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**Beyond Primary Education:  
Challenges and Approaches to Expanding Learning Opportunities in Africa**

**Parallel Session 6B**

**Skills Development  
in General Education**

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**School enterprises and sustainability:  
Challenges for secondary and vocational education**

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## Acronyms and Abbreviations

INA	Instituto Nacional de Aprendizaje (Costa Rica)
MAN	Nutzfahrzeuge AG Werk Salzgitter
MES	Modules of employable skills
PIKA	Jsekolah Pendidikan Industri Kayu atas (Indonesia)
SENA	Servicio Nacional de Aprendizaje (Latin America)
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEVOC	UNESCO International Centre for Technical and Vocational Education and Training

## 1. SUMMARY

1. While priority is being given through international agendas to basic education and Education for All, especially in developing countries such as countries in Africa, which is good, there is little attention focused on the articulation between education, skills development and entry into the labour market. Current secondary and vocational educational models fail to adequately prepare students for the high probability of self-employment, which is a reality in most African countries on account of the lack of formal sector jobs. Another problem is the increase in the number of students completing primary education. Financing mechanisms will be needed for financing the increase in demand for post-primary education, if prohibitive user fees are to be avoided.

2. School enterprise is an alternative model for linking the processes of secondary and technical and vocational education to real work and market situations, as well as a providing self-sufficiency in financing. School enterprises, which combine market production with systematic vocational learning, bring conventional schools and vocational institutes closer to the realities of life, particularly the world of work and self-employment. The basic feature of school enterprise is the increasing interest and motivation of students in their studies. The quality of learning is crucial to the quality of work and income-generation.

3. The benefits of the school enterprise approach for students and institutions are manifold, but methodological as well as substantial organizational and cultural challenges vis-à-vis conventional educational institutions are significant.

4. The issues that the school-enterprise model seeks to address are particularly pertinent in the African context. The increasing need for additional capacity in post-primary education is paramount, and for this to be made available and relevant to young people in both rural and urban contexts has an urgency. However, building this capacity will depend on making known some of the features and successes of this model. Indeed, implementation has shown that this can be a viable solution, even though the number of schools committed to this approach is still very small.

5. The paper first examines the issue of school enterprises as part of a larger educational project, influenced by the wider social and economic climate and the bigger policy discourses of multilateral and bilateral agencies. Second: It spells out the conceptual framework as a useful yardstick for analyzing differences on the effectiveness of school enterprises, and how well they are managed. Third: It analyzes the implementation of school enterprises by referring to literature on various examples of school enterprises and offers guidelines with regard to the optimal interlinking between production and learning, as well as the emphasis on the pedagogical value of introducing productive enterprise. The paper concludes by looking at factors that may enhance school enterprise environment, and highlights some of the basic principles that need to be borne in mind while setting up school enterprises.

## 2. EXECUTIVE SUMMARY

6. This paper revisits a study on school enterprises, which the author conducted in 1998 within UNESCO's UNEVOC project (Singh 1998). While this study was done some 10 years ago, the concept of school enterprises is still alive and is being tried out in many countries in diverse ways (Kafka et al. 2006). Concepts and approaches have been revised in the context of new and broader educational policies and sector reforms. School enterprise is a big challenge for the whole post-primary education and training sector. Post-primary institutions in developing countries are increasingly expected to generate alternative sources of financing as well as to interlink with skills development and the labor market. The importance of school enterprise has increased with the finance gap, which currently limits the availability of sustainable post-primary education across Africa (Kafka et al. 2006).

7. While the focus of the Millennium Development Goals (MDGs) has been on primary education, the question arises who will finance post-primary and skills-based education. Furthermore, given that low-income countries in Africa are typically characterized by a lack of formal sector jobs, self-employment is the most important means of earning a living. This raises the issue of how traditional post-primary education and training institutions prepare students with productive and entrepreneurial skills.

8. **Chapter 4** examines the issue of school enterprises as influenced by the wider social and economic climate and the broader policy discourses. African countries are facing several challenges:

- African countries lack of skills that are highly developed elsewhere;
- While MDG goals rightly focus on primary education, finance for post-primary and skills development has been sidelined;
- The potential of youth is not being developed to the fullest, despite the fact that there is a growth in youth population in African countries;
- There is a lack of clear and coherent strategies to implement Dakar Goal three: "Ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programmes";
- Universal primary education is creating a pool of graduates whose education is not being adequately furthered and consolidated due to the lack of capacity in alternative training and continuous and lifelong learning.

The questions that arise are, therefore, how and where are we going to get the skills-based education? How are governments going to meet the financial costs arising from the massive demand from children seeking entry to secondary education? How can this demand be met without introducing prohibitive fees?

9. The approach of school enterprise provides a possible answer not only to increasing the relevance of learning, but also provides a possible means of finance for the school or the vocational institute. It has the potential of contributing not only to sustainable development but also to sustainability of learning. Although the number of schools strategically committed to economic self-sufficiency is extremely low, their success demonstrates that such an approach is indeed feasible, and provides a roadmap for others wishing to replicate their achievements (Kafka et al. 2006).

10. **Chapter 5** develops a conceptual framework for analyzing school enterprises. Education and training are seen from an integrated perspective, and form part of the broader domain of learning. More recently, the concept of 'self-sufficient schools' has been introduced, in order to highlight the importance of providing the school a sustainable means of finance. The principle of the school enterprise serves a variety of economic, educational and social objectives. Awareness of the benefit of these issues allows institutions to put in place formal policies and management structures to minimize the occurrence of problems and reaching a balance between economic and educational considerations.

11. **Chapter 6** highlights the various aspects of school enterprises. A wide diversity of structures and foci are to be found in school enterprise programs, depending on whether production for the market takes place predominantly in an enterprise or in a learning workshop. One can have either a close integration of training with production activities or the running of fully-stand-alone businesses. The two contexts – the learning workshop and the enterprise – should be seen as ideal types with a relatively high degree of functional specialization, but whose nature changes according to the nature and degree of interaction with the other domain. School enterprises incorporate elements from several formal and non-formal modes of organizing learning.

12. Since school enterprises emphasize market perspective without neglecting the pedagogical aspect, a critical step in the planning of school enterprises is the design of the curriculum that promotes core competencies. It is not enough to concentrate school enterprises in the urban areas. More important is their introduction in the agricultural context.

13. Other aspects of school enterprises pertain to teaching staff, regulatory framework, and external relations.

14. With regard to the external impact, there are questions whether school enterprises make a difference to employment, self-employment, economic development and the socio-economic survival of young people. There are also questions relating to their internal impact, such as do they develop relevant skills, improve learning achievement and work performance.

15. **Chapter 7** discusses the various financial options, and highlights those methods, which not only quantify the cost of training, but also attach a monetary value to the learning outputs. The main learning outputs of school enterprises may be characterized as follows:

- The learning outcome, i.e., the trainees' competencies and qualifications as skilled workers;
- The trainees' productive (and service) achievements, e.g., an apprentice's competency utilization in the production process, with a valuation according to the equivalent skilled-worker wage;
- Earnings from the sale of goods and services emerging from the training process as well as other proceeds: e.g., rent, tuition, income from the cafeteria.

16. The chapter also highlights some principles for assessing the suitability of the different modes of financing. These relate to educational and equality consideration.

17. Because of the urgent need to finance post-primary education and training, self-financing and cost-recovery methods of financing may have to be seen as not only supplementary options, but also rather as alternative sources to public finance. School enterprises nevertheless remain primarily institutions for training human resources, and places where education is a public and not a private good.

18. **Chapter 8** elucidates some of the challenges and factors that may enhance school enterprise environment.



### 3. INTRODUCTION

19. The present discussion on school enterprises is a revisit of a previous study which the author conducted in 1998 within UNESCO's UNEVOC project (Singh 1998). Two issues inspired the study at that time. One was linking the process of technical and vocational education to real work and market situations and the other was the self-financing of secondary schools and technical and vocational education institutions.

20. The above issues are of even greater importance today, and in fact have relevance for the whole post-primary education and training sector. Post-primary institutions in developing countries are increasingly expected to generate alternative resources of financing as well as to interlink with skills development and the labour market.

21. School enterprises are of paramount significance for the sustainability of learning and sustainable development. Central to the notion of education for sustainable development (ESD) (See, UNESCO Implementation Scheme 2004), is the view that a transition to a socially, economically and ecologically sustainable society is possible only by promoting learning from the perspective of lifelong and life-wide learning, engaging all spaces of learning – formal, non-formal and informal, from early childhood to adult life, and in which everyone is a stakeholder, be it the government, civil society or the private sector, the individual, the employer or the enterprise.

22. Equally important is the view that education for sustainable development is about respect both for academic learning as well as for practical and experiential learning. Experiential learning first immerses learners in an experience and then encourages reflection about the experience to develop new skills, new attitudes, or new ways of thinking. Recognizing the importance of experiential learning should not be seen as promoting a learning system for the poor or for that matter for the developing countries only; nor is it an attempt to denigrate academic knowledge in order to substitute it with 'practical know-how'. It is essentially to admit the numerous ways to learn and the many avenues which led to the mastering of skills knowledge and competencies, which lead to autonomy and self-sufficiency in the exercise of professional activities and social life.

