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**Promoting critical knowledge, skills and qualifications for  
sustainable development in Africa: How to design and  
implement an effective response by education and  
training systems**

### **Sub-theme 1**

**Common core skills for lifelong  
learning and sustainable  
development in Africa**

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## **Generic Work-Related Skills in Education for a Sustainable Development: a Synthesis of UNESCO-UNEVOC and other Publications**

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## Acronyms and abbreviations

AUC : African Union Commission

AVE: Adult Vocational Education

BEAP : Basic Education in Africa Programme

EFA : Education for all

GDP : Gross Domestic Product

GMR : Global Monitoring Reports

ICT : Information and Communication Technology

ILO : International Labour Organization

LDC: Least developed countries

MDG : Millenium Development Goal

NGO : Non-Governmental organization

NCVER : National Centre for Vocational Education Research

TVET : Technical and Vocational Education and Training

UN : United Nations

UNECA: United Nations Economic Commission for Africa

UNEP: United Nations Environment Programme

UNESCO : United Nations Educational, Scientific and Cultural Organization

UNESCO-UNEVOC: United Nations Educational, Scientific and Cultural Organization –  
International Centre for Technical and Vocational Education and Training

UPE: Universal Primary Education

VET : Vocational Education and Training

# 1. ABSTRACT

As a resource centre and clearinghouse, the UNESCO-UNEVOC International Centre has done a number of studies related to skills: skills development, learning needs in the informal sector, restructuring secondary education towards employment and sustainable skills among others. In this regard, UNESCO-UNEVOC has compiled a number of lessons learnt and recommendations that can be used to develop a road map for the integration of generic skills in education and training.

This contribution is based on a synthesis of UNESCO-UNEVOC and other related publications in the field of skills with a particular emphasis on reforms and innovations implying changes in the education and training system or many management levels. It analyzes different experiences regarding how acquired skills improve the employability of young people in the context of sustainable development. This paper aims at informing the global debate on the way to design and implement inclusive and integrated educational reforms towards developing generic work related skills in Africa. It is part of a global re-conceptualization of education and training systems to meet the expectations and needs of young people in Africa, particularly incorporating the concept of sustainability in the labour market. It reviews the present economic context of Africa and development of the skills concept in the TVET literature in Africa and elsewhere and makes a synthesis of these publications on generic work-related skills in education for a sustainable development, with a particular focus on skills for both the formal and informal labor markets in Africa.

The different dimensions of developing generic skills in education are used as lenses to analyze the publications: lifelong learning by recognizing skills acquired in formal, non-formal and informal pathways, efficiency of training programs based on learning outcomes and public-private partnerships to meet work-place needs.

Generic work-related skills belong to emerging critical skills as they enable people to adapt in various situations of work besides job-specific requirements. In this regard, this paper takes a holistic and inclusive approach of basic education, shifting from a supply-based to a demand-led approach and taking into account socio-economic situations of learners.

The study serves to stimulate the development of new education policies targeting the development of generic skills in basic education. The study presents the lessons, recommendations and options related to skills acquisition in other contexts with a view to transfer the acquired knowledge to policy makers and administrators, with a particular focus on Africa.

## 2. EXECUTIVE SUMMARY

The economic, social and educational scenery of Africa is gradually changing and these changes are likely to impact the generic work-related skills needed to be provided in the educational system from the perspective of sustainable development. These include the growth of the economy, the labour market, the employment/unemployment rates of different groups, the development of the youth population, poverty and, of course, the structure, outcomes, achievements and shortcomings of the education and training system.

In Sub-Saharan Africa, with primary school enrolment ratios increasing across the developing world, demand for secondary education is growing. Technical and vocational enrolment is also increasing, though data constraints make it difficult to draw comparisons across regions. But most of the public still perceive Technical and Vocational Education as education for the poor, the working class and the uneducated. Also the financial resources are inadequate to train large numbers of students for the jobs that they will perform. The present education/training paradigm will not erase this mindset, unless more fundamental changes are made, especially at basic education levels.

As presently structured, public vocational and technical education programs appear to have little to offer employment in the informal sector

UNESCO developed the Basic Education in Africa Programme (BEAP) to support a holistic and comprehensive reform of basic education in the spirit of EFA. It provides a framework for curriculum renewal linked to a variety of complementary initiatives, which together may assist towards improving quality, relevance and equity in education. The key principles of the BEAP are: the ‘right to education’ (including the right to complete the entire cycle); lifelong and life-wide learning; inclusive education; the centrality of quality and relevance; an emphasis on skills and competencies as learning processes and outcomes; the democratisation of access and participation in education, as well as of participation in decision-making; taking a holistic approach to basic education development; and the importance of ‘equitable diversity’. Here, entrepreneurship education and its various modes of delivery (right from early childhood) to prepare young people for life and work are conceived as an overarching approach to foster those principles throughout all levels of education systems. These together facilitate an integrated approach to the achievement of all EFA goals.

One of the most difficult tasks facing policy makers is that of comprehensive curriculum reform to align curriculum structure, content, pedagogy and assessment to the redefined objectives of a basic education and to the changing profile of the student body entering the world of work with only the education received at school. Instead of equipping a narrowly selected elite for further academic education, the role ascribed to basic education becomes that of preparing an entire age group for integration into adult society (life skills, key competencies and citizenship education), into the world of work (core generic skills) and for further studies as applicable in a general perspective of lifelong learning (learnability). There is also a need to accommodate problem-solving skills, civic and citizenship education, team work and ICT within the curriculum, as well as international language mastery, and maths and science skills.

Generic skills include a set of generic core/basic ‘hard’ skills, interpersonal/ relationship ‘soft’ skills and personal attributes. Globally, generic skills have been defined by a number of terms including core skills, key skills, essential skills, basic skills and workplace skills. In some countries they are specifically related to employment and in others, more emphasis has been placed on the social and

economic relevance of generic skills. Work-related generic skills came to be called “employability skills” in many countries of the West. These referred primarily to *basic skills* such as literacy and numeracy, *interpersonal skills* such as communication and teamwork, and *personal attributes* such as the capacity to learn and embrace change.

Sustainable development is not a fixed concept; rather it is a culturally directed search for a dynamic balance in the relationships between social, economic and natural systems, a balance that seeks to promote equity between the present and the future, and equity between countries, races, social classes and genders. The interdependence of people and the environment requires that no single development or environmental objective be pursued to the detriment of others. The environment cannot be protected in a way that leaves half of humanity in poverty. Likewise there can be no long-term development on a depleted planet. Appropriate sustainable strategies must be developed for both rich and poor nations.

This makes sustainable development more a moral precept than a scientific concept, and links it as much with notions of peace, human rights and fairness as it does with theories of ecology or global warning. Indeed, while sustainable development involves the natural sciences, policy and economics, it is primarily a matter of culture: it is concerned with the values people cherish and with the ways in which we perceive our relationship with others and with the natural world. (UNESCO, 2002). In this perspective sustainable development is thus encompassed not just in TVET but all forms of skills, especially generic skills.

Providing generic skills at basic education functions to prepare new entrants to the labour force and is ideally suited for the promotion of sustainable practices in the workplace. In developing nations, where large numbers of students drop out at different stages, integrated generic skills in basic subjects will lead to technological literacy in nearly every occupational area and this implies that all workers will need increased generic skills in their educational attainment and continuous learning.

Much UNESCO-UNEVOC initiated research and development concentrated on identifying and conceptualising skills in two ways for different purposes: (i) as generic (broadly transferable) sustainable development-related skills and (ii) occupational job specific sustainable development skills. TVET systems (whether real systems or theoretical concepts) are in this view seen as not understanding the theory and practices of sustainable development. TVET in many countries remains locked in the role of being a mere supplier of skilled labour to industry and is therefore unable to respond effectively to the needs of sustainable development strategies. A number of studies have been undertaken to identify and develop domain independent generic skills as required by the twenty-first century organisation.

Generic skills (competencies) are indeed important and need to be included already in the curriculum of general education in developing countries. Whether a TVET system in African countries, as underdeveloped as it may be, should first of all and as a priority care for the education and training of such type of skills at the expense of urgently needed job-relevant and work-specific skills is at least debatable given the poor status and the weak performance of these systems and the overall poverty situation in these countries. More recent attempts of curriculum development and bridging academic and vocational education – as documented in UNEVOC’s international handbook of education for the changing world of work and other publications – seem to be more realistic and less ideological.

