop the initiative to know and do, thereby setting a good example to the students, and (d) the provision of guidance and counselling services so that students' interests were raised and they would clearly foresee their future life as adults.

At the Senior Secondary School level (grades 9-12):

In academic senior secondary schools, EWP activities were manifested mostly through agriculture and labour education. In agriculture, students produced vegetables such as potatoes, onions, carrots, red beets, flowers, etc. In labour education the students participated in planting trees in the school compounds, fencing they school compounds and weeding and harvesting school crops. They also rendered services to other communities. These included digging pit latrines, harvesting community crops, constructing houses for the old and disabled, clearing and repairing footpaths, participating in the villagisation programme and taking part in afforestation and soil conservation projects.

Due to the nature of their training in Agriculture, Productive Technology, Home Economics and Commerce, the comprehensive senior secondary school students have accomplished the following, in addition to the above mentioned EWP activities. They participated in the production of crops and vegetables, dairy farming and poultry, beekeeping and afforestation. They produced different types of furniture, screw-drivers and screws, buckets, electric stoves, other electrical devices, models for teaching aids, and constructed recreation rooms. They preserved variety of food and fruits, produced laundry materials such as soap and detergents; designed, cut and sewed clothes. They participated in repairing and maintaining school property such as desks, chairs, chalkboards, fences etc.

The type of implements and tools used vary from traditional (mostly used in labour education and agriculture) to modern technology. These include tools made by local artisans, simple handtools, and some machinery and electrical appliances distributed by the Ministry of Education. In the surveyed senior secondary schools the yearly budget amounted to an average of Birr 5,117.-. At the same time the schools generated an average income of Birr 3,377.-.

Although many practical EWP activities have been accomplished in the surveyed senior secondary schools, there were various problems that hindered the successful implementation of the programme. The following are the major problems cited by the respondents as well as observed by the study team. These were the lack of spare parts for machines, a shortage of raw materials, a lack of adequate space for both workshops and classrooms, a shortage of qualified teachers in the practical subjects, the inadequacy of the allocated budget, a lack of adequate land or water (or both) for agricultural activities, classes that were too large, the absence of a source of electricity, the exclusion of practical subjects from the national examinations; a lack or shortage of reference materials; inadequate period allocation to practical subjects, and the poor conceptualization of Education for Production by the community, particularly with regard to Labour Education. Like in primary schools the community was found to view the Labour Education components of the senior secondary school programme as exploitation of the labour of students rather than as an integral part of learning process.

To solve the above mentioned problems school heads, teachers and students have forwarded suggestions and recommendations. The necessary tools and machines should be supplied wherever there is shortage. Spare parts for machines should also be provided along with continuous maintenance. There should be consistent supply of raw materials and power in order to carry out productive activities effectively. The inadequate budget provided should be addressed through more contributions from the government and the community. To alleviate the problems of class size, more workshops and classrooms should be built; and adequate land with water supply must be provided. Practical subjects should be included in the national examination, adequate periods must be allotted to practical subjects, and qualified teachers in each field should also be assigned. Teachers with long services should be provided with refresher courses. Certain courses like poultry, beekeeping, fishery, food preservation, etc. should be introduced wherever they do not exist. Links should be established with productive enterprises so that students will be acquainted with actual working conditions. The necessary steps should be taken to raise the community's concept of EWP particularly with regard to Labour Education.

Outcomes and impact of EWP in the general education system

Primary and Junior Secondary Schools

Based on headmasters', teachers' and students' responses, the conceptualization of EWP in the primary and junior secondary schools can be circumscribed as follows:

- it means raising productivity by getting rid of traditions that are a hindrance to the adoption of modern means of production;
- it means producing something which is beneficial to the school;
- it means all-round personality development;
- it enables one to produce the necessities of life while at the same time gain knowledge through learning and inquiring;
- it enables the students to produce different tools and implements by making use of the knowledge they acquire in the process of learning;
- it helps to acquire technological and agricultural skills that are fundamental for the country's development;
- it makes education and production to go hand in hand, and enables students to translate theory into practice;
- it means applying classroom experience within the school and the community;
- it means enhancing the development of science and technology.

Some rural school pupils thought they knew all what was to be known about agriculture and thus consider activities associated with this a waste of their time

and energy. Their preference was, therefore, for other practical or academic subjects.

The impact of EWP on the students is manifested through their positive attitudes towards practical productive activities. They have taken part in various socially useful activities in their respective communities and have generated income to their respective schools. Through the practical activities students acquired skills that are useful in their everyday life.

Concerning their future prospects, students appear to have positive attitudes towards EWP programme. Most of them said they wanted to qualify as technicians and to continue their studies at university level so as to be qualified in professions such as teaching, medicine, engineering, agronomy, natural sciences, et.

Senior Secondary Schools

Based on the responses of school headteachers and students EWP conceptualization in the senior secondary schools can be described as follows:

- (EWP) translates classroom learning into practice;
- enables students to be productive so as to satisfy human needs;
- is important to attain a technologically developed society;
- means improving the methods of production and helping the society to utilize them;
- is important to get rid of backward and unscientific methods of production, and to increase production;
- helps to generate income for the school, the community and the individual;
- helps one to become self-reliant;
- provides one with basic knowledge and skills so that he will be able to acquire further training in the future;
- affords better job opportunity;
- gives the satisfaction of seeing tangible results (products) from efforts one makes;
- enhances the concept of Education for Productive Work and not for its own sake;
- prepares for future working life.

A few students saw EWP as something forced on them, a feeling that was reinforced by the shortage of teachers, the lack of shop facilities, materials and time (periods). Such students saw EWP as a waste of their time and energy. This opinion was especially prominent in rural schools where productive activities were pre-dominantly agricultural. These were seen as a duplication of what students were already involved in at home.

Some salient points cited as benefits of EWP were that EWP made learning practical, developed respect for labour, enabled one to go on to techni-

cal/vocational schools and prepared one for the world of work in adult life. However, a minority of students said they preferred academic subjects because their aim was to succeed in the school leaving certificate examinations and to proceed to university. They also thought that physical work was 'tiresome'.

Education with Production in the training domain

Technical and Vocational Schools

As it was indicated above a few technical and vocational training institutions had been established before 1974. Because of the low status given to technical and manual work the majority of the students used to join academic streams that produce an administrative and managerial elite. However, after the 1974 revolution, as indicated in the Ten-Year Perspective Plan, efforts were taken by the government to remove the traditional bias against craftsmanship and manual labour, and to remove economic constraints the country faced with regard to skilled manpower. Accordingly, training programmes were developed for a number of skill areas within the transitional curriculum, designed to generate a supply of middle level technical manpower.

The first stage of the strategy was to establish new Technical and Vocational Schools offering courses for three years after grade 10. These were to be distributed throughout the administrative regions so that it could be possible to supply skilled manpower for regional development activities. Current investment in technical and vocational education includes institutions focusing on particular sectors, as follows:

a. Building Construction Technology (Addis Ababa);
b. Agricultural Technology (Bure in Gojjam, Mersa in Wello, Dilla in Sidamo, Asbe Teferi in Hararge and Wolliso in Shewa);
c. Industrial Technology (Dire Dawa in Hararge, Addis Ababa, Nazareth in Shewa).

The objectives of technical and vocational schools (Curriculum Department, 1981) are:

- contribution to the development of a modern production system;
- expansion of knowledge of the processes and the means of production;
- the productive combination of theory and practice in the teaching-learning process;
- effective participation in the local economy during the process of learning.

All guidelines and directives cited earlier apply also to the technical and vocational institutions because they are part of the general educational system.

However, because production is central to each training centre the extent of implementation of the programmes may vary.

Based on interview responses and observations, the Technical and Vocational Schools have the following EWP programmes at their training centres:

- Agriculture: irrigation, crop production, agromechanics and tractor operation.
- Productive Technology: general mechanics, wood technology, automechanics, electricity and electronics.
- Construction technology: masonry, carpentry-joinery, welding, plumbing, plastering, and residential electrical installations.
- Home Economics: dressmaking, embroidery, food preservation, and home management.

Non-formal training programmes

The non-formal institutions covered by the survey fall into two groups. One group caters for post-literacy learners up to junior secondary level (7-8) of educational qualification, and the second caters for those who have completed secondary school and above. Each of the institutions, in turn, has its own stated objectives and guidelines for their attainment.

The peasantry is largely the beneficiary of the first group of institutions. The participants' role is to act as multipliers in their respective areas. Functional or work-oriented literacy projects were part of adult education in rural areas. These projects, according to UNESCO's definition, were understood to mean "any literacy operation conceived as a component part of economic and social development". The source cited lists down the following specific objectives of the projects: to integrate educational, social and economic activities so far as to achieve the overall development through the coordination of work with various public and private bodies, and to teach the illiterate majority of the population basic reading, writing and arithmetic, emphasising the current vocabularies of agricultural and industrial practices.

The non-formal training sectors included in this study are the Adult Skill Training Centre, the Multi-Purpose Peasant Training Centre, and special technical vocational training centres.

The Adult Skill Training Centres

These are found in most District Administrations of the Country. The directives and guidelines issued are too many to list down or deal with. But all are based on or are in accordance with policies and guidelines laid down by the Ethiopian National Democratic Revolution Programme (April 1976) and its clarification (september 1976); New Educational Objectives and Directives for Ethiopia

(November 1980), and Adult Education (March 1978). Most of these documents are referred to here and there in this paper.

The term 'centre' here is defined as a delivery point of knowledge and skills related to (a) productivity, (b) communal living, and (c) individual and family living, and incorporating necessary changes in attitudes. It should be instrumental in helping the communities develop and utilize local potential, human as well as material, to improve living conditions and to promote self-reliance and self-sufficiency. This could be broken down into the following specific objectives:

- to increase productivity in agriculture, industry and other fields, and thereby raise the standard of living of the peasants. The means of production, including farm implements, will be modified and improved for the betterment of the broad masses;
- to enable adults to acquire knowledge and skills so as to be able to participate effectively in the economic, social and political development of the country;
- to improve the existing occupational skills through technological innovation;
- to enable adults acquire and apply new skills;
- to provide skills training in support of rural public works programmes;
- to provide training to rural adolescents for self-employment in rural crafts;
- to improve and increase production;
- to provide basic education and further study.

Towards the attainment of the set objectives, the content of education and training consists of the following major areas. These are: political education; literacy; education in family living, guidance and health. In the vocational field the centres offer: woodwork, weaving, tannery, metalwork (blacksmithing), and agriculture.

The directives and guidelines issued over the years, lay down the responsible government organs for each of the above, the minimum desirable facilities that every training centre should have, and the source of instructors.

The Multi-Purpose Peasant Training Centre

Another non-formal training institution is the Multi-Purpose Peasant Training Centre at Agarfa in Bale Region, whose immediate beneficiaries are the peasantry. This is the first among several centres planned to cover the whole country. In the meantime it trains farmers from all the administrative regions.

The rationale for its establishment is summed up in a pamphlet from the Training Department, Ministry of Agriculture, 1987. The specific objectives of the centre are: to enable participants acquire specialised skills that correspond to the needs of their respective localities and enable them to be multipliers and help raise the level of productivity of their compatriots; to improve the living standards of the peasants through the provision of proven technologies which are suitable to the level of understanding of the peasantry; and to do away with the

exploitation of man by man through the organization and promotion of farmers' cooperatives.

Towards the attainment of these objectives, the courses offered at the centre include: agriculture, animal husbandry, operation and maintenance of farm implements (from small implements to tractors), cooperative management and accounting, construction of houses, roads and dams, production technology (woodwork, metalwork, pottery, weaving, etc.), and food technology.

Special technical vocational training institutions

Two other special training institutions in the non-formal education system covered by the survey are OICE (Opportunities in Industrial Craftsmanship, Ethiopia) and EELPA (Ethiopia Electric Lights and Power Authority Technical Training Institute).

OICE offers one year's training in marketable skills with objectives of securing immediate employment for the trainees and also meeting the country's need for skilled manpower. The training is steeped towards building trades and includes masonry, building, carpentry, plumbing and residential electrical installation system. The Ethiopian Electric Light and Power Authority (EELPA) Technical Training Institute is established to meet the Authority's needs for skilled technicians. It offers two year diploma programmes in mechanical operation and maintenance, and electrical wiring. Production of beds, tables, chairs and other furniture are strictly towards making the institution self-sufficient and not for sale outside.

In all the training institutions there are elements of education with production. The type, quality and debt of the programmes vary depending on the objectives, needs, and resource availability constraints of each institution.

Implementation of EWP programmes in the training domain

Technical and Vocational Schools

In line with the central guidelines and directives passed to the training centres, students in the Technical and Vocational Schools have accomplished various practical tasks under agriculture, productive technology, construction, and home economics.

The practical works done and the products resulting from these are too many to list down. The prominent ones are different types of furniture, repairs of vehicles and electrical appliances, production of handtools, construction of houses, interior decoration, residential wiring, welding jobs, production of different types of crops using modern machinery, dresses and model dresses, preserved food, childcare and home management articles, etc.

The type of technology used in the technical and vocational schools is generally modern and up-to-date. Some of these are handtools, lathe machines, latest machines in electronics, tractors, combine harvesters, drill machines, grinding machines, and welding machines.

Some cost-saving implements such as iron cutters, pipe benders are used enhancing the creativity of students. Other activities with a cost-saving effect are making body-work unit from wood instead of using soft metal in automechanics, and constructing external auto-ignition devices from bulbs by connecting wires.

To accomplish the EWP activities the training centres received their budget from the government (though this is said not to be adequate) and also from their internal income. Generally the yearly budget ranged from Birr 36,000.- to 70,000.-. As for income obtained, one school simply listed the sources of income as 'repair of automobiles, woodwork and metalwork products, and the repair of electronic devices'. A second school listed income generated from furniture production (Birr 122,500.-), textiles (Birr 32,500.-), and other sources (Birr 50,000.-). This concerned a school with a production unit attached, that served as a model. The idea was that after proper evaluation this arrangement would be duplicated in other schools as well. A third school reported an income of Birr 50,000.- which was the result of the sale of crops and the hiring out of tractors with students and teachers as operators.

Despite the efforts taken to implement the EWP directives and guidelines, there were problems cited by the respondents as well as observed by the study team. These problems vary according to the area of specialisation of the institutions, but they are listed together here. They include the shortage of raw materials and the inappropriate distribution of what was available; the inadequacy of the budget; delays in arrival of materials and equipment; the lack of qualified Ethiopian instructors; power problems.

Among the improvements suggested were: the introduction of a system for central distribution of raw materials, a short and long-term plan for the upgrading of teachers' qualifications, an increase of reference books, the reduction of current class sizes, the introduction of new courses (for example, animal and plant sciences, fishery, irrigation), an increased period allotment for practical activities, and the appointment of school administrators with technical qualification, who would promote technical education effectively.

Non-formal training centres

The following EWP activities were found to have been performed in the adult training centres that were surveyed:

- In woodwork: different types of furniture.
- In weaving: a variety of *shemma* (shawl of toga-like national top dress), rugs, woollen fabrics, dresses, bed covers, sweaters, etc.

- In metalwork: axes, ploughs, spears, sickles, and other farm implements;
- In agriculture: sugar cane, bananas, vegetables, cereals production, etc.;
- In handicrafts: ornamental items from horn and bamboo.

In all these productive activities the trainees use simple handtools, mostly made by local handcrafts or by the trainees themselves. Some improvisations observed include making carpets from raw wool, and producing a variety of dyes from types of soil and plants.

The budget for these training centres was based on local availability. It depend on contributions from government and from mass organizations at district level. For the surveyed centres, the average allocated budget for each was Birr 2,956.-. The income generated varied from Birr 1,720.- to 2,250.-. Between the years 1975-1985 the centres trained a total of 131,182 peasants (106,265 male and 24,917 female).

Although there appeared to be an encouraging achievement in the implementation of the directives, there were problems mentioned by heads of these training centres. These included the poor supply of raw materials, the inadequate budget from the government for payment to qualified trainers (resulting in high turn-over), a lack of sufficient land for agriculture, and the absence of a follow-up evaluation of the effectiveness of the programmes. Also the recruitment of candidates was not considered to be in accordance with criteria. The heads of the training centres recommended the establishment of a coordinated and centralized training system, the provision of a consistent supply of resources for effective training and production, and a move towards greater self-reliance of the centres.

The Agarfa Farmers' All-Purpose Training Centre was found to have the following training programmes: (a) agriculture and natural resources development, (b) co-operatives and farm management, (c) animal resources development, and (d) health and home economics. The farm was mostly mechanized and the 210 hectare of land was mainly used for demonstration purposes. This was a first centre for experimentation and the government had budgeted about 8 to 9 million Birr annually. The income from crops, vegetables, animals and animal by-products, and appropriate technology activities during 1985/86 was reported to be about Birr 2 million.

During the period 1983-1987 the centre trained a total of 10,328 farmers in six rounds; 4203 in agriculture, 223 in cooperatives, 2080 in animal husbandry, and 1822 in health.

The type of technology used was simple handtools and improved ones. Innovations such as using plough ox instead of the traditional two oxen were carried out and this was used with improved ploughs and other implements.

Since the trainees were farmers to begin with, they returned to their associations with the object of using the knowledge and skills they acquired at the centre to raise their productivity and that of their colleagues.

