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Perspectives on Vocational Education in Africa

Shoko Yamada
Indiana University

Abstract: The aim of this paper is to provide a landscape view of the values and justifications of different types of vocational education, specifically in Africa. At first, the paper will review the justifications of vocational education. African governments often state that vocational education is the most efficient means to meet the manpower demand in the labor market. However, this justification is rarely supported by empirical data. The paper reveals that there are other reasons that governments do not give up this form of education. Three different types of vocational education are here examined: Separate-track vocational education; vocationalized general education; and non-formal vocational education. Based on the review of the opinions of people who promote or criticize each types of vocational education, the paper will show the strengths and weaknesses of each type. This analysis will serve to better understand and consider the vocational education in Africa.

"Vocational training/education in industrial technology" has been the largest part of the JICA's (Japanese International Cooperation Agency) cooperation in the field of education (see Figure 1). So far, JICA's programs in this category have been infrastructure building, technical assistance, and trainin of teachers/trainers and administrators for the establishment of independent vocational education/training institutions at the secondary and higher levels of formal and non-formal education. The types of vocational skills taught in these JICA-funded institutions have been diverse: fisheries, farming, electronics, automobile repair, information technology, architecture, etc. The types of skills taught have been decided basically according to the request of the respective government. Although JICA also conducts a needs assessment before implementation, it mostly assumes that the request from the government is based on the forecast of manpower needs on the side of the government.

Given the fact that one third of JICA's fund for education has been spent for vocational education (34.1 percent in FY 1998), it is important to review whether or not the funding policy in this area meets the general economic and labor market conditions of the countries' JICA support and to consider the future policy so as to maximize the utility of the funds JICA provides. The purpose of this paper is to overview the recent debates about vocational education in developing countries as a basis for considering what direction the development assistance in the area of vocational education might head. Arguments in support or critical of different forms of vocational education at the secondary level will be examined. In the formal education sector, many people believe that secondary schools are the most

appropriate level for introducing vocational education in any form, as secondary students stand between primary school graduates who have the minimum academic skills for simple work and university graduates who will fill white-collar positions. How to prepare the secondary school graduate for the world of work is an issue of discussion among many vocational educationists. While the paper gives a special attention to Africa, there are many commonalities of conditions among developing countries throughout the world. The reason for focusing on Africa is that its marginalization in the world economy and its mismatch of education policy and labor market demands are more emergent problems than in other economically disadvantaged regions.