### 3. CONTEXTUAL CHALLENGES

1. The economic, social and educational scenery of Africa is gradually changing and these changes are likely to impact the generic work-related skills needed to be provided in the educational system from the perspective of sustainable development. These include the growth of the economy, the labour market, the employment/unemployment rates of different groups, the development of the youth population, poverty and, of course, the structure, outcomes, achievements and shortcomings of the education and training system.
2. Over the last years, Africa has been strengthening its economic recovery, especially after the global financial and economic crisis, with GDP growth rising from 2.3 per cent in 2009 to 4.7 per cent in 2010 (UNECA, 2010). For the continent as a whole, per capita GDP has been growing and in 2010, the growth was 2.4 per cent. Africa is likely to have a growth of 5 per cent in 2011. In spite of this, Africa's unemployment remains high. Unfortunately, the Africa economic rebound is yet to translate into meaningful reductions in unemployment, especially among the youth and vulnerable groups.
3. Recent unemployment data suggest that job creation has remained disappointing in 2010, especially in light of the strong output recovery. The narrow base of its economic structure has contributed to Africa's high levels of unemployment. Job creation remains limited in countries where much of the economic upturn was driven by capital-intensive extractive sectors that have few forward and backward linkages with the rest of the economy. All these factors, combined with poor educational quality, rapid population growth and labour-market imperfections, have kept Africa's growth rates consistently below those needed to create adequate employment and to reduce poverty (UNECA and AUC, 2010).
4. A particular concern is that youth unemployment has remained at around a high 18 per cent for the last decade—young people continue to face severe hurdles in gaining decent employment.
5. The relatively strong economic performance in Africa since the turn of the 21<sup>st</sup> century has, however, also not resulted in satisfactory social development outcomes (UNECA and AUC, 2010, among others). For example, poverty rates have remained high in sub-Saharan Africa and the recent positive growth spells have not transformed into solid employment creation, one of the most important means to reduce poverty. Indeed, the employment-to-population ratio has largely stagnated since 1991 (UNECA, 2010). West Africa has even registered a decline in the employment-to-population ratio over the last decade, as aggregate output has remained heavily dependent on extractive industries. The lack of employment creation is one of the main causes of persistent and chronic poverty. Narrow drivers of economic growth and their capital intensity do not create jobs. Unemployed heads of poor households become risk adverse, failing to make investments in education and health, thereby reinforcing their household's marginalization from social, economic and political life.
6. Structural unemployment remains high in many countries. In Sub-Saharan Africa, youth unemployment rate was 11.9% in 2009, down from 13.5% in 1998 (ILO, 2010). As it is very difficult to get reliable labour market data, part of the relatively low rate may be due to statistical problems. However, given high poverty levels and lack of better alternatives in the labour market and education in many of these countries, the relatively low unemployment rate also reflects people's need to survive by accepting any kind of work (ILO, 2010).
7. Over the past decade, Africa's population increased by over 217 million to more than one billion. One fifth of the population are aged between 15 and 25 and thus at the age of entering the labour market and looking for a job. Both total population and youth population increased by 2 %, or

2.3% per year from 2000 to 2010. During the current decade, Africa's population is projected to further increase by more than 23% (2% per year), and the youth population by almost 20% (1.8% per year). While in eastern, central, and western Africa demographic pressures on labour markets continue, in north Africa and southern Africa, where population growth is more moderate, the youth population will stop rising and remain close to current levels.

8. A comprehensive approach is needed to address the problem of unemployment in general and of youth unemployment in particular. Improvements are needed both on the supply and the demand side of labour, especially with regards to education, technical and vocational training, with policies depending on the specificities of the countries. In most countries, more **work** needs to be done to improve the quality of labour supply so that it better matches the skills required by companies.
9. Important progress has been made in education, as the primary school enrolment rate jumped from 54 per cent in 1990 to 76 per cent in 2008 (UN, 2010). Further progress is, though, hampered by the cost of education, especially in the 27 African countries that have no legal guarantees for free schooling. Even when education is provided free, ancillary expenses, such as uniforms and transport and the opportunity cost of children not participating in farm work, hinder schooling of students from low-income backgrounds. Other leading obstacles are unequal opportunities and access, due to gender and geographical biases.
10. Despite an impressive increase in enrolment in primary (first-cycle) education (as documented in UNESCO's GMRs) the duration of compulsory basic education (primary and lower secondary) in Africa is still lowest among the world regions (7,1 years in Sub-Saharan Africa as compared to 9,5 years in Latin America and the Caribbean). Equity, efficiency, quality and relevance of education and learning are generally still poor and contribute to the overall dissatisfactory picture of general education in Africa.
11. Many African countries also face the challenge of improving the quality of education. Completion rates of primary school and pupil-teacher ratios, both proxies for quality provision, are inadequate. Despite some improvements, the completion rates are around 60 per cent in most countries and class size has remained very large with consequent high drop-out rates. The teacher supply gap has been estimated at over 4 million, which has serious implications for increasing primary school attendance and for reducing class size (UNESCO, 2010). The effect of economic growth on education is constrained by limited post-primary educational access. Human capital needed for successful structural transformation goes beyond the numeracy and literacy skills provided by primary school cycles. This is acknowledged by the African Union's Second Decade of Education for Africa (2006–2015), which emphasizes higher education as a key area for sustaining development.
12. Sub-Saharan Africa has a gross enrolment ratio at the secondary level of just 34%, with only 6% progressing to the tertiary level. However, the region is starting to catch up from this very low starting point. Since 1999, enrolment ratios have more than doubled in Ethiopia and Uganda, and quadrupled in Mozambique. With primary school enrolment ratios increasing across the developing world, demand for secondary education is growing. Technical and vocational enrolment is also increasing, though data constraints make it difficult to draw comparisons across regions. The number of adolescents out of school is falling, but in 2008 they still totalled around 74 million worldwide. (GMR, 2011)
13. Most of the public still perceive Technical and Vocational Education as education for the poor, the working class and the uneducated. The low perception of TVET can probably be traced back to Africa's history because generally speaking Vocational Education was originally set up for slaves who had no formal education. This mindset is still in existence today despite the economic advantages of TVET in developing countries. The present education/training paradigm will not erase this mindset, unless more fundamental changes are made, especially at basic education levels.

14. In the present system, where training facilities are provided, too much emphasis is often placed on developing skills to meet industry needs in the formal sector whereas more than a half of the workforce is in the informal subsistence sector. In most countries, once students graduate from these TVET institutions, they emigrate to cities and towns in search of the limited formal sector jobs instead of being encouraged to develop their communities.

#### ***Public provision and role of the State***

15. Progress in social development is determined by economic growth and the extent to which this growth is shared, as well as by the quantity and quality of public services delivery. The delivery of services to achieve the MDGs, previously a clear domain of the state, has had a recent paradigm shift from the centrality of the state in directing social and human development, with non-state actors now playing an increasingly important role in services provision across the continent.
16. Two main considerations have traditionally been used to justify the public provision of social services. First, that the market fails to deliver these services, given the externalities generated by education and health (and that market might be incomplete or absent). Second, scale economies, due to relatively large associated fixed costs, were best achieved publicly. However, these have become less important over time. Insufficient or poor public services delivery is one of the factors that have raised demand for non-state provision of social services, especially in education and health. Private education provision has risen partly owing to the insufficient coverage of free primary schooling.
17. Also, the predominant concentration of public resource allocation at the primary level results in relatively high levels of primary enrolment, but leaves a high unmet demand for post-primary education. Provision at those levels by the private sector is therefore critical, as seen in the establishment of private institutions of tertiary education, which are vital in building a knowledge-based society (World Bank, 2005).
18. The latest world economic crisis highlighted the continent's need for more effective policies for structural transformation, employment generation, and poverty reduction. The need for such policies partly explains why interest in development planning and the role of the state in economic and social development has resurged in Africa in recent years. The state now plays a more strategic development role, which involves effectively delivering public services to ensure that social objectives are achieved, establishing criteria for accreditation and quality assurance, while ensuring attention to equity and efficiency concerns. It also has to ensure that whatever education provision is made, it is done to improve the productive potential of its labour force.

#### ***Formal and informal economies***

19. In many African countries almost 95% of employment takes place in the informal economy. The recent re-convergence of interest in the informal economy stems from the recognition that the informal economy is growing; is a permanent, not a short-term, phenomenon; and is a feature of modern development, not just traditional economies, associated with both growth and global integration. For these reasons, the informal economy should be viewed not as a marginal or peripheral sector but as a basic component of the total economy.
20. A cursory look at countries in Sub-Saharan Africa shows that informal sector activities maintain a significant, and in some cases, dominant share of their respective markets covering mining, manufacturing, commerce, finance and other sectors. The size of the sector, estimated to account on average for 42 percent of GDP in 23 African countries in 2000, is forcing governments to acknowledge its existence and importance to the national economy and the welfare of those employed therein. In South Africa with a larger formal sector, the informal economy still contributes between 7 and 12 percent of GDP. (Adams, 2003)