The OICE trainees constructed model houses, different forms of bricks, bell operation and bulb lighting from different spots, and announcers. They fitted bathroom fixtures, cut pipes, and fitted furniture. By way of innovation they have developed a model for drawing patterns on bricks. Hand and power tools were used in their training activities. The budget of the institute was to Birr 100,000.-; but it fluctuated depending on donors' generosity. To supplement this they sold products made in their carpentry shops for an average of Birr 6,000.- annually. The centre cited a problem concerning lack of placement opportunities at time of graduation of trainees, and it has suggested the necessity of co-ordination of employment demands and opportunities. Furthermore it indicated its future plan of introducing beekeeping, irrigation technology, livestock and poultry production in its EWP programmes.

The EELPA Technical Training Institute training programme (two years) was meant for the authority's own use. Practical work during training was carried out in the mechanical workshop and on actual installations. At the same time and incidental to their training they produced iron-frame beds, hinges, cross bars, electric stoves, locks, and window latches. These were for the sole use of the institute and the authority.

The technology used was modern and included diesel engines, lathe machines, welding, sheet metal and electrical technology. By way of innovation they had produced a hollow-block vibrator, a lawn-mower, a metal cutting machine, an electric stove and other items.

The impact of EWP in the training field

Based on the responses of directors, teachers and trainees, the Technical and Vocational School trainees appear to have positive attitude towards EWP. It was reported that EWP had developed trainees' creativity through the integration of theory and practice. EWP was seen as a practical education which produced productive citizens, and also served as a preparation for the world of work. Almost all trainees said that they preferred EWP rather than theory-oriented academic courses. The reasons they gave were that it translated theory into practice, made one productive at every educational level. It enabled them to see theoretical education transformed into tangible products and it also led to better job opportunities. Furthermore, the trainees pointed out that EWP served as a means of income generation for the training centres. Generally the enthusiasm and vigour observed among trainees engaged in productive activities further attested the sincerity of these statements.

Trainees in the Technical and Vocational school had wider views of their future, which they attributed to the benefit of EWP. They foresaw the possibility of immediate employment and the continuation of studies in their respective field

of specialization at a higher level to replace expatriate staff to meet the country's need for trained manpower.

In both the Adult Skills Training Centres and the Multi-Purpose Peasant Training Centre the conceptualization of EWP was expressed as follows: that the training they received mostly consisted of practical activities; that they appreciated this and were engaged enthusiastically in productive activities; and that they were eager to apply in life what they had learned at the training centres.

EWP conceptualization at the special training centres was similar to that of the trainees in Technical and Vocational Schools. The former understood that the skills and knowledge they acquired in their training were useful to them as individuals and to their respective communities. They appreciated and liked their training, and engaged in productive activities with enthusiasm. They were eager to see in practice what they learned in theory, and they visualized their training as a way of enabling them to be of better service to their communities.

Conclusions and recommendations

Conclusions

It has been indicated that the main objective of traditional Ethiopian education was to propagate religion. Its contents were theological which emphasized rote learning and memorization. This kind of education also delayed innovative activities. Modern education, which was introduced to the country in late 19th and early 20th centuries, was also aimed at producing administrative personnel and interpreters. The curriculum objectives and course contents of the modern education up to 1974 reflected elements of EWP, which were not implemented according to their expectations. Classroom learning was still academically oriented and emphasized the production of the white-collar workers. This situation compelled the government to embark upon educational reforms, and it launched a study in the form of an 'Education Sector Review'. This study came out with useful recommendations with regard to the EWP programme. Such useful ideas were not put into practice due to the socio-economic and political conditions of the country.

After 1974 there was a transformation in the educational system of the country. The government issued various directives, guidelines, decrees and other clarifications related to education, as it did in other development sectors. The general educational goals of the country became "Education for Production, for Scientific Research, and for Political Consciousness". This shows that at the national level the link between education and work received a prominent status. The importance of this link was stressed in various party, government and Ministry of Education documents. Based on these documents various EWP programmes were designed for the primary, secondary, technical and vocational schools and other training institutions.

In general the EWP programmes in the above mentioned educational and training institutions consisted of agriculture, productive technology and handicrafts, home economics and labour education. Under each of these programmes various activities took place. In the formal education system, students produced different horticultural products, furnitures, clothing items, decorative items, etc. In the Technical and Vocational Schools students produced a variety of materials differing according to their fields of specialization. Among these are found implements and other improvisations which saved the school a substantial amount of expenditure. Trainees in the non-formal education field produced various items and materials under agriculture, handicrafts and productive technology.

Besides the knowledge and skills gained by participating in the above activities, most of the students and trainees seemed to have developed positive attitudes towards EWP. But few have expressed their feeling (in the formal education) as having negative attitudes towards agriculture (rural schools) and labour education due to various reasons.

For the implementation of EWP programmes guidelines and directives were disseminated to schools and training institutions. In spite of these, various problems were identified that hindered successful implementation. These problems are summarised as follows:

In general education:

- in terms of material and financial resources: a lack of spare parts, adequate workshops, water supply and land for agriculture, power supply, and budgets; delays in arrival of materials and equipment;
- in terms of manpower: shortage of qualified teachers in the practical subjects; administrative personnel without technical qualification; a high teacher-student ratio (particularly in urban schools).
- in terms of conceptualization: poor understanding of EWP concepts and objectives by the community and some students, and little interest in putting them into practice;

In the training sector:

- in terms of relationship with the labour market: little attention to the placement of trainees after graduation; poor coordination between demand and supply of skilled manpower; a discrepancy in the contact between training institutions and employing agencies; lack of evaluation of the effectiveness of the programmes.
- in terms of selection: in the adult training centres recruitment of candidates is not in accordance with criteria; candidates selected are at varying educational levels.
- in terms of external support: insufficient cooperation of concerned government agencies, mass organizations, employing agencies.

Recommendations

In view of the findings and problems identified in this study the following recommendations are made:

1. When directives and guidelines are elaborated and objectives stated, the minimum desirable pre-conditions in terms of qualified staff, funding, tools and equipment, and supplies must be established and met.
2. Attention should be given to the skilled manpower demand and supply, and the education should be planned accordingly.
3. A strategy should be designed to eradicate the bias and prejudice against traditional artisanship. Manual labour should be seen as an important component of the education system. Therefore, all concerned government and non-government organisations should combine their efforts to change the attitude of students as well as parents. Furthermore, parents' and students' bias against agricultural activities should be changed through proper orientation, and agricultural programmes in schools should be improved in order to be more effective.
4. National examinations are based on theoretical learning alone. In the general education this would lead to more emphasis on academic subjects. Nevertheless students have indicated that they are interested in practical subjects. Ways and means of including practical assessment in the national examinations should be created.
5. With regard to training and employment, there should be coordination among various training institutions and employing agencies. Links should also be established between schools and production enterprises so that students can get acquainted with the production process and organisation.
6. The periods allocated to practical activities in EWP-related subjects must be increased.
7. More EWP courses should be introduced in schools or training institutions where they are relevant or appropriate.
8. Discrepancy is reported between level of training and the actual work in the special technical and vocational training sectors. Thus the period of training should either be shortened or trainees should be taken from lower grades in order to reduce wastage of financial and manpower resources.

Strategies for future studies

It is hoped that this summary of documentary analyses and limited field survey will give some insight into the status of Education with Production in Ethiopia under previous governments with regard to its policy, implementation and impact. However, in-depth and further studies such as the following are recommended for some of the issues raised.

1. A nation-wide study of EWP should be carried out at wider level in both the formal and non-formal education sectors, including government and non-government schools and training institutions. This study should include attention to the attitude of parents and the community in general towards EWP.
2. The match between skilled manpower output and employment opportunity should be investigated.
3. The duplication in the training functions of different institutions should be studied thoroughly.
4. There should be a comprehensive study to assess the adequacy of teachers in terms of number and qualifications and available facilities at all levels in both formal and non-formal training.
5. The status of agricultural education in the general education system as an EWP component needs to be looked in to.
6. The links between classroom learning/training and the world of work should be studied in detail.
7. The income-generating capacity of schools should be studied thoroughly.
8. A tracer study of trainees graduating from Technical and Vocational Schools and from non-formal training institutions should be conducted.

Notes

1. This article was completed in draft before the overthrow of the Mengistu government in Ethiopia in 1992. Efforts since that time to enable the authors to produce an update have not been successful due the many subsequent changes in the Ministry of Education. This article therefore does not review the most recent developments in the education system.

2. The objectives of 'Labour Education' are schematically presented in the Appendix.

3. Sources were mainly school heads.

Appendix

Schematic Presentation of Labour Education Programme

Positive Attitudes Towards Labour, Working People and Social Property Being Determined By:	Skills and Abilities	Habits	Character
Knowledge :			
Importance of work for social progress	to apply knowledge in practice	work according to plan	conscientiousness
Necessity of raising labour productivity	plan design organize carry out, control, evaluate work	keep tools and places clean	responsibility
Social demands on the future working	work cooperatively	start work on time	honesty
Position of working people towards means of production	work with high quality	handle tools and machines properly	reliability

Schematic Presentation of Labour Education Programme

Positive Attitudes Towards Labour, Working People and Social Property Being Determined By:	Skills and Abilities	Habits	Character
NEEDS :			
- to be productive - to do something useful - to work together with others - to be recognized by others - to be creative in work			
INTEREST :			
- in productive work - in science and technology			
EMOTIONS :			
- love of work - pleasure in working - self-confidence - respect for work and social property			

Part III

Education, training and production in Eastern Africa; towards a regional perspective

This last part in the book attempts to summarise the outcomes of the EPTA research programme. This is of necessity a hazardous undertaking in view of the limitations of the literature reviewed and information obtained. Yet the initial research was meant to look both backwards and forwards, and by exposing the limitations of current knowledge and making a tentative analysis of the issues involved it hopes to point the way towards further research effort.

Much of the attention during the last meetings of the EPTA network and the interaction between the editors was devoted to exploring the conceptual implications of the information gathered. It was clear that the great diversity of ways in which elements of education or training could be combined with elements of productive work needed a more refined conceptual framework that could recognize the different institutional formats of such arrangements and the traditions from which they had grown. It also needed to cater for the essential differences among forms of Education with Production and of Production with Education, and moreover between programmes of incorporating productive work in learning situations and those work-oriented activities that followed very different approaches, such as the inclusion of technical/vocational skills in general education. Even though many of the 'cells' thus obtained were barely filled in and would need much further analysis, it was thought to be important to lay out the framework and thus provide a sounder basis for a more differentiated approach to research on approaches to education or training and work.

This part first discusses the country papers and synthesizes its findings, and then introduces a new conceptual framework, which is regarded as an elaborated version of what was presented in Chapter 3 and formed the starting point for the research. The last chapter reviews some important conclusions and considers the more specific implications for further research.

A synthesis of current knowledge of EWP in the region

Donatus Komba

The scope and quality of the state-of-the-art reviews

This chapter takes a synoptic view of the four country state-of-the-art reviews presented in abridged versions in Part Two above. It attempts to draw general conclusions representing the main findings and thereby contribute to the general state of knowledge on EWP in the region. The findings relate to four areas, namely, (1) significant facts that seem to have structured the historical setting of EWP, (2) the characterisation of the post-independence EWP policy thrust and dynamics, (3) significant features of EWP practices as they emerge from quasi-descriptive accounts of various programmes and activities, and (4) significant value judgements about the present and future of EWP as distilled from evaluative literature surveyed in relation to the constraints and opportunities that the policy, institutional and resource bases offer in the countries of the region.

The general approach in this chapter is one of comparing and contrasting the four countries in terms of the nature of EWP environments and the way these act as supports or constraints, the theory (objectives and rationales) and practice of EWP, the problems, potential and trends of EWP programmes, and what could be done to better understand their contexts, content and process as a means to promote EWP in the region.

Before reviewing the content of the state-of-the-art reviews it is important at the very outset to refer to its scope and quality so as to provide parameters that would enable the reader to interpret or assess the content findings. This takes us back to the second chapter on the EPTA programme. There we noted that, whereas the intention was to review literature about EWP in the domains of general formal and non-formal education, formal and non-formal technical and vocational training, and workplaces, this review has not covered the context of workplace or production setting related to both wage-employment and, more particularly, self-employment. Almost all of its focus has been on the general education and the training domains of EWP. It appears that literature dealing with the interaction between learning and working on the production domain is relatively scarce. Thus there is a need to engage in more empirical research to bring out developments and issues in this third domain.

A further limitation is that the literature is superficial or silent on a number of aspects of EWP within the domains that have been scrutinised. Notably, there is only superficial information on EWP in formal basic education. This would not necessarily imply an absence of literature on important developments in this important level of education. Rather, it may be assumed that such literature has

been less visible and that much of it has escaped the reviewers' attention. Moreover, the reviews are rather silent on the *process* of EWP within institutions as well as on the *impact* of such programmes and activities on the clients, not only in terms of actual learning outcomes gained but also of entry into the labour market and productivity of the graduates in the world of work. It appears that in these areas there is a very clear absence of empirical literature in this region.

The historical context of EWP; factors of influence

A substantial part of the state-of-the-art review in each country was devoted to the analysis of the historical setting of the education and training systems. That succeeded in putting into relief historical factors which have shaped the current environment for EWP. The reviews show how the environments thus created have acted as constraints on EWP efforts in the various domains. Needless to say, some of the factors are country-specific while others cut across countries. In order of importance we shall look at the slave trade and slavery, colonialism and various forms of forced labour, as well as the colonial, racial and gender bias in the education and socio-economic system.

Slave trade and slavery

One of the factors that have shaped the EWP climate, especially in terms of creating negative attitudes towards work, is slave trade and slavery. Perhaps no other race was subjected to this phenomenon with as much intensity as the black people. It is no small matter for them to have been perceived for a stretch of time in history as saleable 'beasts of burden' to be whipped along into forced labour across the Atlantic and the Indian Ocean. The experiences of slavery of a racial magnitude have sunk deep into the seams of the peoples' psychology. Nobody has thus far unearthed and unpacked the full psychological impact of these experiences on the people and their culture.

There are only a few studies that have glimpsed at the cultural sedimentation of slave trade and slavery among the people. One of them is the JIPEMOYO psycho-cultural study of people of Bagamoyo, a place on the coast of mainland Tanzania from which slaves were shipped to the Far East through Zanzibar (Mbilinyi et al, 1983). Ironically, it was there too that the first formal school (consisting largely of an industrial and manual labour programme) in Tanzania was introduced by the Holy Ghost Fathers in 1863 to cater largely for emancipated slave captives (Malekela, 1990:2-3).

It is perhaps not accidental, therefore, that when colonial governments that followed the missionaries to Africa came to design an education system that would 'fit' the African. They took as a model the Tuskegee Institute in the United States of America, that had developed an industrial education believed to be most appropriate for blacks who had emerged from the bitterness of slavery (King,

1971). On the one hand, that was a recognition that slavery had a profound impact on the attitudes and outlook of black people towards manual work and that a special post-slavery Marshall Plan-type of mental and spiritual rehabilitation programme was called for. On the other hand, the recommendation for industrial education for black people was also a reflection of the long-standing racial prejudices that had justified slave trade and that subsequently re-surfaced and fed into the colonial perceptions of the intellectual powers of black people. For it was believed and defended, even in the name of scientific research findings, that blacks had an inferior brain capacity and that therefore what they could do best was non-intellectual work. Literary education was seen to be something more suitable for other races. These colonial views on the policies of education for black people re-echoed the Platonic pyramidal conception of educational structure that had for long informed the thinking in the West. It contributed to the inculcation of an inferiority complex among Africans, which is often regarded as one of the most serious consequences of colonialism (Nyerere, 1971).

Colonialism and continued forms of forced labour

In many ways colonialism was a continuation of forced labour, but in a milder form than slavery. It was abundantly clear that colonialists were in search of raw materials that were cheap. Much of this low cost was due to the cheap labour that produced them. These unequal relations of production became gradually systematised as part of an unjust International Economic Order that continues to this day (Van Rensburg, 1988).

The colonial administration had developed a mechanism to harness this cheap labour. The mechanism was force taking different forms. Africans clearly perceived and felt that force, whether applied directly or indirectly through taxation. In a way they became slaves labouring in their own countries. That was more evident where, as in Kenya, there was a strong colonial settler community that, having forcibly taken good land from the indigenous people, needed cheap African labour to work on it and pushed the colonial administration to apply force so as to ensure that this labour was provided.

Africans perceived this as one reason why both government and missionary education for Africans would not seriously aim at academic excellence enjoyed by schools for whites or Asians. Having failed to influence change in the perceptions of the governments and missionaries on this issue, some Africans resorted to establishing their own schools that would compete in academic excellence. Of course these 'independent schools', as they were called in Kenya, were not sufficient in number to change the colonial education structure. But they served as an expression of African resistance to a system of education based on a body of racial prejudices and perceptions that wanted to keep the black man down essentially as a beast of burden to run the colonial social and economic machinery. In that context of racial segregation literary education was seen by

Africans as a tool for liberation and industrial education as a tool for the perpetuation of racial subjugation and forced labour status. Thus access to literary education did not only have a significance as a vehicle towards prestigious jobs, but also as a symbolic reflection of improved self-esteem.