23. School enterprise is an alternative model for linking the processes of secondary and technical and vocational education to real work and market situations, as well as providing self-sufficiency in financing. School enterprises, which combine market production with systematic vocational learning, bring conventional schools and vocational institutes closer to the realities of life, particularly the world of work and self-employment. The basic feature of school enterprise is the increasing interest and motivation of students in their studies. The quality and sustainability of learning is crucial to the quality of work and income-generation (Kafka et al. 2006). School enterprises inspire us to question pre-given syllabus and curricula and replace them with active learning processes that are developed by the learners

24. The issues that school enterprises seek to address are particularly relevant to developing countries:

- Current secondary and vocational educational models fail to adequately prepare students for the high probability of self-employment, which is a reality in most developing countries on account of the lack of formal sector jobs.
- Increase in the number of students completing primary education is not accompanied by increase in finance to respond to the growing demand for post-primary education.

25. Building and increasing additional and relevant capacity in post-primary education for young people in both rural and urban contexts will depend on making known some of the features and successes of the school enterprise model, even if the number of schools committed to this approach is still very small. The rural context is particularly highlighted in the two new examples from Paraguay and Benin (Kafka et al. 2006).

26. This paper seeks to highlight some of the successes of the school enterprise model in interlinking production with learning. By referring to literature<sup>1</sup> on various examples of school enterprises, it examines, first, the issue of school enterprises as part of a larger educational project, influenced by the wider social and economic climate and the bigger policy discourses of multilateral and bilateral agencies. Second: It spells out the conceptual framework as a useful yardstick for analyzing differences on the effectiveness of school enterprises. Third: It highlights the various features of school enterprises. The paper concludes by looking at factors that may enhance the school enterprise environment, and highlights some of the basic principles that need to be borne in mind while setting up school enterprises.

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<sup>1</sup> The examples highlighted from these studies are: school enterprises in vocational secondary schools (India); Service Production Centre, Vigyan Ashram at Pabal; Don Bosco Technical Institute, New Delhi; Don Bosco Self-Employment Research Institute, Howrah, West Bengal; Production Centre in Shantikunj Ashram, Haridwar, Industrial Training Institute Bangalore; Technical College of Wood Technology, Semarang, Indonesia; vocational centres, Papua New Guinea; MAN Salzgitter, Germany; Botswana brigades; small business centres in vocational training institutes, Ghana and Kenya; the Offices for Practical Works in Vocational Training, Algeria; The National Pioneer Centre Havana, Cuba; the training-cum-production workshops 'Talleres Públicos', Costa Rica; Jinsong Vocational Senior Middle School in Beijing; the Secondary Vocational School of Nangong County, Hebei Province; Xianyang Machine Tool Technical School; Baofengsi Secondary Forestry School; Guangzhou School No. 38; Guangzhou School No. 6. The Fundación Paraguaya Model; The Songhai Model, Benin.

## **4. THE CHANGING SOCIO-ECONOMIC ENVIRONMENT AND BROADER POLICY DISCOURSES**

27. The world is experiencing major changes in patterns of production and trade as well as dramatic innovations in technologies. Changes in the nature of work and the technologies of production and in standards for manufacturing and agriculture have pedagogical and educational implications. With new and complex inputs to factor into a production equation, other operations, and with them, new core competencies, become necessary. There is evidence that many developing countries are facing the problem of lacking skills that are highly developed elsewhere. The question arises, how and where are we going to get this skills-based education?

28. Even though the Millennium Development Goal 8 Target 16 mentions that “employment and “decent” work” are main pathways out of poverty for the poor, developing and implementing strategies for decent and productive ‘youth for work,’ entrepreneurship education, and more generally skills development have been sidelined rather than integrated into development and educational reforms.

29. Seen demographically also, many developing countries are presently experiencing a period of growth in a very young population. The World Development Report (World Bank 2006) emphasizes the importance of not losing the opportunity of human capital formation, which is most effective during childhood and youth.

30. While priority is being given to Education for All at the basic level, which is good, there is little attention focused on the articulation between education, skills development and entry into the labor market. The six Dakar goals have included the goal of “ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programs (UNESCO Global Monitoring Report 2002). Even article five of the World Declaration, Jomtien of the World Conference on Education in 1990 has been more progressive than the MDG goals, by including skills training, apprenticeship and formal and informal education programs (UNESCO 1990). However, coherent implementation strategies have been lacking.

31. Another important context to highlight is that primary education is advancing at a rapid pace. In Sub-Saharan Africa, yearly primary enrolments grew by about 40 million between World Conference on Education in 1990 and 2002 (World Bank 2006). Given this situation, it is crucial that the gains of primary education are consolidated by continuing education into the secondary stage, where the full potential of children can be realized. The World Bank’s New Agenda for Secondary Education (World Bank, 2005) argues that ensuring quality Universal Primary Education requires concurrent expansion of secondary education. It also warns against uncontrolled expansion of secondary education, especially of an education that is unrelated to the labor market and the learning needs of the students.

32. School enterprise could be a one way for governments to meet partially, the financial costs arising from the massive demand from children seeking entry to secondary education. Furthermore, since secondary schools are not only expensive but often irrelevant, school enterprises that combine production of goods and services with education, can be a good model to help pupils to complete the secondary stage. Currently, in most countries in Sub-Saharan Africa, the gross enrolment rates are below 40 per cent in secondary school.

33. The approach of school enterprise provides a possible answer not only to increasing the relevance of learning, but also provides a possible means of finance for the school or the vocational institute. It has the potential of contributing not only to sustainable development but also to sustainability of learning.

### **4.1 Challenges in secondary and vocational education**

34. With labor markets in low-income developing countries typically characterized by a lack of formal sector jobs, self-employment remains an important means of earning a living. How can traditional secondary

and vocational education institutions better prepare their students with skills needed to survive in the market and react better to changing market situations?

35. Overall trends point out that technical and vocational systems are far removed from market realities and that their graduates are out of touch with the working conditions and technical possibilities in small and micro-enterprises. Furthermore, budget allocations to technical and vocational education have often decreased dramatically and, in view of the high costs associated with this form of education, the time has come when developed and developing countries alike have to increasingly consider the possibility of generating alternative resources for financing technical and vocational education with minimum possible financial support from the government.

36. Not only have technical and vocational systems failed to facilitate an adequate approach to dealing with real-life situations in general, also so has our general educational system. Ivan Illich pointed out that most learning takes place in out-of-school contexts and is a result of unrestricted participation in life situations.

37. The question of increasing relevancy of education is not new. The World Bank had engaged with the relevance of secondary school education since the 1980s (Psacharopoulos and Loxley 1985). It pushed for pre-vocational training in many or most general secondary schools. However, findings with respect to the effects of pre-vocational versus general programs on the subsequent jobs and incomes of graduates had shown that they failed to provide a reasonable financial social return on the extra costs of the vocational components in the curricula. At the same time, the strategy of combining general secondary education with production met with disfavour among bilateral donor agencies on the grounds of the high costs, poor service infrastructure and ineffective linkages with the labour market of such projects.

38. Nevertheless, the question of secondary education relevancy needs to be revisited, because in countries with limited employment opportunities in the formal sector, it is particularly useful for learners not only to acquire technical skills, knowledge and competencies, but also to understand the role of an entrepreneur in a market situation. This helps in promoting entrepreneurship and self-employment among graduates.

39. What makes this revisiting even more challenging is the urgency of meeting the learning needs of the beneficiaries from rural backgrounds. (Kafka et al. 2006). Rural secondary school students come from farming backgrounds and they make up almost 70 per cent of the population in their respective countries. The dissemination of agricultural techniques to farmers is not enough (Kafka et al. 2006). Programs are needed to impart proper attitudinal and behaviour skills for young people, so that they see agricultural production and services in a positive way having a potential to provide a decent living (Kafka et al. 2006). The UN Food and Agricultural Organization (FAO) has been developing programs in youth education and training that aim to prepare young people to engage in agriculture. However, training programs in agriculture are going to have little success if they are not combined with entrepreneurship education, because technical training alone cannot lead to self-sufficiency and sustainability; what is needed along technical training, is an education that imparts new ideas and innovative practice in agriculture.

## **4.2 The international discussion on school enterprises**

40. During the 1980s, much attention was given to the combination of education with production at the level of international co-operation in the field of education. In November 1981, the 38th Session of the International Conference on Education adopted Recommendation No 37 on 'Interaction between education and productive work'.

41. 'Productive work' here does not only mean the production of physical goods alone, but also services such as tourism, hospitality, hairdressing, accounting, running a cafeteria. Further, the education of the whole worker is implied, not because it is required for production alone, but because it affects him or her as a critical being with a social and cultural understanding of the world of work. Productive work cannot be reduced only to what people do for a wage or self-employment.