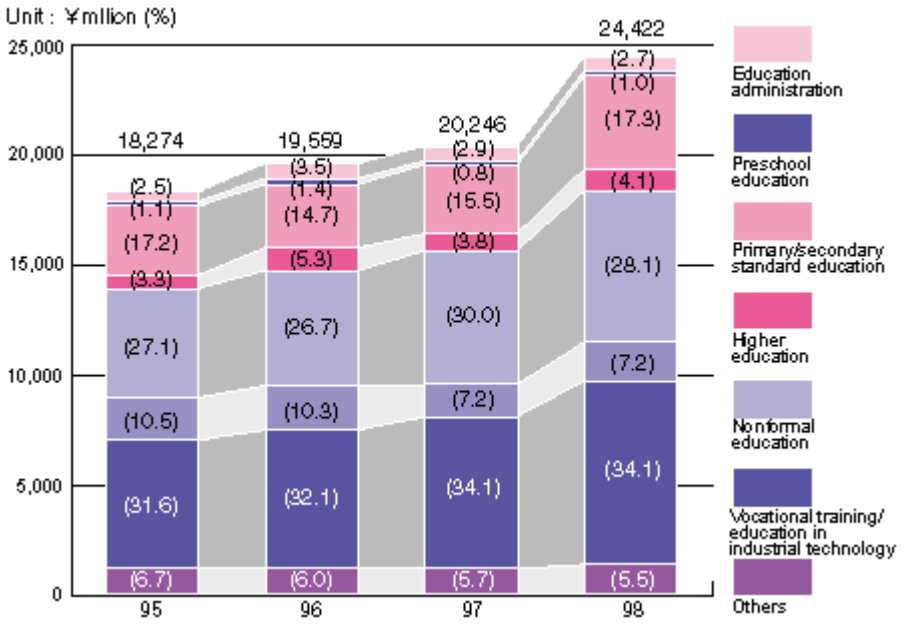

Figure 1 : Trends in JICA's Cooperation in the Field of Education

Source: JICA Internet home page

Change of Labor Structure and Vocational Education in Africa

From the 1980s, Africa has experienced widespread economic recession. The share of Africa in international trade, estimated at eight percent in 1970 (46 percent of which was for all the developing countries) dropped by a half (four percent) in 1990 (41 percent for the developing countries) (UNESCO Regional Office for Education in Africa, 1995:2). This economic downfall coincided with the IMF/World Bank-led structural adjustment of most of the African economies. As a result of the structural adjustment, which aimed at streamlining the government sector, the governmental and quasi-governmental enterprises decreased their areas of operation and the number of their employees.

The fall-off of government employment and the shrinkage of the formal labor market in general drove a large number of people to employment in the informal sector.i Although the role of the informal sector in maintaining a large share of African economies has been characteristic, its growth in the last two decades has been enormous. This change in the labor market resulted in the irrelevance of formal vocational education in secondary schools. There is a widespread tradition of apprenticeship in Africa, by which the youth are trained for jobs in small- and micro-scale enterprises in the informal sector. Recruitment for apprenticeship in these enterprises highly depends on kinship or other social relationships between masters and apprentices' families. Knowledge of some skills acquired in formal vocational education is often not an important criterion for employment in this sector (Fluitman, 1992:5). In sum, on the one hand, graduates of vocational secondary schools have limited prospects for employment in the formal sector; on the other hand, their lack of social relationships often becomes an obstacle for these graduates to acquire jobs in the informal sector. (See McGrath and King 1999a and b; Honig, 1993; and Mahomed, 1996)

Justifications of Vocational Education

Economic Justification of Vocational Education

Underlying the emphasis on vocational education is the assumption that training for the type of skills which match the demand of the labor market will increase the productivity of individual workers and, as a result, contribute to national economic development. Vocational curricula of secondary schools are designed according to the manpower forecast. The human capital theory, developed in the early 60s, analyzes rates of return to the investment in education. The difference between wages of graduates and the cost expended by individuals (tuition, transportation to school, forgone opportunities of earning, etc.) and by the society (tax revenue spent for education) is calculated as the private and social rates of return respectively. The higher the rates of return, the more effective is considered the education is in preparing the workforce.

Contrary to the assumption of vocational education advocates, empirical data do not often demonstrate higher rates of return to the investment in vocational secondary education than in academic secondary education. Rather, it is more common that net returns for vocational education are lower than those for academic education. When the capacity of vocational schools to produce a workforce exceeds that of labor market to absorb them as workers, overproduction of vocational graduates leads to wages lower than the costs of education or unemployment. Such instances are reported for Benin, Mozambique, Niger, and Somalia (Ziderman, 1997:357). Based on evidences from Tanzania and Columbia, Psacharopoulos argues that "the expense of schools [which introduced practical subjects] was considerably more than that of the conventional academic schools. ... [However,] graduates from [vocationalized] secondary schools do not find employment more quickly

than graduates from conventional schools and ... do not demonstrate higher initial earnings than those from traditional academic schools (Psacharopoulos, 1988:275)." Other studies find that there is no significant difference between the earnings of vocational and academic graduates. Zidderman cites studies in Ivory Coast (West Africa), Indonesia (South East Asia), and Peru (Latin America) which support these findings as examples of this phenomena (1997: 357). To make things more complicated, there is often gender bias in the rates of return to different forms of education. Horowitz and Schenzler demonstrate that in Suriname (Latin America), private and social rates of return on vocational secondary schooling is negative for females but positive for males (1999:15-17).

More recent studies report positive rates of return on vocational secondary education. A study in Turkey, where up to half of all high school students are enrolled in vocational and technical high schools, shows that male graduates of vocational and technical high schools have not only a higher probability of wage employment but also significantly higher wages and rates of return than general high school graduates (cited in Ziderman, 1997:359). Even Psacharopoulos, who has been a strong opponent of vocational secondary schooling, became more ambiguous about the effectiveness of vocational education lately. Analyzing data from eleven countries in Latin America, he found that half of these countries (six) "show that the [social] rate of return for vocational secondary education is higher than that for secondary general education (Psacharopoulos, 1994:7).ii It was also reported from this study that, in seven out of eleven countries, the private return to secondary education does not differ between general and vocational education.