The colonial racial bias in education and socio-economic system

All the four countries under review underscore the fact that the systems of education that they inherited at independence, from an African perspective, were alien as these had killed and replaced the traditional or indigenous systems of education that had evolved in the African life settings. The new systems were designed essentially to serve the interests of those who brought it, and Africans had practically no power over their process and content. In this Tanzania was further disadvantaged because of the change in colonial masters (Germans first and then the British), who followed different educational policies. While Ethiopia had the shortest colonial history (six years of Italian fascist occupation), it had known a long period of feudal monarchy that established an equally alien model of education since 1908 and that had welcomed foreign missionaries. Thus the overall picture of Ethiopia in educational matters was not very different from elsewhere. Education served the feudal elite and foreigners and not the masses of people just as in Tanzania, Kenya and Zambia the colonial education did not serve Africans who were the indigenous majority and who bore the lions's share of educational costs. In the elitist and urban-oriented education system the parts that mattered were essentially academic or literary-oriented and were geared to adopt a few more intellectually able pupils who, using their minds rather than their hands, would assist in supervisory and administrative positions at the lower levels of the ruling machinery.

The reviews point out that the colonialist governments (and feudal monarchy in the case of Ethiopia) were the first to try and correct the shortcomings of the elitist system they had introduced relative to the indigenous systems they had killed or ignored. Thinking essentially of their own long-term colonial/feudal interests, they felt the need for diversifying educational provisions so that the mass of Africans would not develop expectations of being pulled out of their rural cultural and socio-economic setting and offered employment in the modern sector. They believed that the latter was possible by creating a different and separate education provision specifically for the indigenous people. This education should be vocational in the context of indigenous productive life. Literary education for the non-African population was maintained, along with all its promise of access to higher education within and even outside the country and to subsequent white-collar jobs. As noted above, experiments in education for black people in the USA were taken as models for colonial policies on vocationally relevant Native Education (King, 1971).

Colonial governments soon embarked on experimental education and training programmes for Africans, including primary education curricular reform by way of introducing arts and crafts, and agriculture. In Tanzania there was even an experiment (Malangali Experiment) undertaken by Mumfort in the early 1930s to combine elements of Western and indigenous education, which failed (Bude, 1985). Colonial governments encouraged missionaries to offer technical/vocational education to Africans through the promise of grants-in-aid if they did so. Indeed, several missionary groups responded. In fact, it was in line with missionary philosophy to build self-supporting mission stations. These needed technically trained persons to run them. Thus, colonialist and missionary thinking favoured the EWP orientation, leading to the experimentation with practical education for Africans in the four countries. But the model remained essentially elitist, leaving the majority without schooling at all, while adult education was by no means their focus. In this context these experiments faced African resistance and some of them actually failed.

In Kenya, as noted, Africans went further and developed a parallel system of literary education in which they had full control over the process and curricular content. These excelled academically and in the process 'forced' missionary and government schools to improve the quality of education offered to Africans.

It can be concluded that the historical circumstances under which EWP type of activities were introduced contributed much to the local resistance with which they were met. Thus later efforts by African scholars and government to set a new agenda for EWP faced the serious obstacle of conceptual constraints inherited from pre-independence period These constraints should not be underrated in their psychic and political impact on the African people.

Gender bias in colonial education

Some may argue that the above historical factors were amplified not only by the Platonic educational paradigm but also by the fact that colonial education had a strong male bias. The significance of this is that it reinforced the culturally determined division of labour among Africans in which men not only worked less than women but also did the less burdensome work (Nyerere, 1971). Accordingly, academically oriented education for the male population clearly strengthened the latter's negative attitudes to productive work. In colonial society the work that was associated with successful academic education was that related to management and administration rather than production. It is therefore plausible to argue that, if education had been given a female bias from its very start, it might have built up different attitudes to menial work (Mbilinyi *et al*, 1991).

Arguably, even with a discussion on the gender bias in education the list of factors that have influenced its development during the colonial period is not exhausted. Nevertheless the above discussion exemplifies well enough some of

the historical circumstances that made Africans take a different view on what education was good for them and, more specifically, on what type of education would be truly vocational in the colonial context. Thus what colonialists and missionaries defined as good education for Africans, even within the EWP orientation, was good from their own perspective and not necessarily that of the Africans. After all, as noted, the justification given was derogatory and reflected racial and colonial discrimination.

The EWP policy environment in the post-independence era

A substantial section of the state-of-the-art reviews was devoted by each country to the search for and subsequent analysis of EWP-oriented policies enacted by the post-independence governments. That involved spotting and reviewing documents of official policy of the ruling parties and/or governments. The assumption was that a country's policy framework was a very significant element of the environment supporting or constraining EWP efforts in that country.

A quick look at the literature in the four countries shows that each has some kind of policy in this regard. Differences arise only in the degree of its advocacy articulation, the comprehensiveness of its scope, the elaboration of rationales, the accompanying monitoring mechanisms and the organs instituted for this purpose, and the relative domain emphasis. It is also important to observe that the source and strength of the policy may lie at the national level, ministerial level or at the institutional level.

Each of the four countries has had a name for educational innovations in the area of EWP. For Tanzania it has been 'Education for Self-reliance' initiated in 1967 while for Ethiopia it was 'Education for Production' or 'General Polytechnical Education' initiated in 1975. For Kenya the innovations were part of the 'The 8-4-4 System of Education' launched in 1985, while in Zambia EWP was incorporated in the 'Educational Reform' launched in 1975.

All these names refer to the key policy documents of the parties or governments with the strongest advocacy. But an understanding of the policy dynamics requires reading many other documents that came before and/or after them. Indeed policies related to EWP have by no means been static. They have often been revised or refined in the light of practical experience in the process of their implementation. Special attention should therefore be given to implementation guidelines, directives or circulars, and evaluation reports based on practical knowledge of programmes in existence.

Analysis of the four country policies seems to suggest that the Tanzanian policy is perhaps the one most clearly articulated in philosophical terms. It offers an ideologic-political rationale, an educational/pedagogical rationale, and a social and economic rationale for EWP conceived as part and parcel of an overall

educational reform and not simply as an appendage to the colonial educational heritage. More importantly, the educational reform here was part of an even wider socio-economic reform of the country under the *ujamaa* ideology. Initially the scope of the implementation was restricted to formal education and training but later on, through several directives, it was extended to non-formal education and training in offices, industries and villages as it was brought under what was then the Ministry of National Education (now the Ministry of Education and Culture).

Similar to the Tanzanian policy was the Ethiopian policy. Though not as elaborate in its articulation as Education for Self-reliance, it was strong and pervasive, conceived as it was in the context of a Marxist-inspired socialist revolution in which the feudal socio-economic order was overthrown Education was conceived as an important tool in keeping the revolution alive by focusing on the creation of new socialist consciousness at the politico-ideological level, and imparting scientific and technological knowledge and skills for transforming both production and the relations of production.

Next on the line in terms of ideologically motivated educational policy for EWP was Zambia. The African socialist ideal there in the name of Zambian Humanism inspired the Educational Reform process in the mid 1970s. This too was a wide-ranging policy review touching almost all the aspects of education with a special emphasis on the introduction of practical subjects and Production Units in all learning institutions. As usual the implementation spark appeared first in the formal education sub-domain only to spread later on to non-formal education and training. There is little evidence to show that the policy for EWP reached the world of work.

Last but not least is Kenya. Here the 8-4-4 educational policy involves the integration of practical subjects (the arts, crafts and agriculture) in education. This was not done in the name of any advocated ideology other than what was implied in the *harambee* national spirit. The rationale was pragmatic, in political and in educational terms, in that the nation sought to impart a more practical and therefore more relevant education, especially for the majority of learners who could obtain neither further education nor wage-employment in the modern sector but would have to depend on self-employment. Such education should therefore contribute to the solution of the mounting youth unemployment the expansion of which could have grave social, economic and political consequences for the nation. The struggle is waged not only through institutions of formal education and training but even more successfully perhaps in non-formal and community-supported training institutions. The review has made only a cursory reference to the EWP activities related to workplaces in the modern sector.

In terms of the main thrust, all the policies admit to try and solve a fundamental contradiction of the colonial inherited system of education and the economy. For the colonial system was designed essentially to benefit those few learners who

would go on with further education and enter white-collar jobs. In that context the needs of the majority, who would be left behind, were not a basic determinant of the nature of education imparted. This was amply manifested in the massive unemployment of schooled youth for whom there were neither further education opportunities nor jobs in the modern sector, and in the massive illiteracy among the majority of youth and adults. The irony was that the costly education system was linked to the needs of so few, and to the manpower needs of so small a modern sector, which was by no means the most crucial in the economy when compared to rural sector that accounted (except in the Zambian copper economy) for the greater part of the country's earnings. Worse still, the modern (largely urban) sector hardly expanded while the general population and the school population in particular grew fast. Thus countries found themselves offering essentially an 'education for frustration' in relation to the economy and society, and to parents and the majority of the recipients themselves (Eliofoo, 1965).

While governments felt the need to change the nature of the inherited education system, they were strongly pushed politically to expand the defective system as it was, on the one hand to accommodate the needs of the Africans who had been neglected previously and on the other hand to meet the needs for middle-and high-level manpower. The end result was a rather confused course of events, which by and large led to the expansion of the system as it was with only some attempt at reforming the system. The latter involved an effort to link it to the rural (agricultural) sector of the economy to which the terminating majority of learners had to return. As we shall see, the reform efforts with an EWP orientation vacillated between supporting and undercutting the historically rooted negative popular perceptions and attitudes that were associated with the inherited colonial system.

Broadly conceived, the reform efforts involved in each country some or all of the following:

a. Efforts to integrate general education with basic skills training by introducing pre-vocational subjects throughout the formal school system. These involved practicals with limited production for pedagogical purposes.
b. Efforts to create a vocational component within an otherwise academic core curriculum. This came to be referred to as 'diversification' or 'vocationalization' of the curriculum.
c. Efforts to establish new technical or vocational schools (or expand existing ones) parallel to the academic schools.
d. Efforts to develop non-formal education and training institutions parallel to formal ones to reach those left outside the formal system.
e. Efforts to get workplaces to undertake or arrange for education/training of the workforce (in-service or on-the-job training).

f. Efforts to introduce productive work in learning institutions for enhancing education/training and/or for other benefits including income generation.

Broadly interpreted, all these efforts were attempts to ensure that the education system, as it was inherited, modified or recreated, would relate to the productive life that the majority of the learners would have to lead. While the last two actions outlined above can clearly be regarded to be EWP programmes, all the others listed above are such only in so far as they involved practical work which entailed some production to serve pedagogical purposes. In the light of this let us examine the EWP environment in each of the countries involved.

Tanzania

Immediately after independence the main thrust there was expanding the system in favour of catering for the African majority by pursuing free primary education. However, as the expansion began pre-vocational or vocational elements that colonial governments had begun to introduce as an approach to reform, were dropped. Specifically agriculture, arts and crafts were abolished in primary schools, and government trade schools were converted into technical schools having status similar to the academic schools. In other words, immediately after independence the governments went against colonial intentions but along with the African popular demand for academic or literary education similar to that enjoyed by children of European and Asian races.

But, as soon as the primary school leaver unemployment problem surfaced and raised political concern around 1965, and students in higher education refused to engage in compulsory National Service involving community development work in the villages, attention shifted first to the need to overhaul the entire formal system itself (using 'Education for Self-reliance' as a guide), and then to the need for creating the long-neglected non-formal education and training system parallel to the formal one.

Although the theory of 'Education for Self-reliance' would suggest curricular and examination change as a first step in the policy implementation, in practice school administration took the upper hand. This immensely affected the EWP dimension of the policy in the sense that the introduction of productive work in all learning institutions was carried out as an extra-curricular activity right from 1967. Curricular reform activity followed much later on in bits and pieces for different levels. The examination reform entered the scene from 1971.

In the non-formal field a number of initiatives were taken in the early 1970s. In addition to the launching the Unesco-sponsored Functional Literacy Project (1968) followed by a nation-wide Literacy Campaign, the Party emphasized the importance of Technical and Vocational Education for development (1973). This led in the same year to an Act that created the Small scale Industries Development Organisation (SIDO) to promote, as the name implies, the development of

small industries especially in rural areas where *ujamaa* villages were being created. This was followed by another act, the Vocational Training Act, in 1974 aiming at regulating vocational training for industrial development throughout the whole country. This led, among other things, to the creation of Vocational Training Centres under the Ministry of Labour and Manpower to cater for industries, Post-primary Technical Training Centres (to cater for primary school leavers) and Folk Development Colleges (to cater for villagers) under the Ministry of Education (1975). In 1974 the Party insisted on the full implementation of Education with Production in all learning institutions and imposed a two-year work-experience programme following National Service as a requirement for admission into tertiary institutions of learning. All this was meant to reverse what the policy of 'Education for Self-reliance' had criticised as an overly academic education in favour of the integration of education and training with production. One may note that all this created a conducive policy context for EWP.

Kenya

Like its Tanzanian counterpart, the post-independence government of Kenya started off by going along with the popular demand for more education in favour of the African majority who for long had suffered discrimination under colonialism. Accordingly, it abolished the Standard IV Examination, as this was seen to be a colonial device to hold Africans down the academic ladder. It also declared free primary education and scrapped off what was widely regarded as occupationally inferior industrial education in the form of subjects of carpentry and agriculture. This was later backed by the 1964 Education Commission recommendation for adopting general science and abolishing agriculture at the primary level. After all, with the explosion of the primary school population it was believed to be virtually impossible to meaningfully teach these pre-vocational subjects at that level.

However, as the primary school learners graduated in increasing numbers with no working skills and the young economy called for middle- and high-level manpower, the cry for primary reform began to be heard. To this the government, along with several NGOs, responded, first, by initiating the provision of skills in the context of non-formal institutions such as National Youth Service, Village Polytechnics (now called Youth Polytechnics) and Rural Training Centres.

Secondly, in the 1970s it decided to study the primary school curriculum in view of making it better respond to the needs of those majority of learners who would not be able to pursue further studies. In this the government took its time, receiving ideas from various quarters. First, it was strongly advised by the 1966 Kericho Education Conference and 1969 ILO Conference on Education to introduce vocational training after rather than within the primary academic curriculum. Secondly, the Report of the National Committee on Educational

Objectives and Policies of 1975 recommended the inclusion of cultural studies, agricultural sciences and pre-vocational studies into the curriculum.

However, the government initiated no change of the curriculum until as late as 1985 when it launched the 8-4-4 system of education. In this system the last two years of primary education received a strong practical orientation in the form of pre-vocational subjects of art, crafts, agriculture and home science. At the secondary level industrial arts, agriculture and home economics would feature prominently. These practical subjects would call for training activities in school workshops and around the school compounds. They signalled the seriousness of the government in orienting general education to preparing the learners for self-employment rather than to wage employment.

The third government response to the needs for vocational and technical skills was the upgrading of vocational schools in existence at independence into technical schools and the subsequent creation of many more, including quite a few at the post-secondary level. Under the 8-4-4 system these schools have become Technical Training Schools teaching both artisan courses (lasting from 6 months to 2 years) and craftsman courses (lasting 3-4 years).

The fourth response has been the call upon all industries to embark upon an in-service training scheme for their workers at the established Industrial Training Centres overseen by the Directorate of Industrial Training that is endowed with legal powers under the Industrial Training Act of 1971.

In doing all this the government has not required institutions to integrate education or training with productive work. But the review has revealed that, on sheer economic expedience and less on philosophical grounds, a number of non-formal training institutions have come to combine training with production. This is particularly so with those institutions whose life depends primarily on *harambee* forms of support rather than government or donor sources. The presence of production in these institutions also provides a work-like environment for more effective training.

Therefore, in Kenya the element of production is absent in the domain of general education and in the formal training institutions, but it is present in the non-formal training institutions. The presence of it in the latter settings is prompted by institutional needs rather than by directives from the top. This is the reverse of what occurred in Tanzania and Ethiopia, as in Kenya the idea was not to articulate a national policy in favour of EWP but to make it a reality that is willingly and meaningfully accepted and carried out lower down at the institutional level. Accordingly, it should be interesting to contrast EWP practice that develops in response to a national ideology against an EWP practice responding to institutional economic and pedagogical needs.

Zambia

The education reform efforts in the post-independence Zambia appeared in the mid-1970s. These revolved around the following. First, the introduction of pre-vocational or practical subjects in junior secondary and subsequently in upper primary schools. Second, the nation-wide introduction of Production Units in all learning institutions. This came under the presidential directive of 1975 and was later boosted up by the wide-ranging Education Reform policy of 1977, whose implementation was promoted by several directives. For example, in 1984 the president directed Teacher-Parents Associations (PTAs) to become cooperatives. It was envisaged that they would play an active role in securing loans to prop up self-reliance in schools. In the same year the president issued another directive on Preventive Maintenance of Physical Facilities in schools as part of cost-saving school work.

Third, the government established several Trades Training Institutes and a Technical College. Through the Ministry of Defence, the Department of Continuing Education and the Department of Youth Development it established non-formal institutions offering life skills training to both school leavers and adults. A good number of these were also production centres. Examples include multi-purpose cooperatives under the Zambian National Service and Skills Training Centres, Farmer Training Centres and Homecraft Centres. Only much later (in 1986) important EWP support structures were created. In the formal system this was done through the Self-Help Action Plan for Education (SHAPE), responsible for resource coordination and distribution, staff training, curriculum development, evaluation , monitoring and research to support EWP in learning institutions. There is also the National Youth Development Council to coordinate various training programmes for youth out of school.

Overall, the review reveals that Zambia has created an educational policy and institutional environment that is conducive to the promotion of EWP-oriented educational reforms. The extent to which the country has been able to mobilize and effectively utilize various resources towards a successful implementation of EWP has yet to be looked into. That is part of the problems connected with the creation of a viable resource base to see the programmes through.