21. The education levels of those employed in the informal sector are generally lower than those in the formal sector (Liimatainen 2002). However, this pattern is changing as young workers are entering with more education. Low education levels limit trainability and lead to modest skill levels. In a survey of five African countries, Kenya, Tanzania, Zambia, Zimbabwe, and Senegal, Haan (2006) reports that about half of informal sector workers have either no education or a primary education and less than five percent have a post-secondary education. Slightly better results are reported by Walther (2006a) for South Africa. In contrast, a survey of those employed in the informal sector of Nigeria found larger numbers with a post-secondary education, 14 percent, and some 45 percent with a secondary school certificate. Finding ways to continue education and promote skills training forms an important challenge to improving productivity in the informal sector and reducing poverty.
22. Skills for work are acquired in different settings in classrooms, workshops, and on-the-job and are provided by public education and training institutions, private for profit and non-profit institutions, and employers through training in the workplace and outside. Training may be taken to qualify for employment or to upgrade skills and prepare for the introduction of new technology in production. For those working in the informal sector, some or all of these approaches to skills may be used. Public and private schools can play an important role in preparing individuals for creating their own employment by providing them with a technical skill, usually through a technical and vocational education curriculum. A commonly used approach to self-employment is working for another employer and acquiring skills on the job, either informally or through an apprenticeship, before leaving to set up one's own business. Each approach has strengths and weaknesses.
23. Public secondary and tertiary schools with technical and vocational education programs have played a smaller role than might be anticipated in preparing workers for informal sector employment (Atchoarena and Delluc 2001). Originally developed at independence in the 1960s to meet the expected skill requirements of industrialization, these institutions have been slow to respond to structural change and growth of the informal sector (Brewer 2004, Haan 2006, Liimatainen 2002, NISER 2007, and Filipiak 2007). Structural adjustment programs and tight government budgets contributed in the 1980s and 1990s to deteriorating facilities and equipment and the inability of these institutions to update programs and respond to the shift to informal sector employment (ILO 2002b, Johanson and Adams 2004).
24. Other impediments also stand in the way of the public sector's response to meeting the skills challenge for the informal sector. The training offered by the public sector is considered theoretical in focus without sufficient opportunities for practice and biased toward white-collar jobs in the wage sector (Liimatainen 2002). Entry requirements and fees are often too high and the training methods used better suited to a more literate population. The courses offered are considered rigid and too standardized to meet the multi-skilling needs of the highly diverse informal sector. Where public financing is used without accountability for results, these institutions have few incentives to monitor and adjust to changes in the demand for skills (Ziderman 2003).
25. The population targeted for this training and the mode of delivery are also factors behind the failure to reach out to the informal sector with skills. Public technical and vocational education programs are largely focused on the full-time student preparing for entry into the world of work and require sustained periods of time in school. The focus on pre-service training is not matched by a focus on in-service training for those already employed. This model has proven ill-suited to those among the poor seeking to combine school and work in part-time fashion to provide families with income, and similarly, to meet the needs of older workers who are unable to afford time away from work for training.
26. The recent introduction of entrepreneurship education represents an innovation in public secondary and tertiary education institutions that is relevant to the informal sector. These programs help develop attitudes favourable to starting one's own business and provide knowledge and skills for running a business, e.g. business law, accounting and bookkeeping, credit and finance, and

marketing. Farstad (2002) examined entrepreneurship education programs in secondary and tertiary education institutions in Botswana, Uganda, and Kenya. He found instructors generally well qualified, but observed no immediate impact on the numbers of students leaving school to start a business.

27. The fact that students did not immediately start new businesses is not by itself an indicator of failure on the part of these programs. Farstad acknowledged that the more traditional route to self-employment starts with an initial period of apprenticeship or wage employment to gain practical experience and build professional self-confidence. In a comparison of graduates of general secondary education programs and those from technical and vocational education programs he observed that the latter group was more likely to start businesses within a few years of graduation. The technical education provided a skill that was then honed on the job with an apprenticeship and wage employment before setting out to start a new business.
28. Entrepreneurship education has encouraged schools to think outside traditional patterns of pedagogy and classroom instruction. Periods of mandatory work placement have been introduced along with compulsory development of a business plan subject to examination and grading. In Kenya, entrepreneurship education is delivered with the assistance of Small Business Centers attached to all public post-secondary and some private technical and vocational education institutions. In Botswana, students benefited from the requirement they establish and operate a student enterprise. Cooperation between training institutions and private enterprises in curriculum development and training delivery was found to add value in the three countries studied (Farstad 2002).
29. The low educational background of many of those employed in the informal sector opens opportunities for greater attention of public sector institutions to adult education and literacy programs and to the offering of what is becoming known as *second-chance education* tailored to the needs of those who have missed opportunities for early education (World Bank 2007, Adams 2007).
30. As presently structured, public vocational and technical education programs appear to have little to offer employment in the informal sector.
31. Employment in the informal sector is now an important feature on the landscape of Africa accounting for a significant share of gross domestic product and influencing the well-being of a growing number of households. Its character has changed if ever so slightly as growing numbers of those who now enter this employment do so with higher levels of education than those before them and with entrepreneurial aspirations that look at this employment as a preferred destination for their future rather than merely a staging ground for the ongoing search for wage employment in the modern sector.
32. More specifically, surveys show that Informal Medium Enterprises (IME) owners in Sub-Saharan Africa are more interested in upgrading their technical skills and their management skills than before and lack especially managerial training in activities with low technical levels (Haan, 2006). In addition, IME owners think that management training is more needed for their operator than technical skills. One of the reasons is that public training institutions provide mostly theoretical knowledge and technical skills, as opposed to broader soft skills (Haan 2006, p. 42).

#### *BEAP*

33. In view of these realities of the informal sector, it is clear that the present educational and training structures and training paradigm will not be able to respond to the education and training needs of the African countries. It is necessary therefore to provide all basic education students with a kind of education that integrates the essential knowledge, generic skills and competencies and exposure

to the world of work. It is in this spirit that UNESCO developed the Basic Education in Africa Programme (BEAP).

34. The BEAP is a UNESCO-backed African programme that seeks to support a holistic and comprehensive reform of basic education in the spirit of EFA. It provides a framework for curriculum renewal linked to a variety of complementary initiatives, which together may assist towards improving quality, relevance and equity in education. By so doing it helps to increase the responsiveness of education to the expectations and needs of learners and society, and thus contributes significantly to achieving the goals of EFA and of national development
35. The key principles of the BEAP are: the ‘right to education’ (including the right to complete the entire cycle); lifelong and life-wide learning; inclusive education; the centrality of quality and relevance; an emphasis on skills and competencies as learning processes and outcomes; the democratisation of access and participation in education, as well as of participation in decision-making; taking a holistic approach to basic education development; and the importance of ‘equitable diversity’. Here, entrepreneurship education and its various modes of delivery (right from early childhood) to prepare young people for life and work are conceived as an overarching approach to foster those principles throughout all levels of education systems. These together facilitate an integrated approach to the achievement of all EFA goals.
36. While the BEAP recognises that curriculum (along with its assessment) is the heart of basic education reform and that thus its review will constitute the core of its work, there is a range of other components of basic education which may well need adaptation in order to ensure its success. These include teacher education reform, attention to learner support materials and ICT, the move towards diversified modes of provision, whole school improvement, issues of governance and management, the linkages with community and labour market, and inter-sectoral collaboration at national and local levels.
37. One of the most difficult tasks facing policy makers is that of comprehensive curriculum reform to align curriculum structure, content, pedagogy and assessment to the redefined objectives of a basic education and to the changing profile of the student body entering the world of work with only the education received at school. Instead of equipping a narrowly selected elite for further academic education, the role ascribed to basic education becomes that of preparing an entire age group for integration into adult society (life skills, key competencies and citizenship education), into the world of work (core generic skills) and for further studies as applicable in a general perspective of lifelong learning (learnability). There is also a need to accommodate problem-solving skills, civic and citizenship education, team work and ICT within the curriculum, as well as international language mastery, and maths and science skills.
38. Here entrepreneurship education can serve as an overarching approach to addressing those issues throughout all education levels. Hence, the BEAP promotes the development of an integrated and broad curriculum, which is outcome oriented and covers a wider variety of skills and competencies, as an essential preparation of young people for life, for work, for society, and for further learning.
39. Regarding the third cycle of secondary education, a fairer redistribution of students between the general and technical disciplines will then better meet the requirements of the work market. The development of this sub-sector will be carried out partly by the private system, which may be supported by the state. Similarly, in order to overcome the shortage of qualified intermediate workers, secondary education will be completed by vocational education training in the areas of national interest. The BEAP will thus also help a gradual generalisation of access to vocational education training for secondary education third cycle school-aged students. This is likely to produce a better trained and more prepared workforce to enter the labour market.

## 4. DEFINITION OF CONCEPTS

40. Generic skills are known and used by a number of terms in different parts of the world. In some countries they are specifically related to employment, while in others greater emphasis is placed on their social relevance. Table 4.1 outlines the different labels being used for generic skills in various countries.