42. It was recommended that UNESCO Member States should co-operate at various levels in the development of programs and practices through the exchange of information and experience, joint experiments and evaluation (UNESCO, 1982). In 1984, the 9th Conference of Commonwealth education

ministers was partly devoted to discussing youth unemployment and in this context it was noted that the 'criterion of production units within schools, and the integration of work experience with formal education' were among 'a number of different ways of relating schools more closely to the world of work'. UNESCO's international symposium on 'Innovative Methods in Technical and Vocational Education', held in 1989 in Hamburg, underlined further the international interest in production-oriented learning and teaching (Wiemann, 1989). One of the major objectives was to define elements of close co-operation between schools and enterprises both at the level of the educational system and at the level of the process of vocational learning.

43. In 1990, the Working Group on Production Schools organized an expert meeting with a specific focus on the theory and practice of production schools (*Arbeitsgemeinschaft 'Produktionsschule'*, 1990). The aim was to gain information on the feasibility of such approaches and to develop models of school enterprises and the specific conditions of their existence in less industrialized countries. The central motivation was to analyze reforms in didactic and vocational learning with special reference to school enterprises in industrialized countries, and compare them with corresponding attempts in less industrialized countries.

44. The principle of combining education with production continues to remain an important feature of education and training systems in less developed countries for several reasons, arising primarily from its potential contribution to the diversification of finance and relevance of learning for everyday life. The main questions that many countries still face are when and how to make the transition from subjects that have broad vocational relevance (language, mathematics, science and practical skills) to programs that will prepare individuals for particular jobs or clusters of jobs. Although the general education that schools can provide enhances the individual's trainability, job-specific and enterprise training is very important. International experience shows that such training is most efficiently provided in institutions under, or strongly influenced by, the ultimate employer and the reality of the market. This does not exclude the inclusion of practical subjects such as teaching applied science, biology, chemistry or physics, or subjects such as electronics, nutrition, fundamental health practices and sanitation at both basic theoretical and immediate practical levels. General education and practical education are important foundations for change, but so is job-specific training. In so far as one enhances and complements the other, this is a real foundation for change. Practical education does not suffice to make school-leavers both willing and able to become productively self-employed. Job-specific training is most important for creating self-employment, as well as for meeting the new challenges in the world of work.

45. Because of the above developments, alternative methods have emerged in conventional institutional formats that attempt to provide economically useful qualifications and facilitate their students' transition into the employment system in which graduates are able to immediately apply their skills. Within this perspective, there are entities that combine market production with systematic vocational learning that have come to be called 'school enterprises'. The introduction of production is assumed to bring the school closer to the realities of life, particularly the world of work, and goes beyond the prevailing thinking that individual lives are divided into a span of time just for study and another just for work. It is also justified by the need to find new ways of teaching and learning so as to increase pupils' interest and motivation in their studies. An important aspect of school enterprises is the motivation for effective learning by combining learning with production, in that the training underlines the importance of visible future returns. The teaching personnel are compelled to undertake continuing educational courses to adapt to new market conditions and to introduce new curricular conceptions adapted to new technological processes. Last, but not least, through the synthesis of education and production, technical and vocational education institutions are expected to exploit new financing options for meeting training costs.

## 5. CONCEPTUAL FRAMEWORK

46. The conceptual framework will enable us to map out a wide variety of experiences in different systems and institutions based on certain indicators. The notion of school enterprises is to be seen as part of a broader educational methodology of providing educational experiences which link the teaching-learning process with the world of work, so that students not only gain relevant skills, knowledge and attitudes and values, but also the necessary hands-on experience to apply these competencies in introducing goods and services. The conceptual framework for analysing school enterprises includes two fields or contexts (Hoppers and Komba 1996): working and learning. Education and training form part of the broader domain of learning, whereas productive enterprise forms part of the world of work. Each domain has its own characteristics and typical sets of activities. The major focus in combining the two domains lies in using productive enterprises as instruments to reinforce and enhance systematic and reflective learning, and for the sake of improving the relevance of education for later employment and self-employment, as well as for the sustainable socio-economic development of local communities and regions.

47. Although it is common to refer to education in terms of activities aimed at acquiring general knowledge, attitudes and values, and the term, ‘training’ to the acquisition of occupational or job-related skills, the division needs to be seen as a purely analytical one, as the two are interrelated dimensions within the domain of learning (Hoppers and Koumba 1996; Castro 1988). Training and technically specialized job-related skills and ‘general skills’ cannot be isolated from one another, as both are necessary for successful work performance. The notion, ‘productive enterprise’ goes beyond productive activities in a narrow sense, i.e., which stipulate as the only condition that the volume of the goods and services produced by the students is to be substantial. Where the specific term, ‘productive enterprise’ is used it is meant to cover work activities such as production process, organizing, planning, designing and marketing aimed at generating goods or services that have an economic, social and pedagogical value.

48. Only those productive activities are included in the context of educational enterprises where there is a shared conviction about their pedagogical value and their economic necessity (Greinert and Wiemann 1993). The income-generating aspect of educational establishments is to be seen as enhancing the learning potential of learners and as a focus of reflective learning. The notion of a school enterprise is illustrative of a location in which an educational or training institution is, at the same time, an undertaking related to the world of work. The training institute or school may be a public institution or one run by a non-governmental agency. Some ‘non-formal’ institutions may be quite highly formalized. The concept ‘school enterprise’ entails the combination of learning and production at several stages, such as the education and training stage, the production stage and the enterprise stage. The notion of school enterprises is an approach to learning involving an organized and direct interaction between the development of knowledge, skills and attitudes and values (competencies) on the one hand, and the production enterprise on the other. The subject is involved in both processes and there is some degree of planned and intentional interaction between them. The above view of school enterprises, however, does not imply that a planned introduction of an element of productive work automatically leads to the involvement of trainees in vocational learning and training.

49. The concept “self-sufficient’ schools” is another term used for school enterprises. They combine the practice of entrepreneurship and vocational education for increasing the relevancy of learning, as well as providing the school a sustainable means of finance. It is an approach, which is being currently being implemented by the international education NGO Teach A Man to Fish (Kafka et al. 2006). This NGO has experience with implementing two school enterprises, one in Paraguay and the other in Benin, and will be elaborated upon, under the section highlighting the various features of school enterprise.

### 5.1 Economic, educational and social objectives of school enterprises

50. The principle of the school enterprise serves a variety of economic, educational and social objectives. Seen from the economic perspective, many students who come from disadvantaged families and cannot afford to prolong their education find school enterprises a way to shorten the period of transition between school and self-employment. The linkage of education and production, while meeting the existing skill

requirements of the rural economy, can also help in diversifying the rural economy. School enterprises provide a good alternative for matching operating costs by means of production for the market.

51. Seen from an educational point of view, the knowledge and skills acquired can be used to provide the goods and services required in the community. Learning through hands-on experiences could improve the integration of theory and practice as well as assist in learning the role of different technologies and new methods of production. Apart from promoting the ability to create one’s own work, the basic thrust of school enterprises is to develop general personality traits or non-cognitive dispositions and orientations through involvement in real work processes and market production. The notion of combining production with learning in Waldorf schools (Rist and Schneider, 1982), in the alternative projects of *Jugendberufsschule* (Ketter *et al.*, 1986) in Germany, in Don Bosco schools (Oerder, 1991) in developing countries, as well as in the Danish production schools, derives mainly from the importance of practical learning in the development of personality, and the teaching of work tasks in order to inculcate values (Castro, 1988, pp.195-206). The expectations for these so-called ‘soft skills’ is increasing. Thus, the idea of school enterprises ensures a balanced development of physical, emotional and mental attitudes, and moral and aesthetic values in the interest of youngsters themselves and of society (UNESCO, 1982). Including components such as developing and generating innovative ideas, the in-depth analysis of a particular business field, as well as perseverance in trying to create a new solutions and so on, are all opportunities to enhance the curriculum.

52. The third rationale for the school enterprise is social. Social and pedagogical considerations are mutually related. Thus, preparing and training for co-operative and participatory forms of production have not only pedagogical value (learning in teamwork) but social value as well. It assists in bridging the gap that presently exists between education, the community and the work situation, thus promoting integration between education and development at the community level. Further, school enterprises are expected to reduce discrimination against manual work and promote social mobility. They are expected to teach students to recognize the economic and social values of the various types of work by inculcating in them, through education, respect for workers and for the realities of work and the world of labour in general (UNESCO, 1982).

53. There are a range of benefits inherent in school enterprises both for the students and for the institutions themselves.