Political and Ideological Motivations for Vocational Education

Although there is little empirical evidence either to confirm or reject the hypothesis in favor of vocational secondary education, governments of developing countries have not lost their enthusiasm to provide this type of education. The continuous involvement of these governments in vocational education suggests that there are other objectives than productivity enhancement involved. Governments often employ political justifications, in addition to economic ones, for this type of education. One of the popular justifications is the reduction of youth unemployment. J. Lauglo found in Kenya that "the efforts at [vocationalization] had not been so much an attempt to meet certain projected manpower needs as an essentially political response to a situation in which the school-leavers from the regular academic programs of the schools were increasingly having difficulties in finding jobs (cited in Bacchus, 1988:35)." Because of the current restricted economic situation and growing unemployment, as noted above, this justification is common with respect to many African countries' education policies. To prevent these unemployed school-leavers becoming a threat to social stability, the governments often strengthen the provision of vocational education. Second, some governments state that vocationalization will lead to a wider variety of subjects than available in a strictly academic education,thus increasing the equity of educational opportunities. Benavot points

out that this emphasis on equity reflects a global ideological trend for egalitarianism that has existed since the 1950s (Benavot, 1983:73). The scheme to increase the number of vocationally-oriented rural schools has been promoted in many places as a way to increase the opportunities for the rural population to be schooled, while avoiding an overly Ôacademic' curricula considered irrelevant to rural life. The advocates of this scheme argue that it will enhance the equity of accessibility to education. However, this is a slippery justification. Lauglo argues that distinct tracks of academic and vocational courses may lead to an inequality of future prospects between respective students (Lauglo, 1988:13). According to his argument, the inclusion of vocational subjects in a general secondary curricula (Ôvocationalization' of general secondary education) can be justified by egalitarianism, but not the creation of a separate-track vocational education. This issue of separate-track and vocationalized secondary education will be explored more deeply in the following sections. Third, one justification recurring since the colonial period is that vocational education can change youths' aspirations from white-collar jobs to manual employment. In some cases, this justification is advocated as a means to improve the earnings of the poor and other disadvantaged groups by reorienting them to locally available jobs (Ziderman, 1997:361). In other cases, it is argued that reorientation of students to manual work and agriculture, which are dominant occupations in the rural areas, will halt urban migration (Sifuna, 1990:6; Honig, 1993:4).iii There are also instances when governments have had the intention of using vocational education in schools to keep students out of higher education (cooling out) (Gill and Fluitman, 2000:4). There are limited seats in higher education, and the government often deliberately limit the intake of students to higher education, because (1) the government cannot afford the cost of higher education if it become larger; and (2) there are not as many white-collar jobs as the number of the university graduates. Lastly, a less frequent justification of vocational education is populism. Some countries, especially socialist countries, promote vocational education as a way for the masses to go back to "real life", coupled with the sentiment of anti-intellectualism. Lauglo refers to the populism as: "[it] typically celebrates the importance of work as a source of moral fiber, self-reliance and civic virtue. Productive physical work is, from this perspective, educational in that it develops valued personal qualities. Populism may be skeptical of formal schooling on the grounds that it unduly distances the young from their cultural origins, or because school removes a person from the hurly-burly of "real-life" situations in which true character is formed." (1988:7)

The governments which plan and implement the vocational schooling with the non-economic objectives as listed above tend to pay less attention to the nature and the dynamics of employment. These objectives will not be achieved unless parents and students believe in a good employment opportunities of vocational education. Therefore, the failure to understand the existing labor conditions can be a serious problem for any vocational education scheme. This is one of the reasons

why many governments in developing countries have been unsuccessful in achieving their intentions by providing vocational education.