Ethiopia

Looking at the spectrum of educational reform efforts presented above, the Ethiopian focus seemed to have been, first, in the integration of general education and training by introducing special technology-promoting courses at different levels. That is what is termed general polytechnical education with a strong emphasis on science and technology related to production processes as well as ideological education about the dynamics of the relations of production. Secondly, the focus was on the introduction of socially useful work in all learning

institutions to encourage a beneficial relationship between schools and community in terms of knowledge and skill exchange and in terms of mutual appreciation. This was given the name of 'Labour Education'. Thirdly, in an effort to democratise and universalise education to reach previously neglected masses, the government, with no parallel in the feudal past, developed a potent system of mass and work-oriented non-formal education (using the mass campaign strategy) and training parallel to the formal system. Fourthly, at the tertiary formal level existing technical institutions were expanded and some new ones created.

As one reads the various policy statements followed by directives and guidelines for implementation, on senses the existence of an ideologically charged political environment marked by what appears to be serious party-cum-government commitment for an EWP-oriented educational reform. The goals of the reform were clearly stated as the achievement of education for understanding and application of fundamentals and principles of production, for political consciousness and for scientific and technological investigation. The strategies, at least in the short-run, were broadly spelt out for the EWP to take off. However, as elsewhere, all this was underlain by a poverty of the human and non-human resource base to support the programmes and make them viable. After all the socialist revolution by itself did not overnight create resources that the country would need to implement all the proposed fundamental changes in education and indeed in the entire socio-economic structure.

Synthesis

An overview of the policy environments and their post-independence thrust and dynamics reveals that efforts to introduce practical skills and production in learning institutions has both a shaky and a firm anchorage point in the existing systems of education as governments seek to make them relevant for productive work life in the society. The initial anchorage point is the insistence on introducing practical subjects into the otherwise academic curricula and/or establishing, expanding or strengthening work-oriented vocational or technical training institutions, both formal and non-formal, running parallel to academic schools. This is rather shaky because, whereas it calls for practice to enhance learning, it does not necessarily call for production within institutions. At the very best, this may encourage the linkage of education or training institutions with workplaces willing to offer periodic work-experiences to learners. The second anchorage point, which is quite strong, lies in the effort that the governments and/or institutions themselves put on engaging learning institutions in actual productive work within the institution largely as a means to reduce institutional running costs and also for improving the effectiveness of training by using actual production as a training environment.

These two anchorage points are shared by the four countries. But Tanzania, Ethiopia and Zambia have put forward stronger advocacy for the second

anchorage point as they insist on learners/trainees having to be involved in real (as opposed to symbolic) productive work as they learn or train, giving politico-ideological rationales beyond the economic and pedagogical ones. Kenya's advocacy is for the first anchorage point, and its rationale is almost purely pedagogical. In both cases governments see their efforts as serious attempts to resolve contradictions in the inherited education systems in accordance with the current socio-economic and political demands.

Having been thus presented with the EWP policy environment, one should not forget to link this with the historical scenario discussed earlier. After all, post-independence policies began to unfold well before independence. They were initially responding to popular sentiments in favour of academic education, which had their roots in the colonial experience. However, in the sober moments of the late 1960s and early 1970s African governments began to have second thoughts and actually took up the educational reform with considerable advocacy as documented. Yet it should also be noted that there was clearly more interest in the vocationalization of education (i.e. Education with *Training*) than in the incorporation of productive work (Education with *Production*). Governments seem to have assumed that what all along might have acted as constraints to such reform would by then have disappeared. It is debatable whether this assumption was correct. There are certainly opinions that doubt the validity of this orientation. Philip Foster and later the World Bank, on different grounds, sounded bells of doom for efforts to vocationalise the formal academic curriculum. To this we should return later on.

At this point let us distil from the reviews just what programmes were established in the region as evidence of the advocated orientation towards production in educational reforms. An attempt is made to categorise them using the conceptual framework that guided the country reviews (see Chapter 3).

EWP in practice: the types and range of programmes

It is true that in Eastern Africa advocacy has tended to be more visible and better documented than practice. For, the researchers mostly came across literature about the advocacy or policy for EWP; there were very few writings on the process or practice of EWP. Consequently, the researchers had to carry out a limited state-of-practice review by interviewing key practitioners about their activities in some institutions of general education and training, both formal and non-formal. The training institutions were in such a wide variety that they deserve being listed down at this point:

Table 1: *Types of training institutions with production activities covered by the reviews*

Type of Training	Tanzania	Kenya	Zambia	Ethiopia
Formal Voc./Techn. Training	*Technical (secondary) Schools (TS)	*Tech. Training Inst.(TTI) *Harambee Inst. of Techno-logy (HIT) *Industrial Training Centres (ITC)	*Trades Training Institutes (TTI) Technical Secondary *Schools (TSS) Schools for Continuing Education (SCE)	*Trade Schls (TDS) *Techn. Schls (TES)
Patriotic and development training	*National Youth Service (NYS)	*National Youth Service (NYS)	*Zambia Youth Service (ZYS)	------
Non-formal training for out-of-school youth	*Skills Training Centres (STC) *Post-primary Tech.Centres (PPTCs) *Training-cum Production Centres (TCPCs)	*Youth Poly-technics (YP) *Christ. Ind. Training Centres (CITC) *Undugu Society of Kenya (USK)	*Skills Training Centres (STCs) *Home Craft Centres (HCs) *Multi-purpose Training Coops (MPTCs)	*Adult Skills Training Centres (ASTC) *Opportunities Industr. Centre (OIC)
Non-formal training for farmers/ villagers/ workers	*Folk Dev. Colleges (FDCs) *Farmers Training Wings (FTWs)	*Farmers Training Centres (FTCs) *Rural Training Centres (RTCs)	*Homecraft Centres (HCs) *Farm Institutes (FIs)	*Adult Skills Training Centres (ASTC) *Multipurpose Peasant Training Centres
Total	7	9	8	6

The range of EWP programmes

An EWP programme refers to a characteristic way or mode whereby learning and production are combined to serve different purposes. On the basis of this general definition the review has identified a variety of EWP programmes in the region. Some of these are found under different names in all four countries under review. These are 'practical or pre-vocational subjects' in primary and/or secondary schools (in so far as they involve production), 'training-cum-production' in non-formal institutions, and 'field attachment or work experience programmes' for some learning institutions. In each country there are also several formal training institutions that have established production units. Finally countries also share similar approaches to workers' education and functional literacy programmes, in which frequently the learning of adults is closely associated with ongoing work activities.

Other programmes are more country-specific in the sense that the political-ideological rationale, purpose, management-administrative structure, or patterns of access may be unique having emerged from special circumstances. These include the 'self-reliance projects' in education and training institutions as well as the Post-Primary Technical Centres in Tanzania, the 'labour education' programme in Ethiopia, the 'Harambee Institutes of Technology' in Kenya, and the 'Schools for Continuing Education' in Zambia. Also the 'national youth services', which are found in three countries, have in each case taken on a country-specific character.

As regards the nature of the production elements, the actual practice - in as far as this has been ascertained - does not differ significantly from one country to another. Production most commonly takes place on the school or training centre's premises and contacts with industry tends to be poorly developed. In schools activities are generally quite modest, with an emphasis on extra-curricular agricultural work. Production related to crafts - especially wood- and metalwork, and building - is common in formal and non-formal training centres and can reach an advanced level in vocationalised secondary (technical) schools. Work related to manufacturing using modern technologies or to the services sector is not common at the basic and intermediate levels of education and training. Girls, where enrolled, do participate in productive work, but apart from engaging in agricultural activities along with boys, their acquaintance with the world of work while learning still all too often follows traditional gender-specific lines.

The localisation of programmes

King's conceptual framework as presented earlier on suggests that the programmes could be located in three domains: the general education domain (E), the training domain (T), and the production domain (P). Assuming that this is possible, the question for the Eastern Africa region is: where can the various

programmes, identified by the review, be located (if at all) in the conceptual framework developed by King in Chapter 3 above?

For each country most of the different programmes discussed could fairly easily be classified within one of the three domains. The more specific EWP (or TWP) programmes, which have received most attention in the reviews, generally fit a label of being P1 in E or P2 in T. This also applies to major national programmes, such as 'Education for Self-reliance', as they take on different characteristics in the Education and Training domains.

However, the researchers have become aware of the problem that in this conceptual framework EWP programmes that seemed to have different mixes of E and P (such as Zambia's productive activities in Practical Subjects and the Production Units in the same school system) would all still be categorised as 'P1 in E' and thus be subjected to the same general statements about Education with Production. Similarly in Kenya the production work in the Harambee Institutes of Technology as well as that in the Technical Training Institutes would all be classified as P2 in T. Moreover, it was considered very problematic to place some programmes like the production in Industrial Training Centres or in the Harambee Institutes of Technology anywhere as they seem to straddle two different domains: Training and Production.

Thus we can say that, while the conceptual framework, deliberately global as it was, has helped greatly in identifying large clusters of programmes in Eastern Africa, there now appears to be a need to expand it further so as to show the variety of the programmes and the fluidity of their location both within and across the three domains. This will be attempted in the next Chapter. Here we shall move to the assessment of EWP programmes in the region. There is also need to sample the programmes in their variety and study them in depth so as to reveal their specific characteristics.

Assessment of EWP programmes: shortcomings, problems and opportunities

The reviews, albeit not in much detail, have pointed to shortcomings, problems and potential of the EWP programmes located in the various institutions that were covered. These will be discussed at three levels, namely, preparation and launching, the process and the outcomes.

Preparation and launching

The reviews revisited the process whereby the nations came to launch the EWP policies and some of the specific programmes. They point out the good things that were done, but also the problems and the lost opportunities. They comment on some of the assumptions that were made about the contexts of EWP programmes and whether reality may have proved them to be right or wrong.

Starting with the positive aspects, it is worth noting that in all four countries both the ruling parties and the governments showed high commitment to education as a tool for social and economic development. Though with differential emphasis, they viewed giving their education systems an EWP orientation as a reform approach. Their emphasis on self-reliance or self-help as a value in education formed a good basis for the launching the policy and programmes.

The top-down approach that was adopted created the need to explain the new policy to both implementers and the public. Although reportedly some efforts were made in this regard, in retrospect they were assessed to be inadequate, given the background of public opposition to the ideas. Policy-makers and administrators also conceded that not enough professional work had been done to operationalize the lofty ideas of the policies beyond the giving of implementation directives and guidelines. There are some indications that the policies today are either not well understood or not fully accepted or a combination of both.

Specifically, it was felt that not enough consultation was done with teachers as key actors at the grassroots level. This should have brought out the need to motivate and train them, to listen to them as well as to make them see the need to relate productive work with their classwork.

In this regard, the issue of curricular and examination reform, policy-makers pointed out, should have come as a priority over mere administrative introduction of productive work on the timetable of an institution of learning. Also only a few programmes have been based on thorough needs and resource assessments in the areas of implementation. Except in Ethiopia programmes were not pilot-tested before being launched nation-wide. Occasionally though, the pilot-testing of some curricular aspects of the policy came after the nation-wide launching. Experiments on the community school and on the teaching of agriculture as a science in primary schools in Tanzania seem to be good examples of this.

On whole, it was felt that the EWP policy formulation process and the planning of its implementation was somewhat defective. The good idea of self-help behind EWP, for example, should not have blinded those concerned from working out the minimum preconditions for policy implementation, especially in terms of required human and non-human resources. Also, too much seemed to have been assumed about preparing people for self-employment as opposed to wage-employment. The impression is given that it was seen as relatively easy when actually it is very complex.

The end-result has been the fact that many EWP programmes have been launched from the top, with inadequate resources and consultation from below, and without pre-established mechanisms for monitoring and administrative-technical support and, therefore, without clarity about how they would achieve the objectives set. It is only since late 1970s and early 1980s that corrective measures started to be taken. For example, governments began to set aside some resources for the programmes and establish coordination and monitoring mechanisms. The creation of SHAPE in Zambia in 1986 to coordinate resources,

training, professional support, and research, and to attend to curricular issues related to EWP, is one good example of those efforts. The formation in 1983 of the Small Industries Consultancy and Training Assistance (SICATA) in Tanzania (though not specifically in the context of EWP) could be another

Process

The reviews convey an impression about the general tendency of the process of EWP implementation in relation to the set goals. They do so by pointing out the broad features of the implementation efforts within institutions which handle general education and training. These include the way in which productive work relates to curriculum and examination; the way and extent to which various actors participate in the programmes; the proportion of theory to practice in the programmes; the management of the programmes including programme monitoring mechanisms; and the actors' perceptions, expectations and attitudes. Each of the above is assessed in terms of how it contributes to the integration of education or training with production for the achievement of pedagogical, socio-political and economic goals.

It is assumed that the curriculum and the assessment systems that govern an educational or training programme give focus to the efforts of learners and teachers in an institution. Consequently, the seriousness with which the introduction of productive work in them is taken will depend to a large extent on its relation to the curriculum and assessment mechanisms. The reviews characterise productive work in most cases as being extra-curricular or, at best, co-curricular. This means that it is an appendage to the principal activity of the institution and thus competes for attention and resources. It is logical in such a situation to expect a low value given to it. It is logical too to find the economic rationale taking an upper hand. Participation by both teachers and learners may be problematic, and the learning of knowledge and skills from the productive work may be negligible or absent. That is perhaps why some programmes have left production out altogether.

In Kenya, for example, the 8-4-4 programme stops at insisting on practicals based on the pre-vocational subjects which are examinable. However, in Tanzania some efforts had been made at overhauling the curriculum, but this came when productive work had grown roots in an extra-curricular context. Attempts to build work into the examination system as an item in character assessment component of continuous assessment have at best shifted productive work form an extra-curricular status to what one might call co-curricular status. In Zambia productive work has also largely been extra-curricular, while Ethiopia alone had attempted to pilot-test an EWP programme in 70 schools where productive work would have had a greater chance of being curricular. Generally, therefore, the maintenance of a strong examination-oriented academic curricula may have contributed to

negative attitudes and perceptions about productive work in learning institutions among local communities, learners (especially at lower levels) and teachers.

For the EWP to achieve its educational and social objectives, it was envisaged that the actors in the programme would be guided by the principle of democratic and active participation. The learners particularly were supposed to play a very active role in decisions affecting the entire process of projects from their conception through planning, management, evaluation and handling of output. Thus structures were to be created to facilitate such participation. The teachers and the school administrators would be facilitators in that context.

The reviews suggest that, although in schools democratic structures to facilitate learner involvement and participation were created, these did not function satisfactorily. For example, this was the case with a number of self-reliance committees in Tanzania and with Production Unit Committees in Zambia. Teachers or school principals were reported to have occasionally decided on behalf of, or to have over-ruled the decisions of the student committees especially in the use of revenue from productive work. This has been done despite clear ministerial guidelines and directives to the contrary. In the work process itself, however, teacher participation has reportedly been generally lower than expected. For learners participation is said to be high e.g. 80 percent in Tanzania. But it is not quite clear how this should be interpreted given the coercive nature of school rules. Perhaps gauging their attitudes during the participation might, if well measured, be more indicative of what may lie behind the high percentage of participation.

The reviews comment on the proportion of theory to practice in the EWP programmes in general education and in training. Where these were extra-curricular or co-curricular the practicals were expressed in terms of hours. These varied between 3 and 10 hours a week, increasing by the level in the education cycle. Where practicals referred to components of vocational or pre-vocational subjects they could take up to 60% of the subject time allocation on the timetable. However, the implementation fell short of this due to many factors including unavailability of well-qualified staff, rooms, facilities and equipment. These, in turn, reflect the failure of sponsors to meet the high cost of training programmes. Thus, notwithstanding the good intentions of governments to give their education and training systems a practical EWP orientation, in practice theory has still tended to dominate.

It is clear from the reviews that the quality of EWP programmes depends to a very large extent on their management. For it is that function which ensures that the elements and actors in the process are organized in a way that will enhance the achievement of the programme objectives. Success in this will depend on the competence (resulting from training and experience), resourcefulness of the man-

agement as well as the availability of resources to support it. In this regard training of school staff in the management of EWP programmes has been negligible, but evidence of efforts in that direction has been clearly demonstrated in Tanzania and Zambia. The latter in particular has created a decentralized training system under SHAPE referred to above. At the level of vocational training programmes Kenya, Tanzania and Zambia have created legally backed institutions for coordination such as the Directorate of Industrial Training, the National Vocational Training Council and the National Youth Development Council respectively. All these function at the national level.

However, the institutional managerial challenges were reported to be great. In Kenya, for example, production units in Harambee Institutes of Technology sometimes fell under a quasi-autonomous division separate from that of training. This sometimes created problems of coordination and collaboration between the two divisions in an attempt to ensure that learners benefit from the presence of the production unit in terms of training and not merely economically. It was reported that a conflict of roles (training versus production) did arise and was sometimes resolved in favour of the latter depending on the economic situation of the moment. For example, trainees could sometimes be made to work on contract for a considerable length of time without any supervision from their trainers. Whereas this benefitted the institution in economic terms, it may not have been as beneficial in terms of training. Another manifestation of the challenge was when the management was tempted, for reasons of efficiency, not to involve students in some of stages the production process (e.g. the inception or the marketing stage) and so deny them the opportunity of learning to make risk-taking decisions so crucial in the success of a work process. Examples of this phenomenon have been noted in Tanzania and Zambia.