**Box 1: Benefits of school enterprises, and some possible problems**

	<b>Benefits</b>	<b>Possible problems</b>
<b>Learners</b>	Ensures high quality of learning in order to ensure efficiency of production. Emphasis is on quality of learning and quality of work, along with income generation	Exploitation of student labor
	Immediate application and tangible benefits increases motivation, interest and ownership	Too much focus on production rather than on learning
	Increased relevancy of education	
	Soft skills (collaborative and cooperative forms of working) and solid experience of running a business	
	Nearness to technical and organisational reality	
	Ease of transition from school to work by enabling learners to recognize the importance of learning through experience	
	Inculcate entrepreneurship by experiencing it	
	Emphasise specialisation and genuine expertise in a given area (Kafka et al. 2006)	
	Students graduate with a confidence that they can run an enterprise within the school setting (Kafka et al. 2006)	

	<b>Benefits</b>	<b>Possible problems</b>
<b>Institution</b>	Increased autonomy and greater control of their budgets, so that investments in ICT equipment, to supporting student creativity in the arts can be made. This leads to diversity of experience (Kafka et al. 2006).	Lack of recognition by the mainstream educational system. In addition, because of this the process may not lead to further education and training possibilities.
	A school that can finance its own operating costs increases its credibility. It can be trusted with further investments.	Corruption
		Who should grade the examinations and provide school-level observations?
	Relations with the local economy on a learning and social partnership model are central to the functioning of school enterprise	
	Schools have to keep searching for improvements in educational work, because this is the motor that adds value to their products and services. This it does by reaching out to a greater number of beneficiaries and maintaining a competitive advantage.	
	Theory is not neglected. Rather it is put into practice	
	Learning by doing, one of UNESCO's four pillars of learning, is cornerstone of the school/institute's ideology.  Can promote a new teaching-learning culture and new mindset among teaching staff	
<b>Nation</b>	Certified skilled workforce	
	Empowered citizenry/multi-skilled people and entrepreneurial culture	
	Reduction on cost of training people	
	Reduction of costs arising from uncertainty of employment	
	Optimisation on the use of human capital	
	Reduce mismatch of skills requirement	

54. Awareness of the benefit of these issues allows institutions to put in place formal policies and management structures to minimize the occurrence of problems.

## 5.2 A rough typology of school enterprises

55. School enterprises can be roughly classified in terms of those that give priority to economic or educational goals and those that attempt to reach a balance between economic and educational considerations.

56. *Placing priority on economic goals.* The economic and financial situation of many school enterprises may require priority to be given to production goals. The recruitment of instructors from enterprises and the resulting socialization problems concerning patterns of thinking and behavior can also bring about a situation in which school enterprises are dominated by economic considerations. The pressure exerted by the partner enterprises to achieve specific market goals with the help of the school enterprise may be another factor that creates a situation in which economic considerations may dominate. In China, there has been a tendency to employ professional workers in addition to students in order to meet the quality demands of the market, although students can finish part of the production. (Cheng 1992; Hook 1997)



57. *Placing priority on educational goals.* On the other hand, the learning climate in a school enterprise, the prevalence of curricula and examinations and the socialization of teaching staff (recruited from higher education institutions) can bring about a situation in which learning dominates while production is neglected. There are, however, only a few examples, which indicate this trend.

58. *Balancing economic and educational considerations.* Most school enterprises have evolved diverse approaches to reaching a balance between economic, financial and educational goals. In the Indian Service Production Centre, Vigyan Ashram at Pabal, Pune (see Verma, 1996) the school enterprise has adopted the notion of a 'semi-commercial enterprise'. According to this notion, training in the management of school enterprises is given priority. In normal circumstances, the school enterprises would gain some profit, which is a good in itself. Yet the pursuit of profit is not taken to be the major purpose of such enterprises, as it would interfere with the fundamental goal of training students. In the Indonesian example, sekolah pendidikan industri kayu atas (PIKA) (Greinert and Wiemann, 1993), the outcome is the separation of training and market production. In this variation, the balance between economic and educational considerations can be reached when the school's production unit produces a quantity that can be sold in the market, whereas the teaching workshop produces the quantity (for market and internal needs of the school) that is required for teaching and practicing. Production for the market is a vehicle for learning complex behavioral patterns, gathering relevant experience and dealing with it in an abstract, reflexive manner.

59. The challenge of the Botswana Brigades (Chiepe, 1995) is also to find ways to optimize production while providing opportunities. Since some repetitive production processes lose their training value very quickly, some Brigades have hired permanent production workers to handle routine jobs. Trainees participate only in tasks where the training benefit is high. Overall, arriving at an optimal synchronization of different forms of training in view of the variable market situation is probably one of the most difficult problems of school enterprises, especially in view of the variable market situation. Regarding synchronizing economic activities and training programs, some school enterprises accept orders according to purely commercial criteria. Experienced instructors and technicians then sort the incoming orders according to their respective degrees (King 1985) of training suitability.

## 6. VARIOUS ASPECTS OF SCHOOL ENTERPRISES

### 6.1 Structure

60. A wide diversity of structures and foci are to be found in school enterprise programs, depending on whether production for the market takes place predominantly in an enterprise or in a learning workshop. One can either have a close integration of training with production activities or the running of fully-stand-alone businesses. The two contexts – the learning workshop and the enterprise – should be seen as ideal types with a relatively high degree of functional specialization, but whose nature changes according to the nature and degree of interaction with the other domain. The key conceptual frame is the interaction between learning and production and its location in the curriculum. Most school-based programs at the secondary school level, such as the schools in Zimbabwe supported by Zimbabwe Foundation for Education and Production (ZIMFEP), combine learning with production in a learning workshop. The emphasis here is on combined learning and production. The production division also serves as a training workshop. However in some schools, experiences with the logistics of production and the continuous dilemma between pedagogic and economic considerations have led to a separation of types of activities (Conradie, 1989). The emphasis here is on the combination of education with production, but production for the market takes place in a separate enterprise attached to the school or training institute (Greinert and Wiemann, 1993). The enterprise serves not only to produce goods and services for the market, but also as a location for applying skills learned in the workshops.

#### Box 2: Various aspects of school enterprises

Diversity of structures	<ul style="list-style-type: none"> <li>• Separation of training and market production</li> <li>• Integrating training and market production and services</li> </ul>
Organization of learning	<ul style="list-style-type: none"> <li>• Formal training methods such as course method, practical training and project method as well as as</li> <li>• ‘Apprenticeship’ and ‘on-the-job experience’ approaches (enterprise-based learning approaches)</li> </ul>
Core competency	<ul style="list-style-type: none"> <li>• Entrepreneurial skills</li> <li>• Self-employment skills</li> <li>• Process skills</li> <li>• Basic skills</li> </ul>
Curriculum	<ul style="list-style-type: none"> <li>• Translating the variety of work in a range of skills dealing with operational functions, inter-relationships, jobs, and work organization</li> <li>• Introducing systematic teaching aids</li> <li>• Reflecting opportunities to diversify into new lines of production</li> <li>• Learning about market analysis, product design, cost calculations, tenders, purchase of supplies, accounting, marketing and sales</li> <li>• Adapting curriculum to local context</li> </ul>
Training stages	<ul style="list-style-type: none"> <li>• Sequencing basic, specialized and apprenticeship , full-time operators, entrepreneurs</li> </ul>
Assessment	<p>New criteria for assessment need to be given more emphasis, such as</p> <ul style="list-style-type: none"> <li>• project work</li> <li>• teamwork and creativity</li> </ul> <p>Problem: Who should grade the examinations and provide school-level observations?</p>
Teaching staff	<ul style="list-style-type: none"> <li>• Well trained instructors for training</li> <li>• Master craftspeople for production, training and economic activities</li> <li>• Employment of local craftsmen, social workers, technical experts for support</li> </ul> <p>Problems of teaching staff:</p> <ul style="list-style-type: none"> <li>• Out of date knowledge</li> <li>• Teaching staff engaged in school enterprises in addition to their full-time duties in VET institutes</li> <li>• Change in mindsets</li> </ul>

Regulatory framework	With regard to: <ul style="list-style-type: none"> <li>• Use of earning,</li> <li>• Remuneration,</li> <li>• Upgrading of training personnel and production workers,</li> <li>• Choice of financing methods</li> <li>• The examination and certification procedures</li> <li>• Incentive structures</li> </ul>
Selection of students	<ul style="list-style-type: none"> <li>• Equity considerations</li> <li>• Market considerations</li> <li>• Rural background</li> </ul>
External relations: integration with the community	<ul style="list-style-type: none"> <li>• Sharing responsibility for production and services among schools, communities, non-governmental organizations, industry and informal sector micro-enterprises</li> <li>• Promoting contact with informal sector small enterprises; even delegating some responsibility for training to them</li> <li>• Providing counseling opportunities for continuing technical and vocational education (depending on the level)</li> <li>• Social partnership and integrated approach</li> </ul>
Main learning outputs of school enterprises	<ul style="list-style-type: none"> <li>• Trainees' competencies and qualifications</li> <li>• Trainees achievement in the process of production and services</li> <li>• Earnings from the sales of goods and services emerging from the training process.</li> </ul>
Principles for assessing different financing modes	<ul style="list-style-type: none"> <li>• Emphasis on putting a monetary value to the learning outputs</li> <li>• Emphasis not only on investment costs such as infrastructure, but also on operational costs, such as salaries, for training instructors</li> <li>• Emphasis on investment on effective linkages between school and community</li> <li>• Emphasis on training people from disadvantaged communities.</li> <li>• Emphasis on mixes of financing from governments, private institutions and donor agencies</li> <li>• Emphasis on self-sufficiency in financing, as against partial financing (Kafka et al. 2006)</li> </ul>

## 6.2 Organization of learning

61. School enterprises incorporate elements from several formal and non-formal modes of organizing learning and training for skill development. Formal vocational training is but one way of training. Enterprise-based training, such as on-the-job training, the apprenticeship method and 'attachment learning' (Bowman and Anderson, 1976) are modes of training that complement formal training methods. These refer to an attachment of the learner to the person or agency providing the training. Several studies have investigated the contribution of these informal processes of learning to skills development and their relevance to future employment (Institute for Scientific Co-operation 1997). It will be useful, therefore, to elaborate the main features of the various modes of organizing learning and training.