Vocational Education as a Separate Track from General Secondary Education

The dual secondary education system with separate tracks of general and vocational education in Africa traces its origin back to the colonial period. Since the formal education system introduced to African colonies was modeled after a European education system which segregated students on the basis of social class, academically-oriented general secondary schools became elite institutions from which colonial governments recruited lower-order government officials. Vocationally-oriented schools provided the masses with the skills for manual work and agriculture. Africans opposed this class-based stratification between general and vocational secondary school as a sign of oppression. However, at the time of their independence in the 1950s and 60s, most of the independent governments maintained this stratified education system. The perception that vocational education was a second-class form of education, born during the colonial period, persisted. International organizations such as ILO, UNESCO, and the World Bank played significant roles in enforcing the dual-track secondary education in African countries during the post-war period. International and regional conferences sponsored by these organizations kept advocating vocational education. The promotion of vocational education was backed by the financial assistance of international organizations. According to Benavot, throughout the 1960s and 1970s, the share of World Bank loans for vocational programs in developing countries was almost the same as for general education (1983:65).[iv] As mentioned earlier, this global trend of the separate-track vocational secondary education was advocated as justifiable on the basis of econometric analyses of private and social rates of return to the investment in this form of education.

Since the late 1970s, there arose criticisms of the vocational education as a separate track. As it came to be known that empirical data do not often support the relative advantage of vocational education for human capital development, the social and economic realities of the vocational track began to be examined more critically. There are mainly five reasons why scholars disapprove the separate vocational track and support the vocationalization of secondary education: (1) Vocational graduates often experience economic and social inequalities; (2) the tracking tends to be biased by class and gender; (3) the high unit cost makes it difficult for vocational education to achieve a higher social rate of return than academic education; (4) students' occupational aspirations are irrelevant to the content of education; and (5) vocational education at school lacks flexibility and adaptability to changing technical and social needs. First, the prevalent perception that vocational education is an inferior form of education tends to make employers pay less to vocational graduates or to hesitate to employ them (Verner, 1999). Also, employers are often skeptical of schools' capacity to train

vocational skills and do not place much importance on the formal vocational education in hiring people (Lauglo, 1988:11). In addition, the vocational track effectively inhibits the possibilities of students pursuing a higher education and related white-collar jobs (Sifuna, 1990:11). In fact, this is often stated objective of governments in promoting a separate-track vocational education as discussed in the previous section (cooling out). Second, the recruitment of students to different tracks is often biased by class and gender and helps to reproduce social inequalities (Bhola, 1995:27-8). Psacharopoulos reports that the outcomes of his research in Tanzania shows that the average difference of family income and years of father's education between students of academic secondary schools and agricultural schools are 7,400 shillings and 1.5 years respectively (1988:262). Kerre reports that in Kenya, women's enrolment in technical education is below 40 percent (Kerre, 1999:206-7). Therefore, at least in some countries, social and gender bias between students of different tracks of secondary education can be demonstrated to exist. The third criticism is that vocational education is a costly investment. According to Honig, vocational programs cost up to six times more than that of academic programs (8). Even supplemental courses, (i.e., not a full program), are expensive. Lauglo found that industrial education courses in Kenya are two and a half times more expensive than science courses, and eight times as expensive as math or Kiswahili courses, in terms of initial development costs per student (cited in Honig, 1993:8). (see also Baccus, 1988:38). As there is a tendency for vocational graduates to be paid less than their productivity, the probability that investment in the vocational track pays off becomes still lower. Fourth, some critics argue that students' aspiration for jobs has nothing to do with the content of education they received. In his influential paper, Foster states that what schools teach does not matter so much as the job structure and expected opportunities in the wider society. According to him, in independent Ghana in the middle of the 1960s, the primary employers in the formal sector was the government, which preferred to employ graduates of academic secondary schools over those of vocational schools. As a result, academic schools are more "vocational" than their counterparts in terms of preparation for the world of work. (Foster, 1966) Not only in Ghana in the 1960s, but also in many other places, schools' role to provide credentials for certain types of job is perceived by students and parents as more important than the actual curriculum. In Africa, the perceived inferiority of vocational schools to academic schools is a widely held belief. In such a situation, the chance of the vocational curriculum actually making an impact on the labor market becomes smaller. The last point is closely related to other criticisms raised above. Namely, vocational education in formal schools is rigidly structured and unable to respond to changing technical and vocational needs. As the speed at which the curriculum is developed and revised is not fast enough to keep up with the changes in technology, formal vocational education tends to be irrelevant to labor market demand. (Honig, 1993:13; UNEVOC, 1997:13) It is not unusual for vocational graduates to be employed in industries different from the ones they were educated for.