Apart from problems which may arise in intra-institutional arrangements of Education with Production, there were other situations where work-experience was sought through field attachment of learners to workplaces outside the learning institution. It was reported that it was not always easy to secure the cooperation of workplaces, as many found it inconveniencing to accommodate the needs of institutions for meaningful work-experiences. Such situation often required much persuasive tact on the part of the educational management. It seems that the creation of Production Units within learning institutions could in some cases be explained by the failure to enlist the cooperation of nearby workplaces to help in the pre-work training of their future labour force. It is possible that some legislation could help, for example by requiring workplaces to accept regular attachments. Such move would follow the example of the Employment Training Levy for industries in Kenya which is enforced by government.

One of the major reasons for the launching of EWP programmes was to shift the perceptions, expectations and attitudes of learners, teachers and the public at large about education. The shift for the learners was expected to last beyond the period

of schooling to the real work-world. Concerning this aspect there have been very few studies that attempted to assess the impact of the programmes on learners while in school. The impression is given that there has been a change of attitude over the years from negative to positive but that such a change was more evident at higher levels than at the lower levels of the system and of the general public. Where the change was reported, its interpretation is ambivalent. For example, one cannot ascertain whether a change was due to the EWP orientation of the programmes or to the economic recession that most developing countries are facing and the resulting contraction of the labour market. In such situation, much as the learners and the public would wish for further education and subsequent wage-employment, increasingly the economic odds have been against them and a point was reached where one was forced to face the stark reality of self-employment as the only realistic alternative.

On the other hand, as said earlier, the system is still academic in its general orientation and as such will continue to encourage negative attitudes towards EWP programmes. Thus negative attitudes not irrational in the context of an education system that, rhetoric apart, still helps the few who are selected for further education and therefore for competing for the few job openings in the modern sector. The logic of the competition is such that everybody tries his/her luck, knowing very well that few will finally make it.

Outcomes

The shortcomings, problems and potential of the EWP programmes are better revealed in the evaluation of their outcomes. According to the objectives of the programmes one could group the outcomes into educational, social/communal and economic. These can be discussed within the context of the education/training period as well as beyond that period (in life). As one may expect, more has been said about intra-institutional outcomes than in-life outcomes.

Educational outcomes include knowledge, skills and values learned. The reviews report lack of effective educational assessment mechanisms for EWP projects especially those in general education settings. The only serious attempt to come up with an assessment mechanism has been Tanzania's continuous assessment which partly focused on the learners' participation in self-reliance activities. Pre-vocational and vocational education programmes are still assessed through more conventional approaches, i.e. through examination with a theoretical and a practical part. Here production as such is not assessed. It is assumed that the educational value of production, if any, should be reflected in the quality of academic education or training related to it. Thus the learning of work values is ignored.

For EWP programmes in the Training domain conventional examinations including Trade Tests are used. Again, if anything, production is only indirectly assessed. Institutions were also reported to set their own examinations to test the

performance of their learners. But by and large these resembled the Trade Tests. Non-formal training institutions not preparing for Trade Tests, only issue certificates of attendance. But it was reported that even these were very busy formalizing their assessments in favour of standard examinations. Apart from these in-school measures there is scanty evaluative research.

For what these measures are worth, what do these reveal about the educational outcomes of EWP programmes? The general conclusions point to the deficiencies referred to in the discussion of the process of production. That is, in relation to skills not much is learned, particularly in the E-domain programmes where production is extra-curricular. It is more likely that skills are picked up in T-domain programmes because of in-built practicals, which, as in the case of Kenya, may not necessarily be related to production. The outcomes here will have been undermined by the many problems affecting the quality and number of the practicals conducted, including shortage of rooms, qualified staff, equipment and facilities. Some values such as teamwork and appreciation of working with hands and brain were, however, reported to have been learned over time. But how far this leads to a significant shift in the perceptions and attitudes of the learners in favour of self-employment remains to be better evaluated as earlier noted.

In general terms it is revealed that the shortcomings of a number of EWP programmes seem to relate to the fact that they have been either too narrow or too wide. That is, the critique levelled against training institutions is that they tend to be too vocational. What is required of them is to be broader by incorporating more general education and even production elements in their curriculum. This is the case, for example, with many non-formal training institutions in Kenya. On the other hand, the critique against E-domain programmes calls for them to incorporate elements of training and production or, where these exist, to expand their scope. Similarly, production settings are encouraged to incorporate training and education elements in order to improve. So, one could say that, with the introduction of EWP programmes, the education systems have been given a very visible practical and production orientation that did not exist before. The in-school educational benefits are not yet that visible if for nothing else than for lack of appropriate measures to gauge them.

Little has been done to systematically assess the social or communal outcomes of EWP programmes so far. Positive outcomes here would constitute evidence of educational institutions' efforts to cater for the majority of students who will not proceed to further formal learning. They could include the following: for learners to be sensitive to the learning of work values and the need for a give-and-take relationship with communities around; to develop sensitivity to the increasing costs of their education/training when the capacities of peasants to cost-share are almost reaching their limits; to live the spirit of self-reliance or Harambee that

in the first place made the very establishment of their institutions possible; and to develop a sense of realism about the future awaiting them. This would certainly make learning institutions a very different context from one where each learner was working for an examination and expected through it to get a job. It is a place where now the idea of self-employment, even in agriculture, is not only conceivable but even the very *raison d'etre* of the educational/training establishment. This in itself is of immense significance in the whole question of building a viable, socially coherent and economically viable community.

The move to introduce in-school productive work on a larger than symbolic scale has for the first time changed the perception of the student population as being a productive resource only in the future, after graduation. In the reviews there is only anecdotal evidence that even while learning the youthful energies of nations could be harnessed and put to productive work. But the productivity of in-school work has yet to be thoroughly assessed before we can say that it could substantially alleviates the burden of the escalating educational and training costs that the poor peasant must carry. Also there is no evidence as yet that by working as they learn their learning is necessarily of less quality than if they were not. If anything, the problem lies squarely in the extra-curricular character of the work in school which produces an unnecessary conflict for learners as they are pulled into two opposing directions. It is perhaps because of this that the reviews point to the predominance of the economic motive behind the pursuit of EWP policy. This is clearly the case in Tanzania, Zambia and Ethiopia. This is seen as a shortcoming because the intention was to achieve educational, social and economic objectives in an integrated fashion.

There is also some indication that the extra-curricular nature of productive work has contributed to its low status in schools. It is not surprising that the achievement of economic self-reliance for the institutions is at a very low point indeed. In Tanzania one is talking of just 10 percent instead of the intended 25 percent of the catering bill in boarding schools. In Ethiopia mention is made of school annual revenues in the range of Birr 450.- - 3733.- on average. But these statistics need some qualification in the sense that they fail to report on both revenue and costs at the same time. This renders their interpretation ambivalent. Of course it is also noteworthy that not all outcomes are easily measurable, and that there are many factors other than the extra-curricular nature of the programmes which contribute to the unsatisfactory economic outcome. These include inadequate resource base, failure to get or tap local markets, lack of incentives and training for teachers and the lack of strong supportive institutions for the school and the graduates when they are out of school.

Apart from these generalizations there are cases in each country where institutions are approaching economic self-reliance. In Tanzania there are institutions that produce more than the required 25 percent of the catering bill. Actually some of the PPTCs in that country would not exist were it not for their high level of economic self-reliance. In Ethiopia there were schools which

generated about Birr 100,000.- in a year. In Kenya there are HITs and RTCs that are to a good extent self-reliant. The same is true for quite a few PUs in Zambia after the introduction of school cooperatives. All this does point to the great potential that exists in this area at the level of the school.

In many ways the school is considered to be an artificial setting to which the school community accommodates itself as long as it is there, knowing pretty well that life out there is totally different. Now the EWP programmes have been attempting to change that artificiality of the school, and we have just presented what the reviews reveal as their impact at school level. But the real test of EWP must lie in the challenges posed by real life beyond the school.

One of the greatest challenges that was a motivating force behind the launching of the EWP-oriented educational reform in the region was the ideal of self-employment for the large mass of learners for whom basic education was terminal. This goal, one would expect, should make the EWP programmes of the region different from those in the West where the emphasis seems to be on the transition from school to the labour market (wage-employment). After all, the economies of the region largely depend on agriculture undertaken by self-employed peasantry. While there is considerable experience in preparing youth for wage-employment in the formal sector of the economy, this is not the case with self-employment especially in the non-formal and informal sectors of the economy (Hoppers, 1986). This perhaps explains why institutions which try to prepare for self-employment are fast formalizing. This can be interpreted to mean that they are finding self-employment to be too elusive a goal to pursue, and wage-employment, however competitive, to be much more manageable. Actually even work-experience programmes are not self-employment experiences and in that sense they may not be directly relevant. Indeed, in these countries there is only a very poor self-employment support infrastructure. One may talk of a school preparing learners for village life. But upon detailed analysis one may find that actually the term 'village' is more often than not empty because no viable organizational structure is in place to which the learner may meaningfully relate. So, until governments seriously invest in the creation of rural infrastructures education and training for self-employment may be a nebulous concept.

However, the reviews point to some evidence of efforts on the part of institutions to structure their education and training in view of self-employment. One element here is the stress on skill mastery based on learners' exposure to practicals. Secondly, there is the use of local materials during training to ensure greater continuity between the school setting and real life. Thirdly, the existence occasionally of an institutional tool acquisition policy that takes different forms remarkable among which is the emphasis on tool-making and tool repair (as opposed to mere tool use) during training noticeable, for example, in some PPTCs in Tanzania. The other is the provision of a tool-kit or capital to buy tool-kits upon graduation. Fourthly, the encouragement of the formation of youth

groups, associations or cooperatives while in school which continue beyond graduation. These act as a bridge between the training institution and the self-employment world and remain under the support and guidance of the institution. A good example of this is UMALE, an alumni association formed under the guidance of the Leguruki Vocational Training School in Arusha, Tanzania. The School Cooperatives in Zambia created out of Parents-Teacher Associations could easily be modified to include alumni and perform a guidance and counselling function.

At the national level The Small Industries Consultancy and Training Assistance (SICATA) in Tanzania was a small but excellent example of a government-created institution to give guidance and counselling and training to young entrepreneurs embracing self-employment (Semboja et al, 1985). The need for an institution of this kind has also been voiced in the context of Zambia. Indeed both Ethiopia and Zambia have come to the realization that it is more expensive to settle graduates than to train them!

Conclusions: EWP trends and potential

Within their present restriction to the domains of general education and training, the reviews make it clear that the EWP programmes are tied to, and form an essential part of the national educational (and sometimes social) reforms. Within each country EWP operates at two levels, curricular and extra-curricular or co-curricular. It is notable that when production is curricular - and this usually occurs in the T-domain rather than E-domain - it tends to serve a narrow pedagogical (training) purpose at the expense of being economically viable. When it is extra-curricular - and this equally valid in the E-domain and in the T-domain - it serves an economic purpose but invariably results in poor motivation of clients who see no relation of it to the examination requirements. Occasionally the clients are exposed to two types of productive work, one curricular and the other extra-curricular to get around this problems. How far this succeeds one does not know from research evidence. But examples of the three approaches exist as we assess the trends in each country.

With regard to Kenya we have noted that in formal institutions of education or training EWP takes the form of practicals that are not necessarily productive but are curriculum-based. However, in non-formal training institutions production features rather prominently and often relates to training offered. The Kenyan reviewers predict that, given the rising cost of education and training as the peasant is being brought to the very limits of feasible cost-sharing, production is very likely to become strengthened in those settings and to creep into the formal settings as well. After all, only recently have Harambee Institutes of Technology (HITS), known for their production component, been brought under the budgetary umbrella of the Ministry of Education. It is conceivable that the EWP now going

on at the institutional level may later receive an official policy backing that, in a sense, is already implicit in Kenya's Harambee orientation.

Tanzania has had its Education for Self-reliance for over twenty years now. The notable trend here is the attempt to raise the status of self-reliance projects from being extra-curricular to curricular. For the primary cycle the climax should have been the adoption of the long-experimented 'community school' by 1982 but unfortunately it was silently abandoned without known justification in favour of the subject of agriculture that has been well experimented under the Polytechnical Education Support Programme (PESP) (Komba and Mbunda, 1992). For the secondary level the climax should have been the adoption of the diversified and vocationalised curriculum in the late 1970s. However, in both cases examination reform did not fully respond to the demands of terminality of education or training. As a result the self-reliance projects did not take on any significant curricular status beyond their negligible reflection in what is known as character component of Continuous Assessment So, unlike in Kenya, in Tanzania production features prominently, in an extra-curricular format, in all formal education and training domains. Emerging ideas about having two types of examination, one for selection and another for terminality, if taken up after appropriate consultation with teachers and other implementers, may very likely boost up the EWP orientation even further within the formal system (Idama, 1987).

In the non-formal sector the formalising tendency is as strong as it is in Kenya, given the elusiveness of the goal of self-employment and given the tendency of the programmes to cater for an increasing number of school-leavers rather than the initially intended out-of-school youth and peasants. But as governments and NGOs create institutions and mechanisms supportive to the self-employment of youth, things may change for the better. Efforts will have to be made though to give the programme a rural orientation instead of the present urban bias.

The situation in Zambia is rather similar to that in Tanzania. While practical subjects have been put into the curriculum of a good number of schools (especially upper primary and junior secondary), the Production Units are an established feature in most formal learning institutions albeit essentially with an extra-curricular status. The creation of SHAPE is a healthy development as it is an attempt to address the whole development and delivery system of EWP, including curriculum development, training, research, evaluation and coordination of support. The creation of School Cooperatives has also gone a long way towards enabling schools to secure needed loans from local financial institutions. There is still the problem of coordination of EWP institutions and programmes as noted at the EWP seminar in 1988 (SHAPE Secretariat, 1988).

What is impressive about EWP in Zambia is the existence of an EWP-support infra-structure geared towards dealing with the various problems facing EWP policy implementation. With them around and functioning, the EWP programme should be well on course. However, on the process side, the big challenge is how to ensure that EWP tends to achieve the educational, social/communal and economic objectives set for it. This should counteract the trend so conspicuous here as in Tanzania of focusing on the economic objectives at the expense of others. This is particularly important in formal institutions whose fundamental mission is educational.

In Ethiopia EWP has a dual orientation too. One is in the name of Labour Education that has a meaning similar to the self-reliance activities in Tanzania. It is extra-curricular. As such it is based essentially on the social and economic rationale. The other is General Polytechnical Education which calls for the integration of education/training at the level of the learners' ability to know and apply principles of science and technology in production process. Here EWP seems to be conceived out of concern over education for scientific and technological change as the country enters the 21st century. It was reported at the time of the study that this was under experimentation in 70 schools. Thus here, as perhaps nowhere else, there was good chance for production to have a full curricular status. Whether Labour Education would merge into the General Polytechnical Education curriculum or remain extra-curricular as now, one could not really tell. All seemed to depend on the nature of force that would be decisive in shaping the education reform. But as this book is being finalized Ethiopia is no longer socialist in orientation and the non-marxist government is in the process of initiating far-reaching reforms in all sectors of the socio-economic structure.

If at this juncture one takes an overall view of the EWP momentum in the region, three practical problems or issues seem to have been the driving forces behind it. One was the idea that EWP of some form or other was the way to transform the inherited school curriculum, making it sensitive to the basic learning and working needs of the terminating majority instead of the continuing few. This was to solve the politically vexing problem of growing unemployment among school youth accompanied by a rural exodus and urban influx (Ishumi, 1984). This idea was well articulated in Tanzania and Kenya.

The second force has been the idea of involving as far as possible the school community in cost-sharing, in the light of soaring costs of education and training that clearly cannot be all borne by the poor peasant-and-her/his-hoe. By this method there is greater chance that educational opportunities will reach more people as economies stagnate, decline or even collapse. This is clearly articulated in Tanzania and Zambia.

The third force has been the serious concern over how to prepare people to live meaningfully in the awakening twenty-first century revolution in science and

technology. It is felt that the gap in living standards between the First and Third world will be immense unless something is now done through education and training to empower people with the basics of science and technology which, in turn, should make their work both easier and more productive. This idea was more clearly pronounced by Ethiopia as a socialist state as it focused on polytechnical education.

Clearly the three forces are complementary stimuli of on educational reform with an EWP orientation. Will EWP in its current forms deliver the goods of empowering people with self-employment skills and the needed basics in science and technology as well as significantly contributing to cost-sharing? This indeed are great challenges worth our serious consideration.

In view of the identified curricular and extracurricular foci and the three motive forces for EWP in the region one can say that the potential of EWP seems to lie in finding and/or strengthening the curricular basis which, in turn, should be an answer to the local basic science and technology learning needs for self-employment of school-terminating majority. This will necessarily call for a more thorough understanding of the curricular and, therefore, examination status of productive work in learning institutions on the one hand and the self-employment needs assessment in the non-formal and informal sectors of the economy, on the other.

Towards an expanded conceptual framework for Education with Production

Wim Hoppers and Donatus Komba

Based on the experiences and outcomes of the state-of-the-art reviews that were carried out by members of the EPTA network it has become necessary to revisit the initial conceptual framework that was used as a basis for the studies. In this chapter the provisional outcome of this intellectual journey will be outlined. It is imperative to state at the outset that this outline is still rather rudimentary and that it may be elaborated further as more empirical studies will be carried out.

A key point to note here once again is that the emphasis in the studies has thus far been by and large on the combination of learning and working within the general education context (i.e. '*education* with production') and to a minor extent also on working directly combined with vocational training (i.e. '*training* with production'). Thus we have not been in a position to draw meaningful conclusions with regard to combinations within the work context, i.e. '*production* with education or training'. Nevertheless, in this chapter we shall consider the usefu ness for an expanded conceptual framework that, as in Chapter 3, will also claim to have relevance for those other combinations of learning and working which have not been much touched upon. Therefore, even if at this point it will not be possible to comment on such relevance, we hope that a wider conceptual frame will constitute a useful reference point for further work in those areas.