Table 4.1: Labels used for generic in various countries

Germany	Key qualifications
United Kingdom	Core skills, key skills, common skills
France	Transferable skills
Switzerland	Trans-disciplinary goals
Australia	Key competencies, employability skills, generic skills
New Zealand	Essential skills
Canada	Employability skills
United States	Basic skills, necessary skills, workplace know-how
Singapore	Critical enabling skills

41. Generic skills include a set of generic core/basic ‘hard’ skills, interpersonal/ relationship ‘soft’ skills and personal attributes. The broad framework of generic skills is similar to the generic skills identified in the United States (US Secretary’s Commission on Achieving Necessary Skills of 1999), core and generic skills from New Zealand and several reports emanating from the United Kingdom (Green 1999; Marsh 1997). Recently in Australia, Kearns (2001) has defined generic skills as ‘the skills which can be used across a large number of different occupations. They include the key competencies or key skills but extend beyond these to include a range of other cognitive, personal and interpersonal skills which are relevant to employability’.
42. Globally, generic skills have been defined by a number of terms including core skills, key skills, essential skills, basic skills and workplace skills. In some countries they are specifically related to employment and in others, more emphasis has been placed on the social and economic relevance of generic skills. For Kearns (Kearns 2001), *It is desirable to find agreement on terminology that is acceptable to all stakeholders—schools, VET, higher education, employers, individuals, and communities and which recognises that the new agenda of generic skills for the 21st century is about essential life skills as well as enterprise and employability skills.* (Kearns 2001, p.85)
43. There are not only a number of terms used to describe generic skills, but also many different lists of generic skills. Moy (1999) has compared 4 countries and their definition of generic skills that are also termed as competencies:

Table 4.2: Lists of generic skills in Australia, United Kingdom, United and New Zealand

Australia	United Kingdom	United States	New Zealand
Key competencies	Core skills	Workplace know-how	Essential skills

Collecting, analyzing and organising information	Communication	Information Foundation skills: basic skills	Information skills
Communicating ideas and information	Communicating Personal skills: Improving own learning and performance	Resources Foundation skills: basic skills	Communication skills
Planning and organising activities	Personal skills: Improving own learning and performance	Resources Foundation skills: personal qualities	Self-management skills Work and study skills
Working with others and in teams	Personal skills: working with others	Interpersonal skills	Social skills Work and study skills
Using mathematical ideas & techniques	Numeric: application of numbers	Foundation skills: basic skills	Numeric skills
Solving problems	Problem-solving	Foundation skills: thinking	Problem-solving and decision-making skills
Using technology	Information technology	Technology Systems	Information skills Communication skills

Source: Moy, J. *The Impact of Generic Competencies on Workplace Performance*, 1999.

44. In Australia in 1992 the Mayer key competencies (Australian Education Council, Mayer Committee) recognised the importance of generic skills. These have played a significant role in the development of government policy in this area, not only in Australia but also other developed countries, most particularly in the vocational education and training (VET) sector. The Mayer Committee identified the key competencies as: ... *competencies essential for effective participation in the emerging patterns of work and work organization ... [which] focus on the capacity to apply knowledge and skills in an integrated way in work situations. Key Competencies are generic in that they apply to work generally rather than being specific to work in particular occupations or industries. This characteristic means that the Key Competencies are not only essential for participation in work, but are also essential for effective participation in further education and in adult life more generally.* (Australian Education Council, Mayer Committee 1992, p.7)

Table 4.3: Descriptors of key competencies

Key competencies	Descriptors
Collecting, analyzing and organising information	The capacity to locate information, sift and sort information in order to select what is required and present it in a useful way; and to evaluate both the information itself and the sources and methods used to obtain it
Communicating	The capacity to communicate effectively with others using the range of

ideas and information	spoken, written, graphic and other non-verbal means of expression
Planning and organising activities	The capacity to plan and organise one's own work activities, including making good use of time and resources, sorting out priorities and monitoring one's own performance
Working with others and in teams	The capacity to interact effectively with other people both on a one-to-one basis and in groups, including understanding and responding to the needs of a client and working as a member of a team to achieve a shared goal
Using mathematical ideas and techniques	The capacity to use mathematical ideas, such as numbers and space, and techniques such as estimation and approximation, for practical purposes
Solving problems	The capacity to apply problem-solving strategies in purposeful ways, both in situations where the problem and the desired solution are clearly evident and in situations requiring critical thinking and a creative approach to achieve an outcome
Using technology	The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with an understanding of scientific and technological principles needed to explore and adapt systems

Source: Australian Education Council, Mayer Committee (1992, pp.8–9)

44. As can be seen in the table above, the Mayer key competencies are defined as “competencies essential for effective participation in the emerging patterns of work and work organisation”. They focus on the capacity to apply knowledge and skills in an integrated way in work situations. These competencies continue to form part of what has since evolved as the Employability Skills Framework and are incorporated into VET training packages. The Mayer Committee precluded the inclusion of values and attitudes, but these were subsequently included in the Employability Skills Framework. Their inclusion arose primarily from initiatives by employer bodies (Australian Industry Group, 1999; Australian Chamber of Commerce/ Business Council of Australia, 2002) in identifying essential skills from an employer perspective.
45. In the United Kingdom, Skills for Life in 2001 provided a national strategy to improve adult literacy and numeracy and 21st Century Skills in 2003 aimed at ensuring high skills among working age adults. This includes both Skills for Life and Skills Strategy 2002 – the latter aims at providing upper secondary vocational training to all adults.
46. Work-related generic skills came to be called “employability skills” in many of the countries mentioned in Table 1 above. These referred primarily to *basic skills* such as literacy and numeracy, *interpersonal skills* such as communication and teamwork, and *personal attributes* such as the capacity to learn and embrace change.
47. In the literature on sustainable development (SD) and skills, most publications refer to the way in which TVET, and not specifically skills, should be reoriented to SD. TVET is seen as playing “an instrumental role in developing a new generation of individuals who will face the challenge of achieving sustainable socioeconomic development. A number of new subjects (issues) therefore need to be incorporated into TVET teaching and learning or be further emphasised for the sake of the future of all of us as we struggle to learn throughout life.... there is an urgent need to renew TVET. This should be the top priority for every country... This is a task that can only be accomplished if a country can succeed in articulating TVET with its system of education within a framework of an overall sustainable development strategy. (UNESCO (1999) op.cit. p. 29....)

48. UNESCO's Recommendations on Technical and Vocational Education (which were adopted in 2001) took into account the notion of sustainable development, even before the Johannesburg Summit, with UNESCO recommending that TVET should:
  1. Contribute to the achievement of the societal goals of greater democratization and social, cultural and economic development, while at the same time developing the potential of all individuals, both men and women, for active participation in the establishment and implementation of these goals, regardless of religion, race and age;
  2. Lead to an understanding of the scientific and technological aspects of contemporary civilization in such a way that people comprehend their environment and are capable of acting upon it while taking a critical view of the social, political and environmental implications of scientific and technological change;
  3. Empower people to contribute to environmentally sound sustainable development through their occupations and other areas of their lives.
49. In the present context of generic skills development, what is an appropriate definition of sustainable development within vocational education and training? How is the world of work related to, and affected by the environmental, social and economic aspects of sustainable development?
50. Sustainable development is not a fixed concept; rather it is a culturally directed search for a dynamic balance in the relationships between social, economic and natural systems, a balance that seeks to promote equity between the present and the future, and equity between countries, races, social classes and genders. The interdependence of people and the environment requires that no single development or environmental objective be pursued to the detriment of others. The environment cannot be protected in a way that leaves half of humanity in poverty. Likewise there can be no long-term development on a depleted planet. Appropriate sustainable strategies must be developed for both rich and poor nations.
51. This makes sustainable development more a moral precept than a scientific concept, and links it as much with notions of peace, human rights and fairness as it does with theories of ecology or global warning. Indeed, while sustainable development involves the natural sciences, policy and economics, it is primarily a matter of culture: it is concerned with the values people cherish and with the ways in which we perceive our relationship with others and with the natural world. (UNESCO, 2002). In this perspective sustainable development is thus encompassed not just in TVET but all forms of skills, especially generic skills.
52. The International Implementation Scheme for the United Nations Decade of Education for Sustainable Development identifies a range of common themes of sustainable development across socio-cultural, environmental and economic perspectives, including Human rights, peace and human security, Gender equality, cultural diversity and intercultural understanding, Health including HIV/AIDS, Natural resources, climate change, rural transformation, sustainable urbanisation, disaster prevention and mitigation, poverty reduction, corporate responsibility and accountability, market economy. Generic work related skills incorporate all these perspectives.
53. As both a consumer and a producer of resources, or more accurately a sector involved in the transformation of resources, TVET, through the development of generic skills, has multiple concerns about sustainability. Proper generic work related skills can sensitise all learners to the over-exploitation of natural resources, ill-health and grinding poverty that threatens the ability of future generations to satisfy their needs and wants. The challenge for generic work related skills is to re-orient and re-direct its curricula to imbue students and trainees with respect for the conservation and sustainable use of resources, social equity and appropriate development, plus with competencies to practise sustainable tasks at the workplaces of today and tomorrow. This can operationalise the Seoul Congress goal of producing "responsible citizens who give due consideration to preserving the integrity of their environment and the welfare of others". (UNESCO, 1999)