Vocationalization of the General Secondary Curriculum

Having realized the problems of separate-track vocational education at the secondary level, in the late 1970s, international organizations and African governments began to shift their emphasis from separate-track vocational education to diversifying general secondary curriculum through the introduction of vocational subjects. In 1976, a Conference of African Ministers of Education held in Lagos, Nigeria, adopted the vocationalization of secondary education as a major policy in education on the continent. It announced:

> African states should provide a new form of education so as to establish close ties between the school and work: such an education based on work and with work in mind should break down the barriers of prejudice which exist between manual and intellectual labour, between theory and practice and between town and country. (cited in Sifuna, 1990:8-9)

Supporters of the vocationalization of general education claim that it will reduce social and economic inequities between vocational and general secondary students and graduates. As all students have equal access to general subjects, and not exclusively vocational subjects, this form of education is less biased than the separate-track secondary education for different classes, sexes, or races (Lauglo, 1988:13). It is also said that a diversified curriculum will increase the rates of return to the investment in vocational education, as it can respond to demands in the labor market more flexibly. Because it provides a range of subjects from which students can choose, according to their aspirations and the labor demand, vocationalized secondary education is thought to be more adaptive to changing needs. McMahon et al. stress that the question is not between vocational and general education. For them, the two types of education are not substitutive, but complementary. The more important task is to figure out the "optimum degree of vocationalization of the curriculum (1992:181)"; the balance between practical skills and theories.

As was the case with the separate-track vocational education, the vocationalized secondary education quickly became the global trend. International and regional conferences hosted by various international organizations began advocating a vocationalized secondary education where previously they had advocated a separate-track vocational education. For example, Colin Power, the Deputy Director-General for Education for UNESCO, stated at the Second International Congress on Technical and Vocational Education held in 1999 in Seoul, Korea:

> UNESCO's activities ... should aim at including vocational subjects in general education curricula to facilitate the young generation to obtain generic technological knowledge and key pre-vocational skills

- making Technical and Vocational Education and Training (TVET) for all an integral part of national educational policy. (UNESCO Regional Office for Education in Africa, 1995:29)

However, there are several issues which vocationalized secondary education cannot solve and where it remains uncertain whether it has positive effect or not. First, vocationalization is as expensive as the separate-track vocational education. Facilities, equipment and materials necessary to teach vocational subjects sum up to be several times more than general subjects. The change in the way of providing vocational instruction has not made any difference in the costs. Second, it is doubtful if vocationalized secondary education is much more socially-just than the separate-track vocational education. So far, there have not been many studies on what is happening in the black box of secondary schools. Implicit tracking of students according to their backgrounds may happen. As students' and parents' perceptions haven't changed much, the socio-economic backgrounds of students will probably continue to affect student's choice of subjects. Psacharopoulos found from his study in Tanzania that students from the lower social class are more attracted to the technical and agricultural courses than students from the high-income families (1988:263). Traditional norms of gender-specific roles could affect students' decisions about the courses, too. In sum, equity in vocationalized secondary education cannot be guaranteed simply by changing the system. What is necessary to achieve equity is an holistic approach, taking into account not only the education system itself, but also wider social, economic, and political environment. There is still other question. Can formal education, however vocationalized it is, be flexible enough to meet the changing and diverse labor demands? Some scholars are skeptical about this (for example, McGrath and King 1999a and b; Honig, 1993; and Foster, 1966). As I have mentioned earlier, the share of the informal sector in African economies is large, and this sector is mostly neglected in the large-scale manpower forecast. As a result, formal vocational education, whether separate track or combined with general education, where the curriculum is designed based on the large-scale forecast of manpower needs, is likely not to meet the skill needs in the largest part of the economy. Even though vocationalized secondary education provides a wide range of practical subjects from which students can choose, flexibility at school level is limited, compared to the flaw in the large-scale assessment of labor demands. In addition, the needs of skill training in the informal sector are diverse. By its nature, enterprises in the informal sector are small- or micro-scale, and the work is influenced by the local socio-economic environment. Locality and diversity are the major characteristics of the informal sector and its labor demands.