The initial approach

When the EPTA programme was initiated in 1985 efforts were made to review what was known then of the theory and practice of combining elements of learning and working. At that time a very useful framework for further research was developed on the basis of the original discussions during a symposium in The Hague, which was attended by scholars from different parts of the world. The framework has already been presented by King in Chapter 2 above.

Essentially that framework started from a recognition of the existence of three different domains or environments: Education (E). Training (T), and Production (P). Each was assumed to have its own characteristics and typical sets of activities. EWP was taken to mean the effort to insert elements of one or two domains into another, such that in each case production was always involved. It was assumed that EWP within each domain was quite different in terms of its rationale and characteristic features so that one could not be a substitute for the other. It was believed that the elements being incorporated in a domain underwent substantial transformation in the face of the specific social relations and institutional character of the domain.

"Thus, production-in-schools is fundamentally different from industrial production... Training-in-schools (T1) tends to have much more in common with schools than training in regular training institutions (T2) or again in training-in-industry (T3)....The implication of this rather basic observation...is [for example] *that T1, T2 and T3 are not substitutes for each other. They are all very context specific..*"(King, Chapter above, p. 48-49).

The experience of the execution of the four state-of-the-art reviews together with the analysis of EWP programmes in various traditions and settings the world over (see Chapter 1) led members of the EPTA network to realize the limitations of that conceptual framework and hence the need for its further elaboration and qualification.

Specifically it has been first realized that the framework did not help EPTA researchers sufficiently to understand the variations of combining education, training and production, particularly in situations where production elements were kept separate from education or training curricula. Thus, within individual domains the combinations could take different formats, with quite different consequences. Secondly, it did not help them to understand the dynamics over time of developments in EWP and shifts in its nature and focus within the context of institutional or system adjustments, something which was much in evidence in social reality. Thirdly, because of its rough division into three separate domains, it did not seem to take cognizance of the fact that education and training together belong to one bigger world of 'learning', which by itself was essentially different from the world of 'working'.

Fourthly and more fundamentally, the framework was based on an equation between domains (in King's Chapter also referred to as 'modes', 'worlds', 'spheres'), which basically referred to types of human activities with a similar purpose, on the one hand and actual institutional formats given to those activities on the other hand. This led to an assumption that the domains' (or in actual fact institutional) boundaries were fixed and that, given current Western institutional practices, programmes could only firmly belong to one of those domains and not, for example, straddle two domains. In such context elements from other domains were easily regarded only as 'foreign bodies' which became transformed in the process of infusion.

A revised conceptual framework

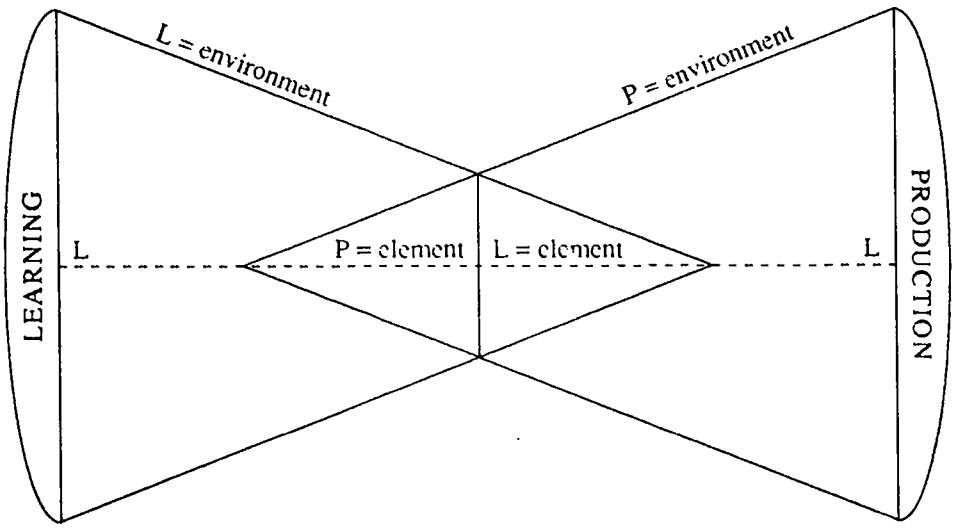
The reviews show the importance of conceptually distinguishing two broad areas of human action: that related to 'learning' (L) and that related to 'working' or 'producing' (P). The former is concerned with activities undertaken with the explicit intention of developing knowledge, skills and attitudes. The latter is concerned with activities aimed at producing or distributing goods or services that have economic or social value. Where the specific term 'production' is used, it

is meant to cover this broad range of work activities and to include all aspects of those activities, including planning, designing and marketing.

It is furthermore recognised that within the area of learning a distinction can be made between 'education' (E) and 'training' (T), whereby education refers to activities aimed at acquiring general or theoretical knowledge and skills, and training refers to the acquisition of occupational or job-related skills and technologies. But whether the intended outcomes are general or job-specific, theoretical or practical, they remain variants of the same activity (learning) and are thus fundamentally different from outcomes associated with production (P). Thus if E, T, and P are regarded as 'domains' any conceptual framework would need to bear in mind that the relation between E and T are of a different order than that between E/T on the one hand and P on the other.

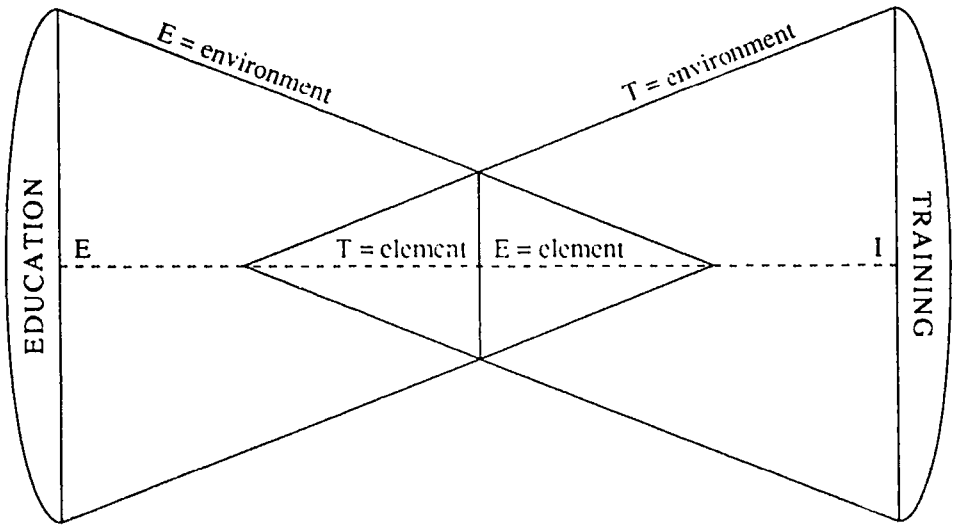
Another important conceptual ingredient for understanding Education with Production can be the notion of a 'continuum' whereby the territories of learning and production begin as distinct spheres but get fused into one another as they conjoin. A similar continuum can be constructed within the sphere of learning, between education and training. This means that for each domain there is a stretch on a continuum between them where one absorbs the other domain within itself and another stretch where it is absorbed by the other. It is a situation of partial mutual penetration. In other words, each domain exists in three modes on such continuum: an environment *by* itself, an environment *for* the other, and as an element *of* the other. Diagram 1 below illustrates this situation for the continuum between learning and production.

Diagram 1: *A continuum of learning and production*



A continuum between education and training can be depicted as in Diagram 2 below.

Diagram 2: *A continuum of education and training*



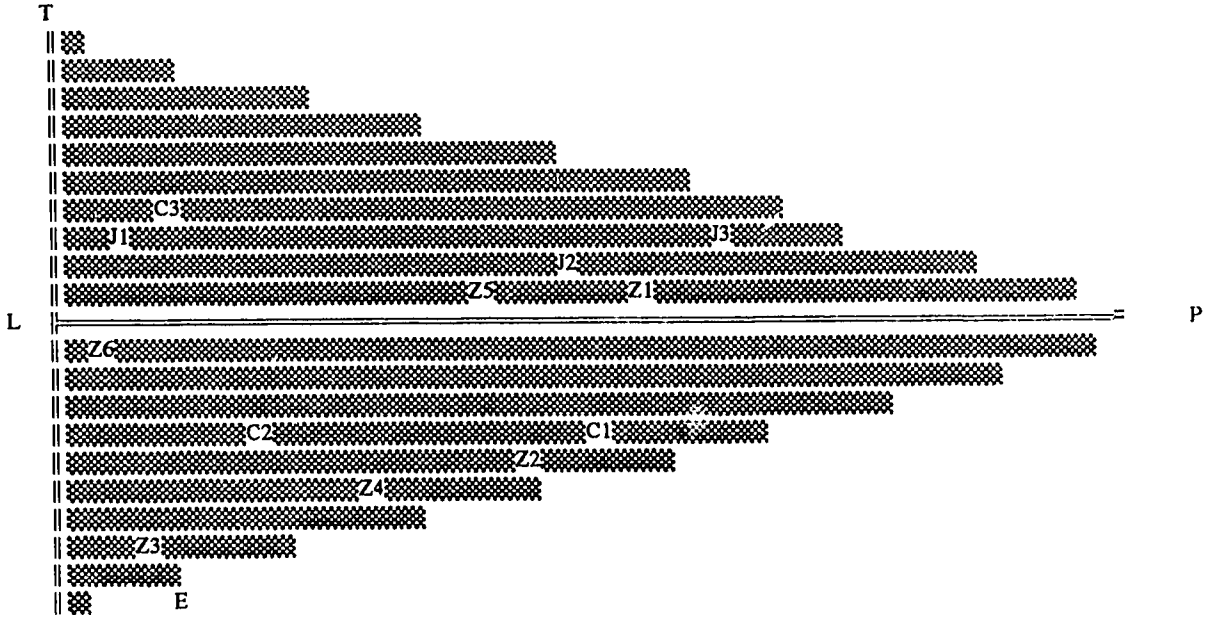
Both continua (L - P and T - E) indicate that, while the functions of an activity can be placed exclusively in one domain and thus at opposite poles, there is also, in principle, a wide variety of intermediate stages on the continua representing different possibilities of integrating the activities and/or their outcomes to serve different purposes. In practice or historically speaking, however, only a limited number of the possibilities have been realized through the creation of institutions attempting to integrate learning with production or training with general education.

The notion of a continuum between, for example, education and training also leaves open for scrutiny the degree to which a P element in general education becomes fundamentally different from the P within a full-fledged production environment. This acknowledges the actual experience that sometimes these P's do not fundamentally differ from each other, as was earlier assumed. Where the P element is sufficiently protected, through measures in the management and organisational sphere, it can very well maintain its 'original' strength, as has been the case with production units in training colleges.

For the reasons given before, the last key element in the adjusted conceptual framework is the distinction between 'domain' and 'institutional format' for EWP. To clarify this further, we should start by considering 'pure' (academic) education and training areas as two poles on one side and the production area as a third pole on the other side. In between these three poles there is a field of activities which in the course of history and across different socio-cultural and economic environments has been parcelled up among a variety of social institutions: some with narrow boundaries, exclusively within one domain, others with wider boundaries, reaching across more than one domain. The review of traditions presented earlier in Chapter 1 and - for Eastern Africa - in Chapter 8 has shown that such variety has existed, within different environments and with different degrees of success. It is clear, therefore, that the 'domains' or 'spheres' as described by King constitute only some of the 'purer' institutional formats that have emerged, reflecting environments with a relatively high degree of functional specialisation. Moreover, we are fairly confident that this more refined conceptual framework is applicable not only to EWP in Eastern Africa but those in other parts of the world as well.

We can represent the modified framework with the essential characteristics discussed above in a diagram as shown below. In this diagram the two continua, outlined above, together essentially constitute a triangle representing a 'field' in between three poles (E, T and P) within which the three domains interact with one another. The various codes represent specific historical institutional arrangements which have been located on this field in accordance with the approximate relative weighting given to elements from the three domains. These examples will be discussed below.

Diagram 3: *The field of education, training and production*



We shall use examples, largely in EWP, from three countries (Zimbabwe, China and Cuba) to illustrate the intermediate positions in the diagram. A good example from Africa is Zimbabwe, where after independence (1980), through the non-governmental organisation ZIMFEP (Zimbabwe Foundation for Education with Production) a concerted effort was made to introduce EWP. The intention was to move beyond the F2 schools, initiated during the Unilateral Declaration of Independence (UDI) period (1965-1980) as a form of practical education alternative for (black) pupils at the junior secondary level. Under the new policy there would be a heavy emphasis on science and technology; theory and practice would be integrated for every subject; and part of the learning would actually be done while producing in the fields or in the workshops (Chung and Ngara, 1985). Thus, whereas in the F2 schools the emphasis was on practical skills and on production (Z1 in the graph), after independence the aim was to strengthen the education element and thus move more towards E.

In the late 1980s, after much experimenting, ZIMFEP practised three types of EWP formats in the schools under its responsibility. One was involvement in full-scale production on the school farm. Here in the course of time the education element was reduced under pressure of efficiency and the need for profit, leading to greater use of fulltime workers, the appointment of separate farm managers and lesser use of the farm for learning purposes (Z2). As a result for the latter purposes more emphasis was given to productive activities integrated fully into the curriculum (Z3) and to an intermediate format referred to as 'production units', which became small projects run and executed mainly by (secondary) students on a profit basis, but with instructional guidance from school staff (Z4). They were implemented separately from the curriculum, outside class hours, and on a voluntary basis, while the students kept the profits (Conradie, 1989). It should be noted that all three variants (Z2-4) are still part of the same programme.

Zimbabwe also has a strong non-formal tradition, which received a great boost after independence from a variety of NGOs. Their schemes for youth training and employment typically combine elements of craft training, continuing education, and production. Thus, in line with so many similar schemes around the world, they belong near the centre of the field (Z5). By comparison, at present the government is in the process of promoting a degree of vocationalisation of the secondary curriculum. This involves the inclusion of selected vocational options in a number of pilot schools, leading to a national craft certificate (the National Foundation Certificate). Productive work, however, only takes a minor place in this programme (Z6).

The second example is China, whose EWP developments have already been discussed above. The part-labour part-study schools initiated during the Great Leap Forward combined education and production, partly to serve educational purposes, partly as a temporary means to help expand educational opportunities

into the rural areas (Zachariah and Hoffman, 1984). Here production was as important as education and was organised as a separate activity following requirements of efficiency and generating an output for the national economy. Like the school farms in Zimbabwe, they constitute therefore a mid-way stage between E and P (C1). During the Cultural Revolution labour classes became part and parcel of the activity programme of many Chinese schools. This manual labour was especially meant to contribute to allround personal growth and instilling a proletarian outlook. While it took place in a rural or urban work environment, it did not have an explicit skills training or economic function. Thus we classify this type as C2.

During the 1980s, however, as part of the modernization drive, much more attention was given to the development of vocational education and the combination of education with training activities in the middle schools. Students in these streams are still involved in productive work, but "this is seen only as practice in the pedagogical sense" (Löfstedt, 1989). This represents a strong shift away from production to training (C3). It is significant that efforts to reintroduce labour classes in general education with mainly pedagogical aims were by and large not successful.

Finally, the example of Jamaica can be given. Here, the linkage of education with productive work had been given a major boost under the Manley administration, when in 1977 the Cuban inspired Jose Marti Secondary School adopted a significant work-study programme in agriculture and/or crafts (J1) (Jennings, 1987). In the New Secondary Schools, also started under Manley, an option of two additional years at Upper Secondary level was developed, which offered a practical-vocationally oriented curriculum. The curriculum included a work-experience component of three weeks in different types of companies in accordance with the vocational specialisation. This line prepared directly for the world of work (J2). In the 1980s the changed ideological climate was less supportive of the New Secondary Schools and funding was much reduced. Much interest has now been raised by the possibilities of attaching production units to formal and non-formal training provisions (J3), especially because of their potential to reduce costs and to promote entrepreneurial skills.

It is clear that only a more refined framework can capture the marked differences among the above EWP programmes, not only in terms of their relative emphasis on elements from the three domains, but also the variations in institutional format and the consequent strength of the adopted elements. This forms a better starting point for a more differentiated approach to the analysis of actual EWP experiences and their shifts over time.

The variations in combining education, training and production

The examples demonstrate the variations in EWP that exist within individual countries both simultaneously and over time. Several variations are intermediate programmes in which very strong components of production have been combined with education. But their succession also reflects the shifts that have occurred from an emphasis on commercial production towards more emphasis on learning outcomes, and from education towards training (but with more limited and selected attention to production). The ideological shifts in many countries have meant that presently interest tends to move from productive work attached to schools to productive work carried out in the context of training institutions. In the latter case it adopts more an economic than a pedagogical function.

It is shown that programmes where learning is combined with production can penetrate quite far into the production domain, just as much as production can reach far into the learning domain. Therefore the boundaries of the domains are not so clear-cut, and the three poles should rather be seen as radiation points the nature of which changes as the other domain is penetrated.

If we take the above metaphor as a starting point it becomes possible to graphically plot variations in relative attention to the different elements. This can be shown by two diagrams: diagram 4 plots institutional formats on the learning-production interface and diagram 5 plots them on the training-education interface. The criterion used is that of the degree of explicit attention (weighting) given to activities belonging to one domain in relation to another. Each element can become a dominant one defining the basic nature of the institutional environment. It is also possible that learning and working, or training and education, find an institutional environment in which both are equally important. Here, for example, the institution can be both a factory and a training centre at the same time, or one that offers both general education and training almost in equal proportions.