## 6.3 Formal training methods

62. According to Greinert and Wiemann (1993), normally school enterprises also incorporate several types of training methods that have evolved for teaching vocational competencies outside of genuine work situations. These basic types include the training course method, practical learning, and the project method. These forms of training have evolved in situations existing outside the real work process and economically imposed constraints, and constitute an essential form of training conducted in vocational centers, industrial training institutes and off-enterprise training centers. Training according to modular learning units has also been employed in some case studies of school enterprises (Costa Rica). This training is based largely on modular learning units similar to the modules of employable skills (MES) developed by Iain (1982). One advantage of the MES training approach is that it allows the choice of individual learning programs suited to the specific qualification needs, starting level of technical skills and time constraints of each participant.

## 6.4 Informal training methods

63. Since school enterprise is a particular form of enterprise, it may be necessary to highlight some of the features of this "enterprise-based training" as a *learning model*. School enterprises that follow methods that are employed in enterprise-based training include informal apprenticeship and on-the job training. In

traditional apprenticeships the same master craftspeople, journeyman or experienced workers responsible for the production process and economic activities also transmit skills and knowledge to trainees, taking orders, negotiating with customers, passing on parts of their own work to trainees, and planning the work and work sequences, often contributing to the work and helping trainees. The craftspeople monitor the work and evaluate the work outputs.

64. Informal apprenticeships can also be used as a way to delegate responsibility of some training to enterprises, particularly in the informal sector, in order to provide entrepreneurship and specialised training to a greater number of students. This is especially important because of the limited training capacity in school enterprises. The traditional apprenticeship training in the informal sector has been an important way to complement training in the business centres of public training institutes in Ghana and Kenya. Despite the acknowledged limitations of the apprentice masters as trainers, there is clearly merit in expanding the intersection between these two training sectors (Ferej, 1996). Communicating the rudiments of business know-how in association with apprenticeship training and participant observation, rural or urban, is generally successful in formal vocational and technical training institutions.

65. In developing countries, such as most countries in Africa, the apprenticeship has often been viewed as an aspect of industry rather than of education. The apprentice in the informal sector is a low-cost laborer ultimately rewarded for years of menial service. The apprentice is indentured and only after trade skills are acquired does the apprentice become free to travel ('journeyman'). This model of training served industry well when much of the labor needed was unskilled. However, today industry is moving towards a greater need for higher skills. There is a need, therefore, for school enterprises to adopt an apprenticeship model that does not base itself upon the cheap workforce model of the developing countries' informal sector, but instead is conceived as one in which a variety of process skills develop through active learning. Such on-the-job training is recognized as a part of the educational system when it is deliberate, rather than accidental.

66. All jobs where productivity, output and innovation are influenced by experience have an educational component.

67. In the context of school enterprise, the *apprenticeship model of learning* refers to the acquisition of a vocational skill through work under the supervision of established practitioners or master craftspersons recruited into the school enterprise. Apprenticeships vary substantially in duration, covering both artisan and craft skills as well as both commercial and manual skills. In the case of PIKA (Greinert and Wiemann, 1993), the apprenticeship is driven by a large number of complex moves that must be learned to complete a process. PIKA, for instance, takes on apprentices who are ultimately expected to be able to create an organ single-handedly. Others are motivated by a commitment to learning different aspects of the trade. Building tradespeople like plumbers and electricians seem committed to this kind of on-the-job training program. In fully fledged apprenticeships, the attachment to an enterprise continues with the utilization of increasing manual and commercial skills. Apprenticeship arrangements commonly involve acquiring skills that have wide applicability, hence are portable across agencies and activities.

## 6.5 Core competences

68. *Entrepreneurial skills*: To enter the market requires innovative ideas. Lacking this means that existing businesses – which already have customers, experience with suppliers, knowledge about the product and their environment – will have a competitive edge. Entrepreneurial skills are needed to maximize the returns to more technical training. This is particularly pertinent for rural youth. Simply teaching them farming methods and extension services will not be enough. They probably already know how to do that. In order to add value to that technical knowledge, it is necessary to complement technical methods with programs that develop core competencies and entrepreneurial behavior and attitudes.

69. Operating in a competitive and increasingly complex environment demands entrepreneurial behaviour as well as people who have the necessary competencies to work within such contexts. Needless to say, entrepreneurs, need to have general know-how and an understanding of business management; however, the emphasis in entrepreneurship is on innovation and the start up of a new venture, which is different from business administration and emphasis on only the organizational aspects of existing units. At the Berlin

Institute for Entrepreneurship of the Free University the workshop method, called the entrepreneurship laboratory, is used to develop and generate innovative ideas for establishing a business. Students analyze a particular business field in depth, they refine ideas and persistently reassess problems. Furthermore, new ideas are introduced into entrepreneurship by seeing that they are in tune with society, environmental and social concerns, rather than being viewed simply in terms of short-term profit-making (Faltin 2000).

70. *General components of vocational skills.* General components of vocational skills have direct relevance to work. Many of these are actually ‘process skills’, whereby the product is of lesser importance than the way the trainee goes about doing things. Examples are a scientific approach to occupational trades, the ability to identify problems and explore solutions or to plan and execute one’s work, to understand the management structure and work organization of the enterprise, to solve problems by learning to integrate various techniques, social processes, various workplaces, various social relations, various management and administrative functions (job scheduling, job evaluation, insurance and health) and various production and entrepreneurial skills.

71. *Basic skills at the workplace* (Carneval *et. al.*, 1990) describe the need in the modern workplace for basic competencies such as oral communication skills, adaptability skills, development skills, collaborative skills and leadership skills. Although this term has come to be used in modern industry and its role in supporting education in basic competencies, school enterprises have a similar role to play in promoting basic skills (reading, writing and computation), collaborative skills (interpersonal relations, teamwork and negotiation); communication skills (listening and speaking); development skills (building confidence, motivating, setting goals and planning) and, finally, adaptability skills (resourcefulness and creative thinking). In recent years, there has been much international attention to the contribution of key qualifications, or generalized capabilities in vocational preparation. It has been argued that in a rapidly changing environment, schools should promote the development of generalized capabilities that are built into vocational skills. The greater interest in promoting pupil creativity, problem identification, trying out different solutions, manipulative skills, familiarity with different materials and technologies, insight into the practical applications of scientific concepts and principles have led to a reduction in the distance between vocational and general competencies.

72. The competency profile, i.e. the mix of generalized and vocational skills imparted by a school enterprise ultimately depends on the form of learning adopted. Ideally, once the aims of the program have been clarified, these should be translated into a range of specific skills, knowledge, understanding and attitudes, which the program can help to develop.

## **6.6 Integrating productive activities into school curriculum**

73. Any discussion on job-related vocationalized competencies and education linked to the market and employment will need to take account of questions relating to the extent to which school enterprises are in a position to adopt a market perspective without neglecting pedagogical aspects. Nearness to technical and organizational reality and the applicability of skills is an important principle of school enterprises. The work organization can take the form of a crafts people’s workshop, a construction site, a production assembly line, a bakery or a farm. The technical and social organization of work can be disclosed to the trainee via abstract theory and reflection. In many schools, however, school enterprises overstress the technical aspects of production. In doing so, they too frequently neglect the work organization aspect. Such school enterprises put a higher emphasis on the economic goals while neglecting their educational goals.

74. Integrating production process into the curriculum entails translating the complexity and variety of work reality (industrial work, services and commerce), such as the operational functions, inter-relationships, e.g., the mechanical systems, work organization and jobs into a range of skills in order to make the complex reality more comprehensible for the learner. Learning is supported by introducing systematic teaching aids (such as textbooks and tables, laboratory devices and audiovisual aids), the express purpose being that learning goals are achieved.

75. A curriculum need not always be in written form. It could be designed on the basis of products around which basic technical skills can be learned. This method has the advantage of saving on programme costs, as

products can be sold or used for own consumption. Furthermore, the products can be more easily adapted to local market demand than written materials, and are less amenable to standardization. Instead of introducing industry-oriented theoretical courses built around productions manufactured in the modern formal sector, it makes more sense to design courses around the repair of products. Again, the repair of products does not lend itself easily to a standardized curriculum.