Non-Formal Vocational Education: An Alternative

As early as 1966, Foster presented the insight that, in African countries, small-scale non-formal vocational training was more suitable to meet specific skill demands in diverse labor markets than formal education (Foster, 1966:154, 156). More recently, McGrath and King supported this idea of using non-formal training as a way to meet "different needs for different communities (1999b:216)". Given the diverse nature of skill demands in African labor markets, utilization of non-formal education centers can be a solution to the mismatch between vocational education and labor market. To implement such a solution, the following conditions need to be fulfilled: (1) close examination of local labor demands; (2) involvement of local entrepreneurs in the whole process, from planning, program design, and implementation, to evaluation; (3) coordination with traditional apprenticeships; and (4) development of a complementary relationship of non-formal skill training with formal vocational education. Although currently the employment in the informal sector depends much on apprenticeship and social relationship between the employer and employee, there is a felt need, among entrepreneurs, of upgrading the occupational skills to meet the changing economic environment (Fluitmen, 1992:5). By involving these entrepreneurs and including apprenticeship as part of the overall program, non-formal skill training will be highly relevant and responsive to local labor demands.

Last Thought

Formal education is suited to provide less specific, broader-based knowledge of each vocational subject, while non-formal training can be more responsive to specific skill demands. The formal education curriculum has to be universal such that a similar quality of education is provided in secondary schools throughout the country. On the other hand, skills needed in the labor market are diverse and changing. Under these conditions, it would be appropriate that formal secondary schools provide a minimum of practical education which can be applied in various contexts in addition to a general academic education. The coordination between formal secondary schools and non-formal training programs would most likely be the most difficult but necessary part of planning this type of program. Just as labor demands are diverse under different settings, the quality of services provided by non-formal education centers are not homogenous. Coordination with respect to non-formal education centers which have different curricula, administration, and levels of trainers will not be an easy task. The flip side of the rigidity and unresponsiveness of formal education is its relatively well-prepared staff and nationally standardized quality and content. Given all these conditions, although the recent trend is moving in that direction, one cannot easily conclude

that non-formal education centers should be the major providers of vocational education, and formal education should supplement them through coordination and technical support. Decisions about the appropriate ways of providing vocational education should be made based on a close examination of the local conditions.

Development assistance organizations like JICA have their own policies and guidelines for funding. In these organizations, vocational education tends to be considered and administered separately from other forms of education. However, from the analysis above, it is clear that vocational education cannot be considered as something apart from people's broader aspirations with respect to education in general, the role of schools in the society, and the political economic conditions of each country. Educational provision in sub-Sahara Africa depends heavily on foreign assistance. As I have mentioned, the trend in vocational education has always been made and promoted by international organizations. It does not necessarily mean that the African governments themselves do not have decisive roles. Even a casual glance at the different educational policies of African countries shows how individual governments attempt to adapt recommended prescriptions to the local context. At the same time, external influence and the concomitant financial power is enormous. For development assistance organizations, challenge is how best to negotiate between accountability to one's own funding policy and responsiveness to the reality in each country. The first step would be to look at the educational and vocational needs apart from the pre-fixed framework of projects. As stated at the opening, the purpose of this paper is to provide a landscape view of the values and justifications of different types of vocational education. The author hopes this will serve as a set of basic information when considering the direction of development assistance in this area.

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i Informal Sector: the labor of small firms and individuals, often with minimal resources; usuallyoperating in the "grey" areas with respect to legality; and employing a wide range of activities and services (definition by Honig, 1993:2). The other characteristics of labor activities in this sector are:
- relative ease of entry (less requirement of formal training and employment and based on personal relationship);
- reliance on indigenous resources; and
- dominance of family ownership of enterprise.

ii There are criticisms that the conventional rate of return analysis does not correctly easure the effectiveness of schooling. According to critics, "weak-willed acceptance by employers of the status of certificates from vocational [schools] (Honny, 1999:199)" causes the lower wages of graduates of vocational schools than their productivity. They argue

that, because of this wage bias, the rate of return analysis based on earnings of graduates is not accurate. (Verner, 1999; Honig, 1993:11)

iii Here again, Honig states that "the attempt to introduce agricultural work to the school environment in a number of African countries did little to stem the tide of urban migration. (Tanzania, Kenya, Rwanda, Upper Volta, Benin, Uganda, and Botswana all tried this out.)"

iv In the mid-1960s, the share of Bank loans for vocational education programs in developing countries was over 40 percent of total educational funding. By the late 1970s, vocational programs received over half of all fundings while general programs received only a third (Benavot, 1983:65).

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