The diagrams are not intended to indicate anything about the organisation of the 'penetration'. At each stage along the continua the institutional arrangement could vary from those whereby the boundaries between the 'learning' and the 'production' elements (or between the 'education' and 'training' elements) would be very clearly demarcated, to those whereby a far-reaching degree of absorption of one into the other has been attempted. However, as the explicit attention to the 'foreign' element decreases the nature and expected outcomes of the latter tend to become adjusted to the requirements of the dominant domain.

The diagrams also do not pretend to make distinctions between programmes in terms of volume of, for example, learning or working; or the absolute amounts of time spent on each element. Nor is the actual location of the activity considered: i.e. whether the 'foreign' element takes place within the premises or in a place physically and institutionally separate from the controlling organisation. The idea is to show the changing variations in the relative attention given to each

of the elements vis-a-vis another. At some point along the continuum a transformation takes place from one dominant environment to another.

Within the diagram various markings are given on the continua as examples of actual institutional formats of combining elements of education, training and production. Each of these examples is explained below, starting with the learning-production interface in diagram 4.

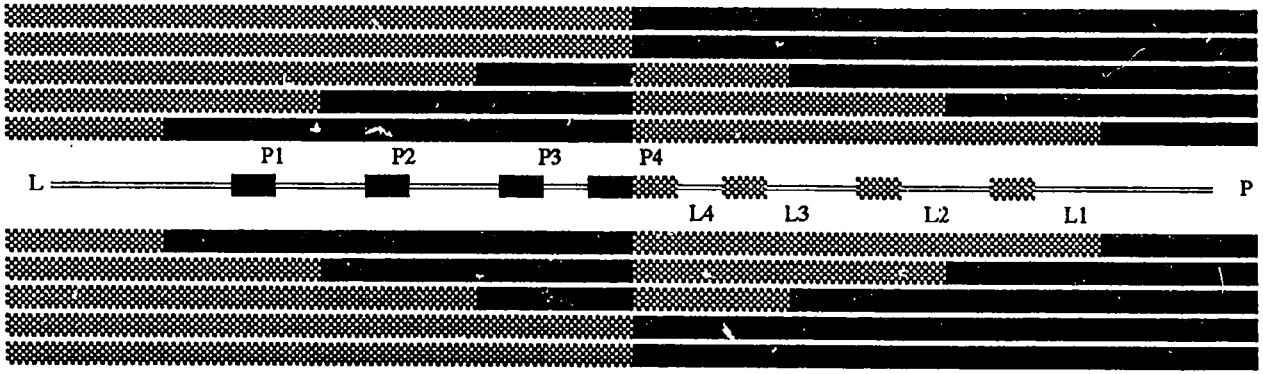
The diagram shows the interface of learning and working assumes seven possible combinations of relative attention apportioned to the two activities of learning (L) and production (P). The L-P continuum can be divided then according to the formats that such combinations may take either as an element introduced on an increasing scale within the learning institutional environment, or as a context or institutional environment that incorporates learning on an incremental scale. The differentiation of the institutional formats is done on the basis of our knowledge of the range and diversity of EWP programmes from Eastern Africa and elsewhere.

The following formats have been identified within the learning environment, and thus constitute forms of EWP and TWP proper:

P1 = Productive work in learning institutions as *learning practice* or a pedagogical 'carrier activity' unbuilt into and indistinct from the normal learning process. This is currently a common format whereby some productive work is an integral part of the curriculum, for example in applied science, in 'practical subjects' or agriculture, in technology education, or in vocational training courses. Also many work-experience activities fall into this category. Here production tends to be absorbed into the learning situation and the emphasis is predominantly on the pedagogical dimension.

P2 = Productive work in learning institutions as distinct *learning projects* that are fully integrated if not into the curriculum, then at least within the programme framework or philosophy of the learning institution. In this case production may be organised as a separate activity and take place either within the institution or outside in a commercial work environment. Production here is seen as a parallel activity, which may be part of an existing subject or vocational course; it may also be separate from the curriculum and carried out outside class hours. While its main emphasis is on creating more opportunity for further learning, part of the pedagogical gains are meant to be derived from direct and full participation in a simulated or real commercial situation. The projects are often intended to have an additional economic benefit for the learners and/or for the institution. This category includes the many production units or projects in general education and training institutions throughout the less industrialized world; it also includes many work-experience and labour education projects.

Diagram 4: *Institutional formats of Learning (L) and Production (P) interface.*



Key: = Learning domain

= Production domain

P3 = Here production take a major place among the overall range of activities of the institution of learning. It may be implemented through a *distinct economic unit* attached to the institution, whereby the activity is organised on a full commercial basis and priority is given to the criteria of efficiency and economic viability. Very little or any explicit concession is made to the desired pedagogical orientation of the institutional set-up as a whole. Yet there may be an assumption that the very fact of students participating in the economic activity constitutes a valuable learning experience, giving them a close touch with the realities of the work-world. Examples are commercial farms attached to schools or school-run factories and workshops, which may be part of a labour education or polytechnic education programme. Commercial production units attached to vocational or technical training institutions also belong to the category.

P4/L4 = This is typically the position of a borderline situation whereby both learning and working are given approximately equal attention. Activities of both domains may take place within the same institution and they may interact for mutual benefit through negotiation. But this type also includes situations whereby learning in an institution is combined with ongoing participation in a separate production environment not controlled by the school or training centre (*dual system* or *learning and working*). The German dual vocational training system and the older forms of polytechnical education belong to this category. The reverse, where a production setting relates to a learning unit or institution which is autonomous from itself, also applies. Industrial training institutions do therefore belong to this category.

What follows below are institutional formats for learning and working within the working/production environment (they are therefore forms of Production with Education or Training - PWE and PWE):

L3 = Learning in a *distinct but not separate unit* within a production environment. Although in this case the environment is foremost a production environment, it gives a continuous and systematic attention to education and/or training in a formal manner through institutionalised programmes or even learning units. Institutionalised workers' education programmes as well as small training institutes integrated within and operated by the production settings, typically belong to this category.

L2 = Learning as a *formal but limited project* within a dominant production environment. This refers to education or training programmes of a certain duration organised for the general improvement, upgrading or re-training of workers. The learning may take place partly on-the-job, partly in a separate formal programme implemented within the business or a training institution,

for example in a technical college, trade development centre or a rural training centre.

L1 = Learning as an *activity unbuilt into the work process* itself, as a dimension within a dominant production environment. The learning may be an incidental activity or an ongoing dimension of the production process. This includes on-the-job apprenticeship type of training. The emphasis is clearly on production, with learning being considered a desired by-product.

One may make an historical interjection at this point in connection with the evolution of the L/P interface formats. It would seem that, from the point of view of production, the formalization of learning began precisely at the point of fusion of learning and production which coincided with the fusion of training and education, such that progressively learning took on distinct institutional forms. From on-the-job training/education institutionalisation moved to distinct but integrated limited programmes, and from there towards greater autonomy and eventual complete separation from the world of work.

This process had its own dynamics in different socio-economic and cultural settings. It is on historical record at least for the Western world that with the industrial revolution employers in the sectors of industry and commerce preferred the formalisation of learning so as to free themselves from the need to deal with the old apprenticeship system of Guild Training (Komba, 1980:83-84). Thus with the formalisation of learning outside the production sphere production settings largely divested themselves from production-based training functions under their charge and society had to depend more and more on formal training and education sub-systems to produce quality manpower for the production domain. The latter, in turn, became also increasingly formalised following the Industrial Revolution and the development of production management under the capitalist system.

In this perspective EWP and TWP can be seen as an effort of humanity to retrace its steps and critically review the formalisation of learning as well as that of production so as to rediscover the value of production-based learning in its various forms for the sake of human progress. Specifically this effort involves two activities:

1. A re-examination of efforts to 'vocationalize' formal learning in the most general sense of trying to gear it to specific production settings by manipulating the interface of training and education vis-a-vis the work requirements. Another way was to bring production in one form or another into the learning setting and use a combination of both learning institutions and formal/non-formal production settings for the development of human resources for the world of work.

2. A re-examination of efforts of production settings to undertake production-based formal and/or non-formal learning to supplement formal (school-based) learning when assessed to be inadequate but necessary for the survival or development of the production enterprise.

Let us now look more closely at the institutional formats of the training-education interfaces as presented in Diagram 5 below.

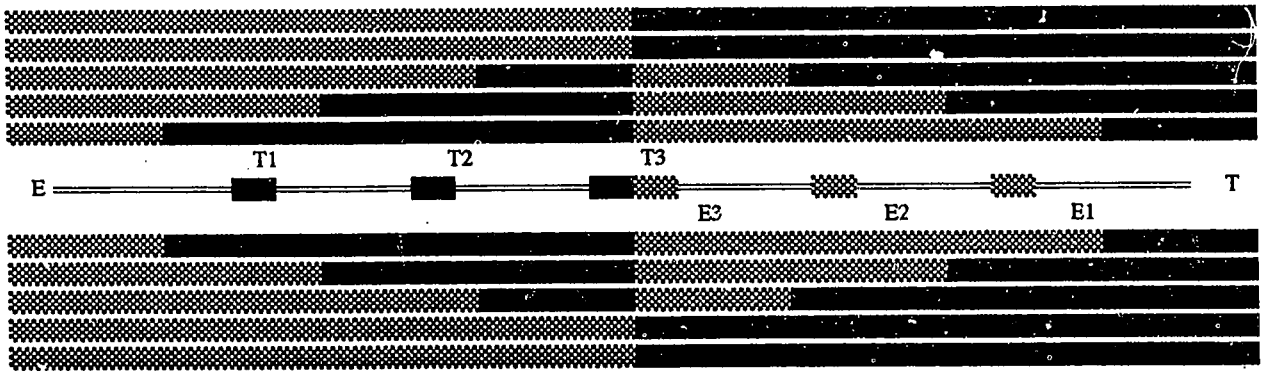
With regard to the combination of education and training five kinds of institutional arrangements have been indicated on the T-E continuum:

T1 = A practical skills element integrated within the curriculum of general education with an emphasis on its contribution to basic knowledge, cognitive or problem-solving skills. Presently, there is an increasing variation in introducing such elements into the general education curriculum, for example through applied science, gardening, home economics, technology education, education for capability, education for enterprise or life skills. Also the Scandinavian type of practical work through handcraft (slöyd) belongs to this category. Such elements may be part of a variety of existing subjects or constitute a separate area of learning within the general education programme. While there may be some spill over into extra-curricular work the main emphasis is on what can be done within the curriculum. All this could be labelled generally as 'practical (or arts and craft) education'.

T2 = Pre-vocational components added to the (academic) curriculum on an optional or compulsory basis, with an explicit aim of offering a basic orientation to, and awareness about working life and/or promoting the development of basic technical competencies. This includes programmes of 'practical (craft) subjects', agricultural science, and diversified or vocationalised education. While within basic education such components are clearly pre-vocational in orientation, at senior secondary their purpose come closer to vocational training. Depending on their aim some skills may be included here or under T1: such as typing, computer skills, agriculture and crafts. All this could be generally labelled as 'pre-vocational education'.

T3/E3 = These are programmes where a strong and almost independent training unit has been combined with a general education programme. The initial setting could be an educational or a vocational training one. The programmes may be offered on the basis of streaming or be available to all learners as an integrated package. Examples include vocational middle schools (e.g. China) and functional literacy or post-literacy programmes for adults. The general label in this situation is 'vocational/technical education'.

Diagram 5: *Institutional formats of Education (E) and Training (T)*



Key: = General Education domain

= Training domain

E2 = These are vocational training institutions with a strong and recognizable project or programme of general education, introduced with a view to broadening the scope and versatility of the training scheme. This involves exposure not only to such areas as science, mathematics or language, but also to areas like entrepreneurship education and management. This is common in some training centres aiming at giving trainees broad-based vocational or technical training. Some Polytechnical Education Programmes may belong to this category as well as a wide variety of non-formal training activities for youth and adults.

E1 = This is similar to E2 above only that here vocational or technical training institutions incorporate only a small element of general education within their training curricula. This is a common situation in technical and vocational training centres seeking to broaden their training programme.

The variation of EWP programmes in the Eastern African region

Here we shall attempt to utilize the expanded theoretical framework for a tentative re-categorisation of the various programmes in Eastern Africa as earlier presented in Chapter 7 above. But given the limitations of the information obtained in the state-of-practice reviews its interpretation here will need to be treated with some caution. Further in-depth research of individual programmes would reveal more of the real nature of the programmes and consequently how they could best be categorised.

A further issue that needs to be clarified at this point is what dimension of programme or curriculum reality the categorisation will refer to. In any process of educational innovation a distinction can be made between several dimensions: the formally stated policy aims and principles that provide a basis for programme or curriculum development, the actual plan that is drawn up by the specialists which is intended to inform implementation of the programme, the actual practice of the programmes as they are implemented 'on the ground', and finally the programme as it is ultimately realized in the minds of those who are to benefit from it, i.e. pupils, trainees, or workers. In curricular terms we may refer to the curriculum as intended, the curriculum as planned, the curriculum as implemented, and the curriculum as achieved. Any discussion about specific EWP or TWP programmes would need to indicate which dimension(s) are being referred to and, if several, how they relate to each other.

The country surveys have shown how the available information decreases as one moves from the intended to the achieved curriculum, so that research would particularly need to focus on the actual implementation and outcomes of programmes. Thus at this stage it is only possible to consider the types and variations of programmes in the region on the basis of information related to the intended and the planned curriculum.

Below we briefly consider the programmes discussed in the four African countries under review in the light of the classification presented earlier in this chapter. For ease of reference the names of programmes used are those mentioned in the text. Singled out as 'programmes' are both those activities related to productive work across a sub-sector (for which the commonly used generic name is taken - such as 'Self-reliance Projects' or 'technical subjects') and those sets of institutions within a sub-sector for which (some) productive work is a central characteristic (such as Harambee Institutes of Technology). Given the focus of the state-of-the-art/practice reviews most attention will be devoted to production programmes in education and in training institutions. Only programmes that are still ongoing have been considered. The classification is presented in diagrams:

Tanzania

For Tanzania the programmes referred to in Chapter 4 can be classified as follows:

Table 1: *EWP and TWP programmes in Tanzania*

Education/training programmes	Production programmes P1	P2	P3	P4
General education		SRP/4H Clubs		
(no practical skills)				
Practical education	SRP/PESP/PS	SRP/PESP/4H Clubs		
Pre-vocational educ.	PS	SRP	SRP	
Diversified Education	TS	SRP	SRP	
Vocational education		SRP/PPTCs/FDCs	SRP	APPR.
Vocational training	TCPs/STCs		SRP/STCs/VTCs	ITIs

Key:
SRP = Self-reliance projects
PESP = Polytechnical Education Support Programme
PS = Practical Subjects (crafts, home economics)
TS = Technical subjects (senior secondary schools)
4H = Heart-Head-Hand-Health Clubs
FDC = Folk Development Colleges
TCP = Training-cum-Production Centres

STCs = Skills Training Centres
VTCs = Vocational Training Centres
ITI = Industrial Training Institutions
APPR. = Apprenticeship arrangements as part of formal or non-formal training

The table demonstrates that in Tanzania production activities have been widely practised in institutions for education and training. The programmes are quite diverse and the educational policy of Education for Self-reliance has made EWP a prevalent concept in the entire system of education. In schools the activities mostly remained of the P2 or P3 variety. Although they were often linked to the curriculum they were rarely an integral part of it. As regards agriculture the PESP programme (Tanga) assisted in relating productive work in this area closer to the core curriculum, an example that was followed elsewhere when it was attempted to replicate the programme nationally.

In training various modalities were followed. Several Vocational Training Centres set up their own production centres (P3), while maintaining also a direct relationship with industry for hands-on practice through apprenticeship arrangements. P2 and P3 formats have also been very common in non-formal training programmes, such as the Folk Development Colleges and the Mission Trade Schools. Centres that received more assistance and were better organised have tended to opt much emphasis on P3 arrangements.

Kenya

Table 2 attempts to categorise the various EWP and TWP programmes that have been discussed in Chapter 4 on Kenya. It reflects the prevailing situation in Kenya that productive work tends to be either limited to what is produced as learning practice in schools or training institutions or to special production units established for income generation purposes separate from the curriculum. The latter is particularly common in vocationally-oriented institutions, while - as has been noted in Chapter 5 - also a number of primary and secondary schools have now established units of this nature. It means that an emphasis on smaller projects with both a pedagogical and economic function is notably absent.

It is striking that Kenya seems to have seen a variety of innovations right at the interface between the different domains: for example the Technical Secondary Schools and some of the Industrial Training Centres. Closer scrutiny should make it possible to date the various programmes and thus analyze the change of the pattern over time within the context of the wider socio-economic and political developments in Kenya. For example the Technical Secondary Schools have now disappeared and have been turned into institutions closer to the T-end of the learning continuum. Productive work in schools is on the increase, but largely for economic reasons. The 8-4-4 curricular change has officially stressed the pre-

vocational dimension of education, but in practice academic education continues to prevail.