76. A major problem is producing identical items within the restricted geographical space of a local settlement. Therefore, training contents should not be the same for all, but should reflect opportunities for diversifying into new lines of production and products. This may help the graduates from school enterprises to overcome extreme competition while setting up their own enterprises. The restricted financial situation of youngsters means that they may have to creatively adapt to available technology later on. A challenge of curriculum development is, therefore, to develop courses built around improvised techniques.

77. Apart from learning how to produce goods and services, it is necessary to learn about market analysis, product design, cost calculations, tenders and purchase of supplies, accounting, marketing, sales.

78. A critical step in the design of the curriculum would be to identify, on the basis of a broader conceptualization of employment and business-related skills, the desirable range of skills and knowledge outcomes, then to operationalize these in terms of the involvement in learning situations of the learners. For example, an awareness of the factual method is better achieved through the vocational course method. On the other hand, the project method is more suited for using information to solve new and unanticipated (not in the text) problems. Apprenticeships are a good way to acquire application skills, i.e., to learn to apply information (Weinert and Wiemann 1993). Both, development of innovative ideas as well as competencies related to the day-to-day organization of production processes need to be emphasized.

## **6.7 Curriculum in agricultural entrepreneurship**

79. It is not enough to concentrate school enterprises in the urban areas only. More important is their introduction in the agricultural context. This would have direct benefits to rural youth in setting up innovative enterprise and valuing agricultural life, rather than forcing them to migrate to urban areas, where they would otherwise be obligated to take up some petty or survival job. Below are two examples of self-sufficient schools implemented in two rural secondary schools of Paraguay and Benin (Kafka et al. 2006), which focus on a agricultural entrepreneurship. These are being highlighted because they represent the relatively newer examples in the field.

**Box 3: The Fundación Paraguaya Model**

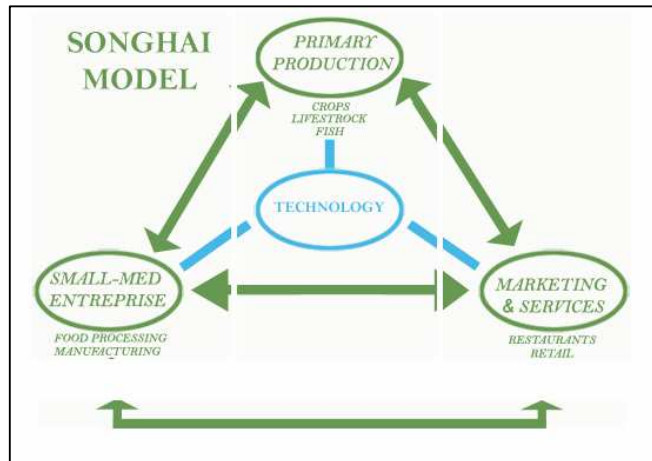
“The full course is divided into three years, and caters to a co-ed body of 115 students aged 15 to 18. Business plans for each activity emphasize the profitable use of student time – both from an educational and financial perspective. Students in the lowest year receive as wide an exposure to different activities as possible focusing on theory and practical skills. Those in the final year are able to specialize and build on their entrepreneurial skills by taking over responsibility for the profitability and productivity of their chosen business areas.

As an accredited high school, alongside the agricultural and entrepreneurship education program students study traditional academic subjects (math, languages, science etc.). Purely academic teaching staff are distinct from agricultural & enterprise trainers, the latter taking direct responsibility for the profitability of their activities in addition to the educational achievements of their students. Curricular reform is however underway and is designed to increase the linkages between academic subjects and their application to income generating activities (while nonetheless adhering fully to the national curriculum).

The course ensures that on graduation students not only have the skills required to start out in business themselves, but also are extremely sought after as employees on ranches and commercial farms. Because successful graduates also receive a nationally recognized qualification they retain the option of continuing in higher education – indeed many choose to do so, and several have even won highly competitive scholarships to attend a well-known international agricultural research centers.

Practical training covers a wide range of agricultural activities (animal husbandry, horticulture, aquaculture etc.), while value-added areas (e.g. specialist cheeses) offer students a chance to build commercially valuable skills. Development of such higher profit-margin products is key to maintaining the competitiveness required for self-sufficiency. Course graduates embarking in business continue to benefit through the availability of microfinance start-up loans.

Now just over half way through its five-year plan for attaining full financial self-sufficiency - and despite having only 60 hectares of land to work with - the school is already covering almost two thirds of its recurring costs from production and sale of goods and services”. (Kafka et al. 2006)



**Box 4: The Songhai Model, Benin**

“The Songhai Center operations can be divided into three key areas

- i) agricultural and entrepreneurial training
- ii) production units, and
- iii) research and development into sustainable agricultural practices.

These divisions overlap in numerous ways with trainees taking active roles in production units as part of their education, and the results of R&D activities feeding back into improved production as well as more advanced educational materials.

Entrance onto Songhai’s core 18-month course (basic training) requires a certificate of primary school completion, and accepts both male and female students in the 18-35 age range. Comprehensive agro-technical and business education is provided with practical work occupying around 90% of participants time.

The requirement to provide a rounded education means that student labor alone is not sufficient to support the necessary level of production required for financial self-sufficiency. To this end, a large staff of permanent and temporary employees is maintained to augment the institution’s capacity.

A secondary ‘application’ phase lasts between one and two years. In this phase students, working normally in teams, draw up and implement their own business plans. Work takes place within the Center’s dedicated extension spaces, and start-up credit is provided subject to the quality of plan presented. Success in this phase results in the award of a certificate of achievement, moreover after repaying their start-up loan; all profits from their work accrue to the students.

The inter-relation of components of Songhai’s work, and their contribution towards its financial self-sufficiency are expressed in the diagram inset.

In addition to its direct teaching work, Songhai maintains a graduate network which it uses in its community outreach work. Alumni groups bring the members benefit such as being able to sell surplus produce through Songhai when needed”. (Kafka et al. 2006)

## 6.8 Training stages

80. Once the technical and work organizational aspects of the production process are translated into a range of skills, it is possible to scale the skills according to basic, intermediate and advanced skills. The structure and size of school enterprises determines the extent and depth of the skills imparted to the trainees. In some schools, such as PIKA in Indonesia and the Don Bosco Technical Institute in India (Don Bosco Technical Institute, 1997), there are more options to structure the sequence of production activities and allow different approaches to complement one another. As a result, it is possible to have different stages of vocational education ranging from basic, specialized and apprenticeship stages to being full-time operators and entrepreneurs. This contrasts with the business centers in public technical institutes in Ghana and Kenya



(Abban and Quarshie, 1996; Ferej, 1996), as well as the example of the Industrial Training Institute in Bangalore (Awashti, 1996), where delegating responsibility to non-formal provisions and informal sector apprenticeships for the more explicit application of vocational specializations makes more sense, as governments have to choose between investing in vocational education for the few and an improved quality of vocational education for the many.

## **6.9 Assessment**

81. There is the problem of how productive work should be assessed, particularly how to capture the more complex learning outcomes such as cognitive and problem-solving skills and practical competencies. In the context of school enterprises, new criteria for assessment, such as project work, teamwork and creativity need to be given more emphasis. Many questions remain, however. Who should grade the examinations and provide school-level observations? The answer could include teacher associations, parent committees and representatives of the ministry and the academic community.

## **6.10 Teaching staff**

82. Without well-trained instructors, school enterprises cannot be successfully implemented. School enterprises incorporate the notion of social education and effective linkages between school and community as well as between production and learning. These extra functions of school enterprises require expensive investments in adequately qualified teachers and instructors as well as in the employment of local craftsmen, social workers and technical experts for support. Furthermore, with regard to equity and social considerations, the training of people from low-income families requires more time and personnel in order to make up for restrictive out-of-school influences.

83. In the dual system of vocational training in Germany (Greinert and Wiemann, 1993), teaching staff in school enterprises include a wide variety of personnel. Master craftspeople are normally responsible for production as well as training and economic activities, while instructors are responsible for training. They supervise and help trainees acquire certain skills, knowledge and attitudes. Theory instructors hold theory classes. Experts from industry, such as qualified engineers, are expected to offer expert advice on demand. However, in most of the school enterprises in developing countries, teaching staff are expected to participate in more than one function. They are responsible for not only the production process but also for production for the market, and they are, at the same time, responsible for making a meaningful vocational education possible in theory and practice. However, effective functioning of school enterprises necessitates a division of labor of teaching staff with different skills and different backgrounds.