54. The growing significance of sustainability is having major impacts upon business and industry. Many companies are now not only reporting the results of their economic achievements to their shareholders and community stakeholders, but also the impacts of their social and environmental record through a system known as “triple-bottom-line” reporting. Many new industries and employment opportunities are also being developed, e.g. in ecotourism, environmental monitoring, sustainable community development, eco-design, recycling, alternative energy sources, land rehabilitation, pollution control, waste water treatment and reuse, etc. All require workers who have developed generic skills and knowledge of – and commitment to – sustainability, as well as the requisite technical knowledge.
55. These economic and social trends suggest that the education and training of workers must promote an understanding of sustainability for the stewardship of resources, the environment, and health to become more effective. Trends in the productive and service sectors suggest that both basic and portable skills and competencies will be sustainable in the long-term for job shifts and technological changes. Sustainable TVET involves the renewal of individual skills, labour market skill requirements, and the transformation of the world of work.
56. Providing generic skills at basic education functions to prepare new entrants to the labour force and is ideally suited for the promotion of sustainable practices in the workplace. The transformation of agriculture, fishing, forestry, industry, mining and even the service sectors into knowledge-based sectors suggests that future farmers, fishers, foresters and miners will require at least generic skills to be able to operate computer-controlled agricultural, fish-finding, mining, manufacturing and timber-cutting equipment. In developing nations, where large numbers of students drop out at different stages, integrated generic skills in basic subjects will lead to technological literacy in nearly every occupational area and this implies that all workers will need increased generic skills in their educational attainment and continuous learning.
57. To ensure a sustainable future, it is necessary that basic education provision ensures that all workers are able to play appropriate roles, both in the workplace and the wider community, in contributing to social, economic and environmental sustainability. Employers have a responsibility to develop a skilled, committed and motivated workforce. Another dimension of sustainability concerns the preservation of traditional skills in minority populations. This is implicit in the “tangible and intangible heritage” of UNESCO cultural policies. Students and workers need to have developed a different, wider, set of economically-related knowledge, skills and attitudes. Economic literacy involves using appropriate economic ways of thinking and problem-solving that lead to sound and informed economic choices as consumers, producers, savers and investors and as effective participants in the local, national and global economy.
58. Sustainable production is an approach to the manufacturing and delivery of “goods and services in ways that respond to basic human needs and bring a better quality of life, while minimising the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardise the needs of future generations” (Norwegian Ministry of the Environment, 1994)
59. Sustainable consumption is the necessary corollary of sustainable production. A key aspect of education and training for sustainable consumption is the development of generic skills to integrate concepts of sustainable consumption into the planning of workplace production processes and in the daily lives and expectations of what it means to live a “good life” in the minds of workers and their families. (Fien, 1998)
60. Many skilled tradespersons and even relatively unskilled workers operate as sole traders and require the project management, time management, business planning, reporting, saving and reinvesting skills needed to ensure that their businesses remain viable, due income received and accounted for, debts are paid, machinery and tools kept in good working order, taxes paid and plans made for the future. Skills in managing a small business are also becoming increasingly common as companies downsize and then outsource work to former employees. Indeed, the skills

of creating and managing one's own job might be seen as a vital outcome of preparation for the world of work.

61. It must not be forgotten, however, that the popular economy has become the main vector for productive activity for the majority of the world's poor, especially those living in the world's rapidly expanding cities. The popular economy represents the last resort against extreme poverty, youth unemployment and social exclusion, and is made up of a multitude of small businesses, often family-run, but also of individual activities run by women and youth. Jobs vary greatly, and include: recycling discarded household equipment, repairing machines, sewing, selling and transporting water, making craft goods, and market stalls.
62. Environmental sustainability also requires a conscious commitment by all to reflect upon the values and principles that guide our actions. All cultures, communities, individuals and workplaces have their own views on what such values and principles should be and, given the need for sustainable development to be locally relevant and culturally appropriate, it is not possible to outline specific values to be encouraged in TVET. However, programmes should provide encouragement and opportunities for students to learn how to reflect upon their own values, how they affect lifestyle choices and the social, economic and environmental impacts that would result if everyone in the world believed and acted as they did.
63. Social sustainability is the third pillar of sustainable development. On both the global and local scale, social sustainability involves ensuring that the basic needs of all people are satisfied and that all, regardless of gender, ethnicity or geography, have an opportunity to develop and utilise their talents in ways that enable them to live happy, healthy and fulfilling lives. The concept of sustainable livelihoods embraces existing concepts of work and employment but widens them to include the multiple forms of economic and non-economic activities through which people create opportunities to sustain themselves, their families and their communities. The United Nations Development Programme defines livelihoods as “the assets, activities and entitlements which people utilise in order to make a living” – with assets including local natural resources (i.e. land, water, common-property resources, flora, fauna), but also social (i.e. community, family, social networks), political (i.e., participation, empowerment), human (i.e. education, labour, health, nutrition), physical (i.e. roads, clinics, markets, schools, bridges), and economic resources (i.e. jobs, savings, credit).
64. It is important to ensure that young people receive the required generic skills that the best education can provide to prepare them for a life of productive employment and to have the entrepreneurial skills not only to develop work opportunities for themselves and others but also to have the commitment and initiative to contribute to the social, economic and environmental well-being of their communities.
65. Thus, Quisumbing (2001) argues for an “holistic and integrated human resource development program” that “aims to prepare the individual to become a responsible, free and mature person, equipped not only with the appropriate skills and know how of the latest technologies, but also with deep human and spiritual values and attitudes – a sense of self worth, self esteem and dignity”.

## 5. REFORMS AND INNOVATIONS IN AFRICA AND OTHER PARTS OF THE WORLD

### *Africa: Vocationalising secondary education*

66. Many countries have tried to create or transform educational programmes in order to enable learners to apply their skills in working environments. In Sub-Saharan Africa, reforms have been implemented to "vocalize secondary education". In this approach, the main purpose of a student's whole curriculum remains general education; and the curriculum allows the student to remain on the track that could possibly lead towards higher stages of academic education (Lauglo, 2005). Hence, vocationalization means to add specific vocational subjects in the current curricula of secondary education. Vocational subject matter then typically takes no more than one-tenth to one-fifth of curriculum time. Under vocationalized secondary education, the student's weekly timetable typically conforms with a framework that is common to all secondary education. The same applies to the duration of the course. This approach clearly divides general subjects from vocational subjects but lessons can be learnt from these experiences. Kenya, Ghana and Botswana implemented the related reforms in current curricula with varying degrees of success.

### *Kenya and Ghana*

67. In Kenya and Ghana, the integration of technical subjects was too ambitious since they supposed to solve youth unemployment (Mwiria, 2005; Akyeampong, 2004). In addition, there was a lack of acceptance and consultation with most education stakeholders. The conceptualization of secondary education was wrong at the beginning because it put too much emphasis on adding high-specialized topic in the current overload curriculum given the resources available (time, funds and human resources) and remained on the division between practical and theoretical subjects. According to Mwiria, it could have been rethought by focusing on "skills which promote self-development, for instance communication skills and entrepreneurial skills among other skills" (2005, p. 294).
68. The failure to vocationalize secondary education in Kenya and Ghana is mainly due to financial reasons and lack of efficient management. In this regard, the position of Lauglo is relatively pessimistic for sub-Saharan Africa countries: "the degree of institutional integration of vocational training with the mainstream of the secondary system, which may be advisable for countries with well-functioning and well-resourced secondary school systems *that enroll the great majority of young people*, make little sense in systems that enroll a modest minority of the age group, where there is an urgent need of quality improvement in core general education subjects, and in which the financial and human resources needed to develop and sustain vocational subjects are much scarcer than in economically advanced countries" (Lauglo 2005, p.44).
69. The reasons of failure is due to : i) lack of correct planning, unattainable objectives (new systems were implemented in a short time and supposed to solve unemployment issues), ii) lack for adequate and regular funding by governments and donors, iii) vocational subjects were less a priority than literacy or numeracy, iv) vocational subjects were costly v) light dosage of vocational skills did not add labour-market value; v) lack of clear career paths vi) lack of public awareness in skill development (Wilson, 2005; Lauglo, 2005)

### *Botswana*

70. Using available resources from the diamond industry and having not suffered from structural readjustment policies, Botswana was partially successful to integrate generic skills in curricula, with the goal to vocationalize secondary education (Weeks, 2005). Regarding assessments, the core content of the reform was that “all practical subjects should have up to 50% of each student’s final grade made up of practicals and the student’s individual project” (Weeks 2005, p. 118). For instance, individual projects were assessed through: presentation, task analysis, planning, investigation and Research, realization/model/design, communication, self-evaluation, ability to be creative, interpretative and have a personal vision, ability to identify and solve problems.
71. Despite the development of new methods of teaching (student research and projects) further teacher training, provision of school libraries and reference materials were still needed to fully realize this new kind of assessment and teaching methods. In this regard, staff development coordinators have been appointed in all schools to developed in-service training (Weeks, 2005).

### *South Africa*

72. Johnson (2009) observed active learning classrooms in South Africa with regard to the latent skills of students and their preferred modes of communication. Learning occurred within a concrete project-based approach: building a vessel. Students were asked to investigate different kind of ships based on personal knowledge, create plans for the vessels based on group discussions, build and evaluate them. This approach typically enhances generic skills in schools. The author observed that learners had already many skills despite the one learned at school. They relied on knowledge learned out of school to meet assignments.