Table 2: *EWP and TWP programmes in Kenya*

Education/training programmes	Production programmes P1	P2	P3	P4
General education (no practical skills)				
Practical education	A&C/Agr.	Agr.		
Pre-vocational educ.	PS/Agr./IE		Agr.	
Diversified education	TSCs			
Vocational education	TTIs/YPs		YPs	
Vocational training	HITs		HITs/NYS	ITCs

Key:

A&C = Art and Crafts
PS = Practical Subjects
Agr. = Agriculture
IE = Industrial Education
TSC = Technical Secondary Schools
TTI = Technical Training Institutes
YP = Youth Polytechnics
HIT = Harambee Institutes of Technology
NYS = National Youth Service
ITC = Industrial Training Centres

Zambia

For Zambia the national policy of institutions having a production unit is reflected in the above table. But initially little effort was made to link such PUs to the curriculum. As a result the Practical Subjects programme, concentrating only on limited productive work as a direct part of the learning process, remained very separate from what went on in the production units. SHAPE is mentioned here, specifically because it initiated a closer integration between the various programmes at least at the primary school level. In particular it attempted to help school identify modest variations of a full-blown production unit by encouraging and supporting the development of learning projects (P2) which had both a pedagogical and a (limited) income generation purpose.

Table 3: *EWP and TWP programmes in Zambia*

Education/training programmes	Production programmes P1	P2	P3	P4
General education (no practical skills)		SHAPE	PU	
Practical education	PS	PU/SHAPE		PU
Pre-vocational educ.	PS	PU	PU	
Diversified Education	TSS		PU	
Vocational education	SCEs		SCEs	
Vocational training	STCs/TTIs		STCs	STCs/TTIs

Key:

PS = Practical Subjects
PU = Production Units
SHAPE = Self-Help Action Plan for Education
TSS = Technical Secondary Schools
SCE = Schools for Continuing Education
STC = Skills Training Centres
TTI = Trades Training Institutes

Ethiopia

On the whole Ethiopia seems to have had a more limited variety of programmes when compared to Tanzania. Yet, in terms of total numbers of people (youth and adults) being exposed to EWP, it is probably true that in Ethiopia the overall majority of learners and workers were at least intended to be exposed to some form of EWP especially through labour education, polytechnical education and workers' education. There has been much emphasis on full-scale production activities associated closely with the learning situation. Thus P3 tended to be strongly represented, with attention to both the pedagogical and commercial dimension.

Table 4: *EWP and TWP programmes in Ethiopia*

Education/training programmes	Production programmes P1	P2	P3	P4
General education (no practical skills)		LE		
Practical education	PS	LE		
Pre-vocational educ.	PS	LE		
Diversified Education	PE		PE	
Vocational education			TVS	
Vocational training	ASTC		OICE/ASTC	

Key:
LE = Labour Education
PS = Practical Su'
PE = Polytechnic Education
TVS = Technical and Vocational Schools
ASTC = Adult Skills Training Centres
OICE = Opportunities Industrialization Centre

The regional experience related to EWP formats

The breaking down of EWP and TWP programmes according to their relative attention to different domains allows for a closer scrutiny of the broader experience of different formats and their dynamics over time. In view of the insufficient data on actual programme performance the observations here must necessarily remain tentative.

Desegregating formats of EWP and TWP will make it possible to discern preferences and trends regarding the programmes. It is noticeable that the major emphasis in the region appears to have been on productive activities as learning practice closely linked to individual subjects (P1) on the one hand and on Production Units as distinct entities within the learning institution on the other hand (P3). In the former the pedagogical rationale appears to have dominated; in the latter the economic one. The intermediate situation of production as limited learning projects with a combined pedagogical and economic function has been the subject of much experimentation (SRP in Tanzania, Labour Education in Ethiopia, SHAPE's efforts in Zambia), but they have not been very popular and appear to have been difficult to implement.

The recent trend has been to separate (limited) production for learning and (more extensive) production for income generation, and to engage in production

activities mainly for the purpose of the latter. Thus the preference for P1 and P3 is becoming more prominent while P2 programmes tend to be drawn towards either P1 or P3. The latter move is directly related to the demise of the ideological considerations that spurned much of the experimentation with this intermediate format. Thus countries like Tanzania and Zambia are coming closer to the more pragmatist approach followed by Kenya. Moreover, at present the interest to experiment appears to be more focused on the combination of advanced learning and production, especially in the training field (including forms of 'dual training').

Clearly the problems and constraints for implementing the various P formats differ greatly. Thus further in-depth research would need to differentiate the various observations made in the previous chapter concerning planning, process and outcomes of EWP programmes. Productive activities as an integral part of the curriculum (P1) are very limited in nature and scope. Since the use-value of the items produced is less important than the application of concepts, principles and basic technical skills, the input requirements are modest and can more likely be substituted by locally available materials. The activities do, however, demand more in terms of teaching skills, particularly classroom management and imagination in identifying resources. The absence of these skills among poorly trained staff tends to have been more responsible for the poor performance of 'practical' than the lack of inputs.

P3 production, on the other hand, is more demanding in terms of a range of appropriate inputs, institutional management skills and specific technical skills among staff. As was shown, also these have been in short supply, even though the anticipated economic return has been a great incentive for institutions to pursue such effort. The irony is that the poor administrative and management capacity in the education and training systems together with the crisis of financial resources contribute greatly to both the reasons for maintaining the interest in production units and for the persisting major difficulties of implementing them successfully.

The problem of the intermediate P2 format has been that such projects require a good bit of the conditions that apply to activities under P1 as well as to those under P3. The lack of training, of administrative, management and technical support, of minimal financial resources combined make such projects more difficult to implement. Their ideological coating together with the intractable problems of finding an acceptable and appropriate way of examining the pedagogical outcomes appear only to have increased their unpopularity with teachers, pupils and parents.

Yet the pedagogical value of the P2 format as an exciting and effective form of work-orientation has found increasing recognition in various parts of the world (for example in work-experience activities, small science and technology projects, life skills assignments, simulated 'mini-companies'). Indeed, where in the Eastern African region the pedagogical rationale has been made explicit and sufficient

training, professional guidance and basic resources were made available - as through ZIMFEP in Zimbabwe and SHAPE in selected Zambian primary schools - the response as well as the results have been positive.

The discussion about EWP programmes in the context of broader efforts in the different countries to improve the preparation for work has also revealed that in many ways the interest to improve 'relevance' has been reflected more in a move towards some form of vocationalisation than in a move towards more space for production. At present in all countries in the region more political and administrative support, and hence financial allocations, are given towards moving further along the Education-Training continuum than along the Learning-Production continuum. Where production is given public attention it tends to be a secondary consideration, aimed at providing financial and practical backing of such move. Thus the trend towards correlation between more attention to training on the one hand and a more explicit attention to the production element, which is visible in the tables for the various countries, may well become greater.

The above shifts appear to be closely related to international trends in the development of education and training systems. In Eastern Africa the demise of the ideological policy framework has opened countries more to current pragmatic debates concerning the interaction between education, training and the world of work. This may promote a fresh look at the potential that education and training systems have for combining some forms of learning and working in the context of the special circumstances of the poorer countries. A clearer differentiation between various approaches and a greater awareness of their problems and bottlenecks in the recent past will help to create a more open mind as to what is appropriate in the future.

EWP issues for policy development, research and networking in the Eastern Africa region

Donatus Komba

Introduction

This final chapter examines the issues associated with EWP policy and programme development and discusses the extent to which the current State-of-the-art reviews address them or raise new ones. In the process suggestions are made for further research and improved networking in the region.

Broadly speaking, the issues can be grouped into three clusters: those related to the warrantability of the expectations that are normally held about EWP; those of operational nature within either general Education (E) or Training (T) and those having to do with actual impact of EWP programmes vis-à-vis the set expectations. Before we look into each of the clusters we should point out that some of the issues remain unanswered by the present review because of its limitations in scope and depth in the sense that the EWP in the production domain has not been covered and there are hardly any studies on both the process and impact of EWP programmes.

Issues of warrantability of expectations about EWP

There are a number of themes which underlie the expectations people have about EWP. These are: EWP as a way of providing basic learning for self-employment of the majority of school leavers, and for wage employment for some of them; EWP as a way to get school populations to cost-share, as a way to 'practicalise' or 'vocationalise' education, and as a means to combat conventional negative attitudes towards work.

When rationales for the EWP policy are given, all or several of these expectations are articulated. The issue is: what is realistic and therefore reasonable to expect from an EWP programme? Can it yield significant cost-sharing? Can it substantially reduce unemployment through work skills training and hence self-employment? Can it substantially change the conventionally negative attitudes that youth have towards work generally and rural life in particular? Is production-based learning of better quality than learning that is not production-based? What does the present review suggest as answers to some or all of these issues?

Cost-sharing

Theoretically school populations, largely consisting of youthful energies, should be able to make a substantial contribution to the costs of their education. However, in practice it may not be easily realizable. The review indicates that the economics of EWP has not yet been fully worked out. Often statistics of revenue are not accompanied by cost statistics which makes it difficult to interpret them. On the basis of the data available, however, it would seem that educational institutions have good potential in substantial cost-sharing in education although their current levels of contribution are rated below expectations. This is definitely the case in Tanzania, for example.

An explanation of this situation of affairs seems to lie in the conflict that still exists between the essentially educational mission of the school and the cost-sharing rationale. This can best be understood in the context of academic orientation of the traditional school whereby productive work has not yet been sufficiently reflected in the curriculum and in the educational assessment system.

Unemployment and self-employment

In most countries youth unemployment is a vexing problem in political, social and economic terms. In its current form the school system is considered to be a creator of this problem rather than a solution to it. The introduction of the EWP programme in the education system is believed to be a strategy to transform the education system so that it effectively combats unemployment by offering the youth life skills that should not necessarily lead to wage-employment but certainly to self-employment. But to what extent is it reasonable to put so much confidence in EWP to combat this problem?

The current research review does not contain any evidence on the impact of EWP programmes on self-employability of school leavers. It would seem that past research had not focused on this area. This is a knowledge gap that urgently needs to be filled by researchers.

Negative attitudes towards work

Negative attitudes towards manual work are usually considered to contribute greatly to the problem of unemployment of school leaver. EWP programmes are expected to reverse these attitudes and so make self-employment possible.

How realistic is this expectation? What has been the impact of these programmes in terms of the change of attitudes towards work in the recent past?

This review has not come across much literature on the attitudinal impact of EWP programmes. This again is an area that calls for research. There is some casual evidence to show that the attitudes of youth has been changing for the better. However, this cannot unequivocally be attributed to EWP programmes.

The worsening state of the labour market may have dissipated illusions that youth normally hold.

Quality of production-based learning

EWP assumes that production-based learning is qualitatively better than purely academic learning. This entails the view that graduates from EWP institutions should do better than those from non-production institutions. However, the review seems to be devoid of tracer studies which could address this problem. Research in this area is therefore urgently called for.

Issues of operational nature

Once EWP programmes come into operation a number of problems do arise. Some of the problems may be a result of faulty planning and others of shortage of inputs for plan implementation. These problems can be seen at the national and institutional levels, and relate to coordination; organization and management; EWP requirements in curriculum pedagogy and assessment; and choice of type, scale and range of production.

Coordination at the national level

In each country there is a whole range of EWP programmes responding to diverse situations. The problem that arises in that regard has to do with coordination. Invariably this is lacking due sometimes to the absence of a coordinating institution or to the poor performance of such body where it is operational. In this context the Zambian approach to a coordinating structure at national level, through the SHAPE programme, deserves closer scrutiny.

The review at hand reveals that, apart from Zambia, countries do not have an institution created specifically to coordinate and monitor professionally the various EWP programmes and activities at the national level. The problem does re-surface at the institutional level too as we are going to see below.

Organization and management at the institutional level

The review has shown two possible ways of organizing and managing EWP programmes. One of them could be labelled 'intra-institutional' in the sense that the programmes are initiated and run within the educational (E) or training (T) institution itself. The other could be labelled 'extra- or trans-institutional' in the sense that the programmes were organised in institutions of production other than the learning institution itself. For example, a training school could send its students to a factory to receive their practical production-based learning. The

programme would then be jointly managed by the school and the factory at the point.

The basic issue is: why did schools come to run intra-institutional programmes of EWP? Would it not be more economical and indeed more beneficial to run extra-institutional ones?

There is some scanty evidence (from Kenya) to suggest that governments can actually direct production institutions or workplaces to play their role in the practical aspects of training to be given to their potential workers. Otherwise the review indicates that, left on their own, workplaces resist being used as training grounds by training institutions. Perhaps it is because of this that learning institutions opt to initiate EWP programmes intra-institutionally. Other reasons for doing the same stem from the rationales given for EWP policy. For example, the cost-sharing rationale seems indirectly to suggest an intra-institutional EWP form of organisation.

Definitely, either of the organizational forms poses clear challenges in management. In the intra-institutional organisation, for example, conflict between the economic and pedagogical purposes of EWP does pose a significant management challenge to the training institution to strike a balance between the two so that none of them is carried out at the expense of the other. A good example came from Kenya where some Harambee Institutes of Technology were reported to have strong production units operating at a commercial scale. Often separate administrative divisions for training and for production had to be created with separate management but both responsible to the Board of Governors.

There are also instances where the institution may run several EWP programmes of different orientations. A good example were primary schools in Tanga, Tanzania, where one could find in the same institution conventional self-reliance projects and Polytechnical Education Support Projects of production-based agricultural science involving all pupils as well as projects of voluntary 4-H clubs. There was not much literature available to illuminate the management and administration of these various projects including the degree of involvement of the school principals, teachers and pupils themselves in various committees of project management. Likewise, the review does not illuminate readers on what management knowledge and skills are required to run the existing variety of EWP programmes.

Curricular, pedagogical and assessment requirement of EWP

One of most challenging issues related to EWP is whether and how it should be reflected in the curriculum, the pedagogy and the educational assessment. In the region we do have examples of programmes which are largely extra-curricular or co-curricula. These clearly follow more the economic rationale than the pedagogical or other rationales. Also we do have curriculum-based programmes. These by their nature tend to justify an educational purpose rather than anything

else. This has often to do with the scale and types of production carried out. It would seem from the review that, the greater the emphasis on the economic rationale, the more likely that the production will be extra-curricular or co-curricular and not be adequately reflected in educational assessment. Also, the greater the emphasis on the pedagogical rationale, the more likely for the productive activity to be curricular, to relate to the pedagogical process and to be reflected in the assessment system. In the latter case, teachers are challenged to use productive activity as a context of learning and often find themselves inadequately prepared to do so. The conventional methods of teaching and especially assessment also prove to be inadequate to a large extent.

In the case where productive activity is extra-curricular and serves almost exclusively purposes other than educational, a problem of motivation emerges. Students, teachers, and even the general public view the productive activity as an interference in the academic life of the institution. It is therefore tolerated simply because it is politically imposed. The situation eases somewhat, though, where the productive activities are democratically initiated and run by the student body to their own advantage even if that may not be academic. Therefore, whether curricular or extra-curricular EWP programmes pose various challenges to the learning institution that, it must be admitted, is still perceived to have essentially an academic mission. In that context production tends to be treated as a visitor in a foreign land as it were. It seems it will take sometime to completely change the traditional notion of the school as inherited from the colonial era.

Choice of type, scale and range of production in EWP

In the implementation of the policy of EWP there is an issue of the choice to be made about the right type, scale and range of production (P) to suit the purpose or purposes for which EPW may be undertaken. In the conceptual framework of this review (Chapter 9) different types of P have been identified. The issue that arises is: given the four main rationales for EWP (pedagogical, economic, social and politico-ideological), which P-type or P-types best suit which rationale?

This research review seems to suggest that several P-types can go on at the same time to cater for different purposes. This seems to be a better way to attain the various objectives than relying on one P-type as a panacea. The ZIMFEP programme in Zimbabwe seems to set an example in this regard as one school may have P1, P2 and P3 at the same time. In that case, P1 and P2 are pedagogically oriented while P3 is more economically attuned, given its larger scale of operation. Similarly, production settings may incorporate learning (L) at different levels of formality and integration.

Issues of EWP impact

Ultimately the desirability of EWP programmes is judged by their impact on the life of the institution and especially on the life of their beneficiaries. People do want to know the extent to which EWP-practising institutions are better than those which do not integrate either education or training with production. Specifically it is of interest to find out whether the learning process becomes qualitatively different from and better than what obtains in conventional settings. That is, how is either E or T affected by P and vice versa? More importantly, it is of great concern to find out how far graduates of EWP programmes fare better in the labour market, either as employees or, especially, as self-employed.

As earlier indicated, the scope and depth of the current state-of-the-art review does not permit us to draw firm conclusions which answer these questions. This means, that there is need to extend the review to cover the EWP in the production domain, to conduct research on EWP processes within institutions and to do tracer studies of graduates from EWP programmes of various types.

Conclusion

From the discussion on EWP issues in the region it would appear that thus far there is no firm research evidence to establish conclusively the warrantability of most of the expectations that people normally hold about EWP programmes. These include meeting a substantial portion of educational costs, alleviating unemployment through self-employment and improving the quality of learning.

Also, as it is, the current review does not illuminate the process of EWP in a thorough way. As far as it goes, however, it points to the existence of problems of co-ordination, organization and management. It also shows the challenge to ensure that EWP is reflected in the curriculum, pedagogy and assessment system. The review raises the issue of the choice that should be made on the type, scale and range of production that should be integrated with learning in order to attain the various objectives normally put forward for EWP programmes.

Finally, it has been pointed out that there are two main 'blind spots' in the current research review, namely, the process and the impact of EWP programmes. This indirectly, is a call for the extension of the current research review as well as the launching of case studies or state-of-practice reviews to elucidate these unresearched areas and discussions of EWP.

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