84. There are several problems faced by the teaching staff in school enterprises: teaching staff may find that their productivity is low because of their out-of-date knowledge and experience; they may not be able to perform at a high enough standard and the training of technical and vocational teachers may not have included a true exposure to the world of job and enterprise related competencies. There may be a low motivation to work in school enterprises because of the lack of career mobility resulting from their lack of industrial experience. The trainers may be engaged in school enterprises in addition to their full-time duties in technical training institutes. This leaves them very little time to devote to the preparation of course material. They have usually had their training a long time ago and usually have no pedagogical experience themselves except for from demonstration and imitation. Overall, licensed teachers with an official mentality may be inherently less suitable instructors than are master craftspeople, technicians and engineers. The latter instructors can play an important role in imparting existing skills needed by local enterprises as well as in transmitting new emerging skills and, therefore, creating new markets.

85. The institutional level, the role and responsibilities of the head teachers and the staff are crucial. Those who get involved in school enterprise programs find themselves turning into part-time farmers, wood or metalworkers, builders, supervisors of working parties, office managers, procurement officers and financial administrators. Very often, they have received no prior training for these roles, or their original training proves to be insufficient. School enterprises may also involve extra duties during out-of-school hours with regard to preparation, repair or maintenance, extra-curricular activities, industrial visits or community

service. This is without counting the large amounts of time and energy being spent on professional development activities away from school.

### **6.11 Regulatory framework of school enterprises**

86. School enterprises must have a certain freedom to move on the market. This autonomy should also extend to the training concept, the selection of students, the use of earnings, the remuneration and upgrading of training personnel and production workers, choice of financing methods, the examination and certification procedures and various other regulation and incentive structures. Public educational institutions may lack an effective relationship between the school and the market. This may hamper the effective functioning of school enterprises. By contrast, integration with the market may be easier and more real in the case of programs conducted by non-state organizations and local community bodies.

### **6.12 Selection of students**

87. According to Grierson and McKenzie (1996), selection criteria need to be consistent with the development objectives of the vocational institute. If self-employment is the focus of a school enterprise, then trainees who have an aptitude for self-employment should be selected. This has been demonstrated in the case of the Don Bosco Self-Employment Research Institute, Calcutta (Lohman-Kuhnle, 1992), which selects students based on their social and economic disadvantage as well as their entrepreneurial skills. Equity considerations play an especially important role among school enterprises that are run by church organizations, rather than private industry. The good opportunities for graduates of the Don Bosco technical institutes to find jobs in the modern sector induces middle-class families to obtain a training place for their children, even in schools set up for poor children. Nevertheless, many of the Don Bosco institutes recruit children exclusively from very poor families.

### **6.13 External relations**

88. With regard to the external environment, issues meriting attention are the sharing of responsibility for production and services among schools, communities, non-governmental organizations and industry. School enterprises must function in the market place and be quick to adapt to the demands of new technologies and processes; School enterprises offer not only products but also services, such as information services, advice, further training courses for regional industry and the informal sector, technology transfer and enterprise development through institutional and enterprise networking (The Salzgitter MAN Nutzfahrzeuge AG Werk Salzgitter, 1994). School enterprises are suitable places for providing opportunities for continuing technical and vocational education. In this connection, the school enterprise assists adults in the world of work. The modern equipment of the school, the level of training of its teaching staff, and its technical and information resources (a technical library, a collection of standards, learning media and so on) allow the school to provide competent counseling to enterprises in terms of entrepreneurship and management (such as establishing new enterprises, accounting and bookkeeping) and in technical terms (such as an introduction to new technologies).

89. While school enterprises provide skills for traditional and new jobs, there needs to be close co-operation with enterprises to enhance the quality and efficiency of product development, production and maintenance. Large enterprises can provide technology and expertise to trainees in school enterprises in both traditional and newly emerging skills. Even small enterprises in rural and urban informal sectors can provide experts to provide the training needed for existing jobs and production practices.

90. An indispensable prerequisite for enterprises to play a major role in vocational education is the attitude of the entrepreneurs and trade unions in supporting school enterprises (for example, in Germany). Another important function of school enterprises could be promoting vocational training for existing micro-enterprises in the informal sector. These take into account the principle of satisfying basic needs through the development of appropriate technology, regional and community development, self-help, self-employment and self-management. The interlinking of education and production is flexible and varies according to the

basic needs approach taken, as in the vocational training centers, Papua New Guinea and the public workshops of the Instituto Nacional de Aprendizaje (INA) Costa Rica (Haan, 1989; Lohmar-Kuhnle, 1992). Support usually includes retraining, marketing advice, intervention with suppliers and officials, fact-finding and liaison with the local market.

## 6.14 Impact of school enterprises

91. With regard to the external impact of school enterprises the relevant questions are: does the incorporation of market production in schools make a difference to employment, self-employment, economic development, and the socio-economic survival of young people and the life chances of girls? With regard to its internal impact, does it develop relevant skills? Does it improve learning achievement and work performance? Even though the economic contribution of school enterprises may remain modest, especially in the initial stages of their introduction, yet, at the level of subsistence, the sustained involvement of pupils in commercial production for a long time can be crucial to the improvement of their working and living conditions. This involvement helps to prepare students for cost-saving, less hard and more effective subsistence work for improving their home and working conditions through their own efforts. With respect to individual working careers, personal development, and the development of middle-level specialists, school enterprises give good basic training or full qualifications. School enterprises develop the necessary competencies, i.e. skills, values, knowledge and attitudes amongst students for meeting the challenges of the world of work and, especially, enhancing their capabilities of being self-supporting (through self-employment or self-management).

92. For school enterprises to be effective there should be clarity with regard to what role market production in the educational context should play within educational and vocational and technical institutions, and what they are supposed to achieve. Are they supposed to achieve self-employment and enterprise development or industrial employment? Brigades in Botswana originally focused on self-employment generation *vis-à-vis* employment in the formal sector, rural development *vis-à-vis* industrialization, and training in rural areas versus training in urban areas. Vocational training centers in Papua New Guinea have introduced market production so that youngsters are in a position to earn a living upon returning to their villages. The broad impact of school enterprises has to do with the fact that their intended objectives go beyond the conventional orientation of classical vocational training. The objectives are more comprehensive, i.e., school enterprises offer training not only in the classical trades, but also in activities that satisfy basic needs to secure people's survival. They extend beyond training and production to the marketing of consultancy services, product development, technology transfer and information services.

## 6.15 Mixes of private and public roles

93. Literature on school enterprise shows that there are a variety of initiatives with both public and private roles and responsibilities.

94. The sponsors in school enterprises are mostly governments, private institutions and donor agencies. Private sponsors include churches and non-governmental agencies. Their existence is often separate from the management of the school.

95. The importance of an environment that will encourage and accept widely dispersed initiatives in such endeavours has long been stressed. School enterprise is increasingly coming to be incorporated in government educational policy. The manner in which this is being done is unique in India where the government has delegated apex institutions to provide adequate guidelines on the planning and implementation of school enterprises. In China, also, the open door policy, and the creation of special economic zones in certain areas of China have provided the momentum for vocationalizing to change the ratio of general secondary school students to vocational school students (Hook and Lee, 1997). School enterprises have become an accepted part of the school with considerable support and guidance by state laws, local ordinances and policies (Cheng, 1992, pp.47-52). The practice, now common in industrialized countries, is for ministries of education to set a curriculum framework with attainment targets that specify types of skills and knowledge, and for appropriate curriculum organizations to develop model work plans for

institutions to use as references. This state controlled market model may be useful for less industrialized countries as well.

96. External donor agencies participate in school enterprise programs in a significant way, being directly involved in key elements of the programs, including the very design of the learning content, its substance, structure and methodology. The case studies of the Don Bosco Technical Institute (India) and PIKA (Indonesia) illustrate that a greater involvement of donor agencies generally assures the successful launching of a new approach. However, the danger clearly lies in a poor spread of these innovative approaches.

97. More recently, international NGOs such as the Teach a Fish to Fish (Kafka et al. 2006) promotes school enterprise. It puts an emphasis on financial sustainability and economic self-sufficiency, without ignoring core competencies and educational aspects.

## 7. FINANCIAL OPTIONS FOR SCHOOL ENTERPRISES

98. Closely related to the question who should bear the cost of school enterprises is the question of the mode of financing school enterprises, as they are not merely commercial institutions oriented to the goals of market production, but primarily oriented to the goals of training and education as well as to social goals.

99. Theoretically, there are at least three choices in financing school enterprises (Greinert and Wiemann 1993).

- One option is combining public and private sources as well as profit-making and non-profit-making means. This could mean a combination of direct financing from Government budgets, the partial self-financing of school enterprises with assistance from donor agencies, and complementing training in school enterprises with apprenticeship training in the modern sector as well as in the informal sector, carried out mainly by private enterprises at their own expense in accordance with their labor demands.
- The second option is cost recovery methods, such as fees for laboratories, marketing of enterprise copyrighted inventions, contracts, consultancies, and sales of products and services. Another form of cost recovery is charging fees to the enterprises benefiting from the supply of skilled labor, and partial cost recovery through fee charged to the trainees.
- The third option is increasing institutional efficiency. This includes economic efficiency in the use of available educational resources so that the institution is in a position to finance its operation at cost from its income. This includes close attention to student-teacher ratios, less expensive contractual arrangements and divergence in salaries to reflect market demand for students.