### *Latin America*

73. Silveira and Matosaos (2005) reviewed the Regional Programme to Strengthen the Vocational and Technical Training of Low-income Women (FORMUJER). The aims of the programme were to improve livelihood, working conditions and combat discrimination against women in the labour world. Among the different skills taught, some of them enabled women in securing, organizing and planning their own job with autonomy, reflection and flexibility: i) critical thinking skills (locate and critically understand information about reality); ii) adaptability skills (organize and adapt knowledge and oneself to new circumstances by anticipating threats and opportunities, manage tasks, decision-making strategy); iii) attitudinal skills to overcome the social and mental barriers that limit their empowerment such as : personal skills (ability to take a leading role and reinforce their identity and gender security) and social skills (teamwork, responsibility, self regulation, negotiation, etc) (Silveira and Matosaos, 2005).
74. Pedagogically speaking, training was based on modules for employability and citizenship courses which consisted in guidelines for teachers and the related pedagogical materials. Skills were taught through a project approach called "individual and/or collective occupational project". Women were asked to develop an occupational project by making a diagnosis on their competencies, defining their skills gaps, plan and execute related activities and assess the whole process. This approach enhanced their abilities to solve problems, acquire self-confidence and empower women’s autonomy in a discriminated environment.
75. Vocational orientation was also part of this approach. Individuals were asked to identify their abilities and parameters of the working environment, set up goals and objectives, planning and execute activities, monitor and assess these activities in order to identify gaps. However, the two main challenges remained to identify competencies and have motivated trainees.
76. Socio-economical disadvantages and obstacles were partially overcome with the help of all participants involved in the programme and national authorities (regarding transport, childcare, etc). This strategy qualified as "compensatory" was found to be a good didactic tool to teach generic skills because learners had to work together and solve collectively problems: "the compensatory strategies invites the individual to identify the problem, an see how he or she would

solve it on its own, or with the cooperation of and in co-ordination with peers" (Silveira and Matosaos 2005, p. 111). Horizontal partnerships (with the same kind of institutions and target groups) and vertical partnerships (with programmes for a wider scope), and a strong links with the socio-economic environment were particularly important for the success of this programme.

### ***India***

77. In India, network serves as the main basis to obtain and secure employment (Mitra, 2005). Therefore, local communities need skills to use their network for productive employment and negotiate decent work: "learning would imply both a process of becoming aware of the potential network or cluster of enterprises to solve problems and the acquisition of the competencies that are needed to implement solutions" (Mitra 2005, p. 163). In this regard, different NGOs (Development for Human Action and Management Enterprise and Development of Women) in India trained a whole community (adults and youth) at enhancing self-confidence to negotiate. This conceptualization of training moved away from narrow mechanisms and employment connotations toward the capacity to freely choose a career and develop it. These programmes were based on a learning-from-peers approach and teachers were more facilitators than instructors with a rigid curriculum. Training programmes were owned by the community because of its closeness to the working environment of youth. Therefore, teamwork skills, skills for accessing information and labour market trends were largely taught.

### ***Canada***

78. An account of the origins, anatomy and current challenges of the Government of Canada's Essential Skills Initiative for adults was described by Erik de Vries (2009). The political background of this programme is worth emphasizing: involvement of the regions in the process for identifying skills in different occupations, and integration of this initiative into the broader employment policies.
79. Nine essential skills required in Canadian occupations were described as follows: "reading text; document use; numeracy (encompassing distinct scales for numerical calculation and numerical estimation); writing; oral communication; thinking skills (including distinct scales for problem solving, decision making, critical thinking, job-task planning and organizing, significant use of memory and finding information); computer use; working with others; and continuous learning" (*ibid*, p. 2717).
80. These essentials skills were established through a process of literature review, consultation with experts in skills, and field testing through workplace interviews. Then, the description of skills was used for the National Qualification Framework and was sub-divided in relation to different occupations. The different levels of essential skills were based on the most complex tasks that employees need to solve. In the process of gathering data, interviewers collected authentic workplace materials as instructional tools for curriculum developers.

### ***United Kingdom***

81. As part of the Scottish Qualifications and Credit Framework, core skills modules were offered in the workplace (Canning, 2011). Based on a survey with workplace learners and a literature review, the author identified three ways to deliver workplace core skills: i) discrete delivery ii) integrated explicitly within a wider educational programme iii) embedded implicitly within existing educational programmes.
82. The way to deliver core skills depended on the exact skill taught. Communications and Information Technology were mostly delivered in an integrated way, working with others and problem solving were taught in an embedded way, and numeracy was delivered separately. This division is mainly due to few opportunities to teach numeracy in particular occupations, as

opposed to IT and communication and the fact that problem solving and working with others was too implicit in on-going work activities to be taught explicitly. Consequently, learners received very little structured training on these topics. Assessment methods were mainly weaving of evidence through an existing portfolio.

**Australia**

83. Dawe (2002) reviewed the way generic skills are being acquired and developed in Australian companies. In particular, a number of learning strategies have been used in both on and off-the-job training : short modules for few employees (small group training, mentoring, or discussion groups), large training sessions (conferences, workshops, seminars) and self-learning methods (learning guides and activities sheet, record of difficulties at work, softwares). Training organizations also used different learning strategies such as: project learning, community projects, use of critical incidents to focus on discussion and problem-solving, reflective learning on workplace practices, enquiry-based learning (NCVER, 2003b).
84. Curtis and Denton (2003) identified four approaches to assess generic skills by using Australian and International literature, as mentioned in Table 5.1. All these approaches required well-informed teachers or trainers about practices in companies.

*Table 5.1: Approaches to assess generic skills*

	<b>Assessment model</b>	<b>Strengths</b>	<b>Weaknesses</b>
<b>Holistic judgment</b>	Involves observation by panels of teachers or teaching teams of students in classroom-based and other activities, on which judgements regarding competence are made.	<ul style="list-style-type: none"> <li>- Authentic, provided relevant situations chosen for observation</li> <li>- Promotes clear and consistent view of what the skills are, the criteria, approaches and opportunities to be used in the assessment process and the standards expected</li> <li>- Multiple performance levels appear to be described</li> </ul>	<ul style="list-style-type: none"> <li>- Reliable within context, e.g. in a school or VET provider, where several assessors may be used, but lacks comparability across sites</li> <li>- Requires staff training</li> <li>- Summative (judgemental), rather than formative (over time)—thus has limited learning potential</li> </ul>
<b>Portfolio assessment</b>	This approach can reveal key dimensions of generic skills, which provide a framework in which learners can document their achievements and present evidence	<ul style="list-style-type: none"> <li>- Provides a rich data source</li> <li>- Compiling a portfolio may be a valuable learning experience for the learner, provided tools to assist in this task target skill development</li> </ul>	<ul style="list-style-type: none"> <li>- Influenced by other factors, e.g. written fluency of author, which may limit content validity</li> <li>- Lack of comparability among individuals (low reliability)</li> <li>- Time-consuming to extract</li> </ul>

			information from portfolio - Assessing portfolios is time consuming and has low reliability.
<b>Workplace assessment</b>	Work experience assessment appears to be a useful method and produces a simple report	- High validity - High learning potential if judgements are accompanied by informative feedback	- Low reliability: influenced by training of assessors and by opportunities presented by the work context
<b>Standardized instrumental assessment</b>	Independent assessment using standardised and purpose-developed instruments enables efficient assessment and provides a basis for reporting using a profile that is readily interpreted by learners and potential employers	- Efficient - High reliability - Produces a score that is comparable across individuals and occasions - Known precision, can lead to identification of a number of performance levels	- Limited authenticity - Summative rather than formative—limited learning potential

Curtis and Denton (2003)

85. Generally speaking, generic skills in Australia are assessed and certified in situations where learners use knowledge, technical skills and generic skills at the same time (Clayton and al., 2003). However, there are two kinds of approach to integrate generic skills in curricula. One of them is called the “diffusion model” where generic skills arise from the different disciplines and become embedded in the curricula rather than being explicit. The other approach would be teach and assess generic skills through separate courses, called the infusion model (Majumdar, 2009). Teachers or trainers would come from different field of knowledge and analyze a common problem from their own point of view, keeping the course interdisciplinary.
86. Assessment of generic skills are poorly documented and formally valued in Australia because it requires a heavy student management system able to handle a large variety of results and further financial resources.

## 6. LESSONS, RECOMMENDATIONS AND MESSAGES

87. Much UNESCO-UNEVOC initiated research and development concentrated on identifying and conceptualising skills in two ways for different purposes: (i) as generic (broadly transferable) sustainable development-related skills and (ii) occupational job specific sustainable development skills (Chinien 2003, Boutin, Chinien 2009). TVET systems (whether real systems or theoretical concepts) are in this view seen as not understanding the theory and practices of sustainable development. “TVET in many countries remains locked in the role of being a mere supplier of skilled labour to industry and is therefore unable to respond effectively to the needs of sustainable development strategies.” (Park et.al. 2009, 225) A number of studies have been undertaken to identify and develop domain independent generic skills as “required by the twenty-first century organisation.” (Park et.al. 2009, 229)
88. Such skills (which are rather competencies) are indeed important and need to be included already in the curriculum of general education in developing countries. Whether a TVET system in African countries, as underdeveloped as it may be, should first of all and as a priority care for the education and training of such type of skills at the expense of urgently needed job-relevant and work-specific skills is at least debatable given the poor status and the weak performance of these systems and the overall poverty situation in these countries. More recent attempts of curriculum development and bridging academic and vocational education – as documented in UNEVOC’s international handbook of education for the changing world of work (Maclean, Wilson 2009) and other publications – seem to be more realistic and less ideological.
89. Towards the end of the first decade of the twenty-first century “an international consensus has been reached that a holistic, integrated, inter-sectoral approach to education is crucial, including TVSD (Technical and Vocational Skills Development, BS) and training in the informal sector. This new vision is permeating several skill system reforms which are currently taking place in Africa and revamping donors’ support.” (Wegner, Komeman 2008, 5f.) A few countries such as Ethiopia, Uganda, Mozambique and Egypt (to mention just a few) have even managed or are attempting to establish an own TVET system as a sub sector of the overall education sector. It also seems that the controversy regarding the role of TVET in respect of sustainable development is now seen in a broader and more differentiated and thus more realistic perspective.
90. The question should not be whether or not TVET should be a moral leader or a follower in respect of sustainable development as advocated by a number of authors of the international handbook. (Karmel, 2009, 499) Some of them “seem to see sustainable development as field of contestation in which TVET must find allies against vested economic interests ... This approach stands in contrast with the instrumental view dominant in many countries that expect TVET to produce well-trained graduates who have the skills required by employers. Such a view does not necessarily downplay the importance of sustainable development (however defined) but is based on a world in which sustainability issues are driven by the economy, not the education system.” (Karmel 2009, 503) It is advisable to stick to the definition provided by the World Commission on Environment and Development in 1987: sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their needs. If such a definition were to be adopted then it would provide a clear focus on the balanced integration of environmental, social and economic issues without requiring TVET to be a panacea for all the ills of the world.” (Karmel, 2009, 505)
91. A number of conferences and high-level meetings have helped to bring TVET back to the international agenda: “Recognizing that the vast majority of the world-wide labour force,