100. A major *raison d'être* for establishing school enterprises is the belief in internal economic efficiency in the use of educational resources, particularly in field of public sector education where the gap is widening between the increasing demand for education and training on the one hand, and the limited amount of resources to meet such demand on the other. According to Greinert and Wiemann (1993), using analyses on educational efficiency from the USA, most methods for measuring educational efficiency attempt to measure the performance of training and compare it with the necessary inputs in order to obtain information on the optimal utilization of financial inputs by decision makers. According to these methods it becomes necessary not only to quantify the cost of training, but also to attach a monetary value to the learning outputs. The range of learning outputs subject to evaluation is enormous. Nevertheless, the main learning outputs of school enterprises may be characterized as follows:

- The learning outcome, i.e., the trainees' competencies and qualifications as skilled workers;
- The trainees' productive (and service) achievements, e.g., an apprentice's competency utilization in the production process, with a valuation according to the equivalent skilled-worker wage;
- Earnings from the sale of goods and services emerging from the training process as well as other proceeds: e.g., rent, tuition, income from the cafeteria.

101. The learning input (academic achievement) comprises two broad categories: those over which educational authorities have no control (the previous educational and job experience levels of students and their socio-economic background, gender, ethnicity, home environment, learning ability and interest) and those over which educational authorities have considerable control. Within the latter group, further differentiation can be made between financial inputs within the scope of school enterprise (teachers, buildings, teaching aids) and elements involving no direct financial expenditures or costs (value-added concepts of learning, incremental learning and instructors' class room behavior).

102. Educational efficiency is assessed in several different ways: cost-benefit analysis, cost-effectiveness analysis and input-output analysis. (Greinert and Wiemann, 1993, p.39).

## **7.1 Principles for assessing the suitability of the different modes of financing**

103. It is mostly in well-established school enterprises existing outside state control that the training costs are fully covered by the income of the school enterprise, both from the training and the production divisions (PIKA, Indonesia and Don Bosco, India). However, when assessing the suitability of the different modes of external financing, the educational and equity considerations should be taken into account (Greinert and Wiemann 1993). The emphasis on investment costs for physical infrastructure, equipment and teaching material and the neglect of operating costs, such as salaries, training instructors and social multipliers, is detrimental to the successful implementation of the learning objectives of school enterprises. Without well-trained instructors, school enterprises cannot be successfully implemented. School enterprises incorporate the notion of social education and effective linkages between school and community as well as between production and learning. These extra functions of school enterprises require expensive investments in adequately qualified teachers and instructors as well as in the employment of local craftsmen, social workers and technical experts for support. Furthermore, with regard to equity and social considerations, the training of people from low-income families requires more time and personnel in order to make up for restrictive out-of-school influences.

104. Another important principle of assessing the suitability of financing school enterprise is the emphasis on self-sufficiency (see Kafka et al 2006). This is in contrast to the partial approach in which schools have found ways to generate additional income to support their activities – from producing items for sale and running small shops, to hiring out their facilities and expertise. In contrast to these partial approaches, Self-Sufficient Schools focus on schools that ‘covers the costs of providing and education to its students from internally generated revenue rather than relying on external financing or user fees’ (Kafka et al. 2006), and these can be either fully stand-alone businesses or integrate training with production activities.

105. Because of the urgent need to finance post-primary education and training, self-financing and cost-recovery methods of financing may have to be seen as not only supplementary options, but rather as alternative sources to public finance. School enterprises nevertheless remain primarily institutions for training human resources, and places where education is a public and not a private good,

## **8. CHALLENGES AND FACTORS THAT MAY ENHANCE SCHOOL ENTERPRISE ENVIRONMENT**

106. Several factors may enhance the environment for school enterprises:

- Government could improve training's responsiveness to market forces by building a capacity for labour market analysis, the monitoring of training costs and outcomes, and information-gathering from employers.
- School enterprises must be quick to adapt to the demands of new technologies and processes, all of which translates into an adjustment in the training content.
- It is important to ensure that trainees do not become low-wage workers or bound servants to the cause of production.
- The incentives that encourage the achieving of outcomes include reduced taxes for school enterprises, investment incentives, subsidized wages and preferred prices as well as industrial parks where the enterprises in them are exempt from taxes for a certain period. Industrial parks can be designed to enable students to be strongly established before they have to face the rigorous competition of the world of work. In focusing on productivity and competitiveness, school enterprises should not lose sight of the need to bring the poor into these schools.
- Access to a school enterprise should be open to everybody, including the poor. Post-training support structures should be put in place in order to help the poor to start their own businesses. Poor people's knowledge and ideas must be taken into account when improving their productivity and earnings. This is crucial, if the idea of a school enterprise is to get people out of poverty. Students may be encouraged to undertake skills training because of a stipend, or poorer adult workers may be exempted from paying fees. The location of school enterprises in poor areas can be a major source of skills acquisition and skills upgrading for the economically disadvantaged, especially those working and surviving in the informal sector. The business risks arising during the starting phase should be taken over by partners.
- School enterprises need to promote an ecological way of production (no expensive outlets, no wastage of packaging materials and no overheads or corporate boardrooms).
- Running a school enterprise will require a drastic change in the mindset of teachers and the management. Teachers have to take the financial responsibility for the learning of their students and get used to operating in an uncertain financial climate. Senior administrators need the skills to be able to balance strategic commercial decision-making with the educational needs of their students. Teachers need to be business specialists as well as educators. (Kafka et al. 2006)
- Robust systems for financial management need to be put in place far beyond those required by traditional schools.
- Rigorous policies need to be developed to prevent exploitation of students, and to align staff incentives with educational outcomes of their activities.
- School enterprises need to constantly adapt their activities to maintain profitability. They may do this by finding a competitive edge over their rivals moving from primary production to supplying equipment for primary producers. (Kafka et al. 2007).
- School enterprises, which offer higher wages, greater performance incentives, and increased training opportunities, are better positioned to attract and keep the best talent. (Kafka et al 2006)

107. School enterprises will require advice from experts in the government, private enterprise institutions or universities.

108. The government must recognize the certification of school enterprises. Efforts may have to be made to enhance the social prestige of non-formal institutions by establishing communication with formal institutions and by endeavoring to obtain official recognition for the diplomas and certificates. To the extent that school enterprises may socialize students to simpler occupations, it may implicitly deny them access to occupations that require a good foundation of general academic science. It should, therefore, be possible to return to the academic stream without undue loss of time.

109. An essential element can be the enhancement of networking among teachers, managers and educationalists involved in school enterprises. Learning from each other can take place between institutions, or between regions and districts, and it tends to be very inspiring for all participants. The school management should co-operate with representatives of the local economy, community, and region.

110. For school enterprises to continue, networking, research, increased experimentation and funding will be critical. At present, there is very little research into income generation in schools that actively seek to cover all their costs through a combination of income generating strategies. This research is urgently needed. This should include a study on the impact of such schools on their beneficiaries. More examples, in more countries, covering an even wider variety of activities, will be required to build up a critical mass of knowledge about the replicability and environment-based limitations of financial sustainability in schools.

111. Because of high infrastructural investments, the need to transform schools into financially sustainable institutions will require huge investments in production capacity, infrastructure, and human resources. This will require the backing of donors (Kafka et al. 2006).

112. Greater awareness of successes and feasibility of such approaches is needed so that others can benefit from the approach.



## 9. CONCLUSION

113. From the study of school enterprises, the following significant principles emerge:

- Both general and technical components of vocational skills in the definition of ‘human capital’ are important.
- Local initiative is a leading force in school enterprises. They are driven, not only by educational authorities, but also by local business and community groups, industries and non-governmental organizations. These groups have the technology and expertise in both traditional and newly emerging skills. These new categories of participants are deeply affecting the vision and expressed interests of traditional central educational authorities.
- It takes a combination of methods of vocational education theory, on-the-job training and diverse sorts of non-formal methods to provide a flexible system for the formation of human resources in any society.
- Closeness to the utilization and application of competencies is of crucial importance for investments in employment-related vocationally specialized skills. School enterprises entail the notion of training people in close relation to future employers, so as to place them straight away in jobs that use their skills.
- People are motivated and show an interest in studies only when future economic returns become visible to them. Motivation also means giving scope to independent endeavours as well as social and environmental concerns, thereby enlisting the creative potential and active participation of many people in the formation and utilization of skills, knowledge and ideas woven into the fabric and shared problems of society.
- Basic educational competencies are the prime step in developing vocationally specialized competencies in men and women. If insufficient attention is paid to these competencies, investments in technical and vocational education can have a distorting effect.
- The scope for development through vocational specialization and employment-related training depends on the scale of the market. This means participation in markets for new and innovative products must be greatly enlarged. It also means producing goods of high quality, rather than poor imitations of products that others produce better.

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