including knowledge workers, require technical and vocational knowledge and skills throughout life, we affirm that skills development leading to age-appropriate TVET should be integral to education at all levels, and can no longer be regarded as optional or marginal. It is especially important to integrate skills development in Education for ALL (EFA) programmes and to satisfy TVET demand created by learners completing basic education.” (UNESCO-UNEVOC 2005) The Bonn Declaration (23 October 2004) by further defining priority areas and initiatives such as alleviate poverty, promote equity, support youth in crisis etc is a very clear confirmation of the role of TVET as advocated for by the authors mentioned above (“skills development for employability and citizenship”).

92. In most African countries and particularly in the Sub-Saharan countries “TVET only trains, on average, between 1- 5% of young people in search of employment, with the exception of a few countries where up to a third of young people are enrolled in these subjects at secondary level. Most of these subjects are, in fact, carried out by already existent means of informal training, such as on-site training and traditional apprenticeship.” (Walther, Kronner 2008, 4) Their TVET systems are characterised by a multiplicity of constraints that limit its expansion and impact on development. “Major problems include the inadequate quantity and quality of teaching staff, obsolete equipment and teaching curricula, and little relationship with the job market.” (Wegner, Komenan 2008, 5) In addition, in many countries TVET still suffers from a low status due to lack of recognition and weak legislative and regulatory mechanisms. Clearly identifying the major constraints and analysing the peculiarities and needs of economies and labour markets is a prerequisite to its reform.
93. Various country enquiries, field surveys and studies (as for example undertaken in the wake of the ADEA Biennale) show that there are many paths towards, as well as mechanisms by which, throughout the African continent, TVET can be improved or established. There is no universal single solution for all countries on the continent available rather a sort of kaleidoscope of programmes, projects, experiments, “a whole array of ways and means” (Walther, Kroenner 2008, 6) from which national analysis could start. This offers an opportunity of “integrating all the providers of public and private formal, non-formal and informal training into an integrated system of professionalization which relies on the strength of tradition, whilst making sure that it evolves according to the standards of quality and the technological evolution of a market that has become increasingly global. (...)
94. Although some countries have made heavy investments in the integration of paths toward non-formal or informal vocational training within the global system of education and training, other countries have initiated important reforms of TVET which are likely to better respond to economic and social demand, whilst developing new forms of public/private partnership. (Walther, Kroenner 2008, 7)
95. Linking adult education with vocational education (AVE) is another recent concept. “AVE differs from TVET partly through its inclusion of adult and community education as an important setting for imparting knowledge and skills for sustainability. (...) We see adult and community education as an adaptable vehicle for community development in areas where early schooling and post-compulsory education have been inadequate. Further, unaware of adult education methods, many TVET providers struggle when dealing with retrenched workers looking to re-skill or indeed with adult learners in disadvantaged areas who have never received initial formal training.” (Willis et.al 2009, 2) This applies particularly to the informal sector and traditional agriculture where the majority of labour in Sub-Saharan countries is employed and a remarkable portion of the labourers are semi-literate or even illiterate. The way to deliver such education and training, whether by schools or other types of provisions depends among others on the availability of employment opportunities and the educational background and needs of the adults in question.
96. Today’s global and technology-oriented world necessitates the education and training of knowledge workers who are able to apply their skills in different working environments. In the

particular situation of Africa, population growth among youth and increase of enrolment rate at the primary school put a lot of pressures in labour market within the African context and require appropriate education and training for this population.

97. General education (early childhood education, primary education and secondary education) does not qualify enough students and does not prepare them to enter the world of work thus endangering the achievements of the goals of envisioned programmes of the UN such as EFA, the MDGs and SD.
98. EFA initiatives in many countries and in particular in the LDCs have concentrated too exclusively on Universal Primary Education (UPE) and literacy (for children) and thereby neglected developing and designing longer-term pathways of learning and subsequent structures of a comprehensive system of lifelong learning. Over the years two trends have become increasingly clear: that literacy alone and a basic education consisting of a few years of primary schooling (whether 6 or 8 years) does not qualify for paid jobs and employment, and secondly, that even a second cycle of (up to 6 years) secondary education does not prepare the students for post basic learning, professional training and the world of work. They greatly lack the requisite knowledge, generic skills or competencies and attitudes
99. In the different publications reviewed, there is a broad agreement that the increase of informal employment, scarce resources and high employment mobility in Sub-Saharan Africa requires to teach generic skills rather than highly-specialized skills for technology and industry sectors (Pieck, 2005; Silveira and Matosaos, 2005; Mwiria, 2005; Akyeamong, 2005; Haan, 2006; Mitra, 2006;). In addition, it is hardly feasible to match occupation-specific skills and the type of work that the learner will do because of influential social network in labour markets (Lauglo, 2005). In this regard, generic skills are more likely to be used in future work than occupation-specific skills.
100. Current education and training systems do not sufficiently provide opportunities to deliver these skills to a large population. Concentration of public resources allocation at the primary level has allowed the private sector to deliver education and training in other educational levels. Since young people can face the labour market in all step of their life, the state should play a strategic role in building educational policies which engage actors in delivering generic skills in education. Capacity building activities can be developed to help ministries in taking up this strategic role.
101. This role particularly includes establishing policies or frameworks in order to foster the development of generic skills, through the following themes: definition and selection of generic skills, mobilization of stakeholders, curriculum development, assessment and certification, teachers' education and pedagogical resources and improving governance.

### ***Generic skills***

102. The reviewed publications show that generic skills focus on the capacity to apply knowledge and skills in an integrated way in work situations. Examples of these skills are: collecting, analyzing and organizing information, communicating ideas and information, planning and organizing activities, working with others, solving problems, using mathematic ideas and technology. This list gives only a basic framework to policy makers and administrators, keeping in mind that there is no list of generic skills relevant for every countries.
103. Independent think tank can help policy makers in the technical aspects of selecting appropriate generic skills (De Vries, 2009). Actually, more research should be conducted at a national level to scrutinize the generic skills needed in both formal and informal sectors. Employers should be involved in the process of selecting, specifying and analyzing the levels of generic skills to be taught in the national education system. In addition, devolution agreements to regional partners can be negotiated with national ministries to improve the geographical relevancy of this selection. However, the promotion of these skills should be taken at a ministry levels through educational and employment national strategies and policies.

104. Generic skills should be specified based on the different occupations recognized in the country and should be used to shape the National Vocational Qualification Framework, if available (De Vries, 2009). Workplace surveys, and field testing with employees can facilitate this specification and improve the recognition of these skills by economic sectors. In addition, the complexity of generic skills to be acquired by learners should increase depending on the educational level and complexity of tasks in the different kind of employments

### *Mobilization of stakeholders*

105. Partnerships and cooperation among key stakeholders (training providers, communities associations, and employers) need to be forged at the systemic level. These institutions should present proposals to the state and governments may invite interested parties to bid for public money in order to fund training initiatives and participate in shaping public policies (Silveira and Matosaos, 2005; NCVER, 2003b).
106. With the view to develop cohesiveness in training initiatives, partnerships among the training providers, which target the same or different population groups, should be promoted. Training activities of the private sector and civil society can be institutionalized and received certification from the state to deliver diplomas. However, partnerships are only possible when governments have a clear national policy for all educational levels in order to meet livelihood needs of the population.
107. Significant innovations reviewed in this study were provided by NGOs. These organizations offered mainly on and off-of-the job training, aside from the school system. Governments should encourage NGOs to make use of existing formal school and institutions in the evening and out-of-office hours. In this regard, governments should identify the most successful NGOs to collaborate closely with them in delivering generic skills in and out of school.
108. The motivation and aspirations of students to go and stay in school, complete education cycles, continue learning, undertake training and involvement of parents to support these processes depends on their expectations to generate sustainable income in the future. Therefore, realistic perspectives for acquiring qualifications and competencies (besides university diplomas and degrees) need to be offered as incentives.

### *Curriculum development*

109. Generic work-related skills should be incorporated in current curricula from early childhood to higher education. This integration can be done through different approaches: Generic skills being taught as separate subjects or being integrated into the particular fields of knowledge (technical subjects, occupational projects or disciplines). The degree of integration depends also on the particular generic skill taught (for instance, numeracy skills were taught separately).
110. A hybrid model, using both approaches, can be used depending on the requirements of curricula and available resources (Majumdar, 2009). The fact is that generic skills derive their meaning from being local and particular (Canning, 2011). In both approaches, experiential learning should be fostered at school: generic skills cannot be taught theoretically. Even if generic skills can be transferred in other contexts, generic skills are acquired when they are applied to specific field of work.
111. Experiences in Africa of vocationalized secondary education shows that adding many vocational courses in current overcrowded curricula are too costly for most African countries. In this regard, the reorientation of pedagogical approaches may be a better option for low-resource countries than a light dosage of generic skills courses to enhance employability of youth.

112. Actually, teaching generic skills is not about what should be taught or not. Rather, the different studies reviewed show that teaching methods and assessments were of great importance to reorient curricula. For instance, learner-centred approaches like “self-reliant learning” or “project-based approach” can be used by training providers. In these approaches, a goal is given to learners or they set up their own goal. Then, they plan the steps within a team or individually. The teacher makes them aware of information sources or gives lectures related to the goal and the learner change or keep the planned steps accordingly. Finally, the teacher and learners discuss the results and final assessment (Höpfner, 2009). In this kind of pedagogical practices, the role of teachers is more a coach or an advisor than an instructor who transfer knowledge into minds and assignments become the key means of communication. One challenge in this approach is to enhance the relevancy of teaching towards the use learner potentialities: “being able to draw upon those things that students know and can do is an important ingredient for raising the quality and relevance of education and making it appropriate to the changing economic and public demands” (Johnson, 2009, p. 1782).
113. New national general certificate for basic education (primary and secondary level) should be developed with the goal to make knowledge and skills applicable to working environments. In addition, admission of students in upper secondary level should be based on the performance of low secondary students in generic skills as a “carrot” to motivate them (Weeks, 2005).
114. Any change in curricula should include acquisition of generic skills as a clear instructional goal, giving the main direction to plan activities and use new pedagogical approaches. Given this goal, the classroom activities should be redesigned to support this goal (sub-groups, project work situated learning) and opportunities to practice (Hamzah and Abdullah, 2009).
115. Entrepreneurship education could be provided in schools. “Training in entrepreneurship and business skills could be taught towards the end of the basic education or lower secondary education, BS cycle, as these are targeted skills best transferrable over a short, focused period.” (Wegner, Komenan 2008, p.5). Indeed, studies on the livelihoods of poor people in Africa (among them Oxenham et.al. 2002 and Sandhaas 2005) showed that livelihood skills training programmes that incorporate literacy education and appropriate entrepreneurship training (plus start-up capital) form a promising approach of reducing poverty and supporting sustainable livelihood among the biggest marginalised and excluded group.
116. School does not have ownership in teaching generic skills. The opportunities in learning generic skills can also be given by the social background of young people (parents, work environment, religions, cultural associations, communities) besides school. In this regard “school work and social life at school can be organized in ways to enhance such capacities, rather than discouraging their development” (Lauglo 2005, p.47).
117. Indeed, many programmes enhancing generic skills targeted both adults and youth (for instance, in India and Latin America). In this regard, the relationship of learners with families, communities and professional networks should be included in educational programmes. Social-environments of learners including parents, employers and local communities should be taken into account in designing training modules.
118. Consequently adult education should be linked with vocational education through adult vocation education (AVE) “AVE differs from TVET partly through its inclusion of adult and community education as an important setting for imparting knowledge and skills for sustainability. (...) We see adult and community education as an adaptable vehicle for community development in areas where early schooling and post-compulsory education have been inadequate. Further, unaware of adult education methods, many TVET providers struggle when dealing with retrenched workers looking to re-skill or indeed with adult learners in disadvantaged areas who have never received initial formal training.” (Willis and al 2009, p. 2). This applies particularly to the informal sector and traditional agriculture where the majority of labour in Sub-Saharan

countries is employed and a remarkable portion of the labourers are semi-literate or even illiterate. The way to deliver such education and training, whether by schools or other types of provisions depends among others on the availability of employment opportunities and the educational background and needs of the adults in question.

### ***Assessment and certification***

119. The use of innovative and learner-centred methods of assessment is an indicator to know whether generic skills are really taught by training providers. Curriculum reforms become a reality only if teachers evaluate their students with appropriate methods as it was shown in the case of Botswana (Weeks, 2005). In this regard, a significance part of student's grade should be based on individual and collective projects, in the context of real or simulated working conditions. New assessment standards would be required, mentioning explicitly the foreseen generic skills to be acquired (Hamzah and Abdullah, 2009).
120. Generic skills are not learned only in the short period of schooling but also throughout adulthood: "The competence level underlying key competencies (i.e. reflectivity) that would equip individuals to enact successfully the competencies considered necessary for adults in today's societies develop only gradually throughout adulthood. Research tells us that this level of mental complexity will not ordinarily be obtained until adulthood. Before individuals can distance themselves from the socializing press, make independent judgments and take responsibility for their actions, they need to be well socialized" (Rychen, 2009 p. 2581). In this regard, individuals should be evaluated depending on the complexity levels of skills required in each step of their life, in the period of schooling and working.
121. The way generic skills are being assessed should be clear and easy to understand by learners, teachers and trainers. Learners should know explicitly what the teacher or trainer expects from him/her in order to achieve successful grade. In addition, assignments can also be more or less opened given the degree of precision in guidelines. A close assignment enables learners to develop their capacity to collect information effectively whereas an opened assignment enables them to decide, plan and organize actions (Höpfner, 2009).
122. The generic skills acquired by learners should be certified and recognized by employers through the following means: i) a mechanism to communicate the scope of generic skills to learners, trainers and employers ii) cost-effective mechanisms to collect and communicate the performance of learners to employers and trainers (NCVER, 2003b). These mechanisms would also serve to raise awareness about the importance of generic skills to all education stakeholders and motivate learners to acquire them.

### ***Teachers' education and pedagogical resources***

123. In Africa, teacher training and pedagogical resources are major obstacles to teach generic skills. In order to overcome these challenges, teachers and trainers should learn from other practices within their organization which requires teamwork by learners and team teaching by teachers (Weeks, 2005). In this regard, teachers and trainers should be provided with incentives and guiding frameworks to share their practices, to develop their own syllabus, pedagogical competencies and innovative instructional materials.
124. A close relationship between former students, teachers and employers should be kept in the period of schooling and even after in order to help teachers to understand generic skills required at work. Teachers should have opportunities to be in contact with professionals of the public and private sector to update their knowledge about the world of work (NCVER, 2003b). These opportunities would enhance their confidence and competencies to deliver and assess generic skills and being better socially recognized in their work.

125. Implementing new pedagogical approaches also requires training teachers about the formal models of learning and the related theory of mind. It implies to understand how the mind undertakes action and mobilize the relevant knowledge: setting a goal, breaking into sub-goals, collecting knowledge, guidelines and experience to undertake action and plan the step for action (Höpfner, 2009).
126. Teaching materials should provide contextual advices on the way to deliver and assess generic skills in order to facilitate comprehension of the materials by the teacher (Dawe, 2009). Some examples can be found in communication laboratories and the related laboratory softwares which aimed at improving the business communication skills of learners.

### *Improving governance*

127. In the different publications reviewed, it has become clear that the role of government should be strong enough to build effective educational policies besides provision incentives to training providers: “while governments need to promote a more friendly investment climate for those who create their own employment, where skills are concerned, their role in policy development and reforms to promote a more equitable, market-responsive training system for all is of greater importance than initiatives to provide or finance training for the informal sector. Policies that open the market to private providers, including NGOs, are important to expanding access to skills and reducing demands for public expenditure. Policies that provide information to the market about the skill requirements of jobs available and the quality and relevance of training offered by different providers can lead to a more efficient allocation of public and private spending on training. Policies that promote competition in delivery and financing that enforces accountability among providers can together improve training outcomes and lower costs”. (Adams, 2009 p. cxxiii)
128. Reforming policies, structures and aims of an education system requires setting up realistic objectives, planning actions in a timely manner and identifying specific challenges and opportunities of local, national and even continental economies and labour markets. Governments and donors should also be able to ensure regular funding in order to let the country to have a long term vision in building generic skills in the country.
129. Even if drivers of reforms in individual countries should remain specific, it is also possible to list up a number of issues that could function as principles for reforming education system as a whole. They have been identified through comparison and research, though experience sharing and identifying of good practices:
- Educational planning should be comprehensive and referring to all three concepts: sustainable development, the world of work and lifelong education and learning.
  - A holistic, integrated and inter-sectoral approach is crucial; such a vision is permeating skill system reforms currently taking place.
  - Overall system reform instead of partial reforms requires that sufficient space, time and resources are devoted to enabling reform learning to take place.
  - Countries should learn from the experiences of those that have gone through similar processes, and from international and regional cooperation and exchange.

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