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The RAIFET, a network for support and development of TVET in teacher training institutions in Africa

Pr. Jacques Ginestié
Aix-Marseille Université, EA 4671 ADEF, ENS de Lyon
32, rue Eugène Cas ; 13248, Marseille Cedex 4
jacques.ginestie@univ-amu.fr

Abstract
The countries’ development depends largely on the development and the effectiveness of their education systems, both to promote education for all (EFA) and technology and vocational education and training (TVET) for each of them. The situation is particularly difficult in sub-Saharan Africa (SSA) and it is very difficult for many countries to provide a school that offers all children the opportunity to attend school beyond some basics. The access to primary education is not guaranteed for all, and few of them have the opportunity to receive vocational training enabling them to obtain a recognized professional qualification. The lack of qualified and competent teachers is another manifestation of the problems. Many institutional actors, including UNESCO, help foster the development of educational policies to overcome these institutional, structural and functional weaknesses. The RAIFET was formed to make a modest contribution to this momentum by supporting the development and structuring of teacher training and education research in SSA. This paper presents some elements of understanding of the situation and the orientations of the network’s contribution to this dynamic.

Keywords
Technology education, Vocational training, Education for all, Development, Sub-Saharan Africa, Educational network

Introduction
The adoption by UNO of the Millennium Development Goals (MDGs) and by UNESCO of the Education for all goals (EFA) mark an important turning point in the elaboration of a common initiative who take a great importance in Africa, specifically in sub-Saharan Africa (SSA). This policy aims to improve the lives of all people by eradicating poverty and misery in the world. The means to achieve focus largely on education becomes an end in itself: to reduce illiteracy, provide access to basic school for all, promote equity of opportunity. Through education, other objectives are targeted, such as promoting the fight against poverty, gender equality, sustainable development or partnerships for development. In Sub-Saharan Africa (SSA), despite significant progress, the situation in the late 1990s is particularly contrasted from one country to another but also internally to each of them. Several indicators show that the problems of schooling, illiteracy, gender, social, cultural or ethnic discriminations are recurrent and strain widely throughout the countries’ development opportunity. Maintaining an entire segment of the population in a state of under-education in most countries forgo development capabilities that should represent a young and dynamic population.

Beyond these general objectives concerning general education, the issue of access to a professional qualification is posed. Indeed, how to think about development only in terms of general education? We see the importance of basic education for all and discrimination mentioned above are scourges which does not concern the countries of SSA. However, this basic education has little social value if it is not accompanied by a possibility of social integration. Have a professional qualification to practice a profession that allows to meet his own needs and those of his family, is essential to the success of this social integration.
Significantly, TVET is situated in a broader framework of human resource development (UNESCO, 1999) that includes the offer as well as the interaction between supply and demand (Rwehera, 2004). This offer includes various levels and fields of education and training systems of formal and non-formal, including TVET. It also includes labour supplements from external sources, including migrant workers. In fact, in the late 90s, when UNO and UNESCO formulated their global aims, TVET appears, on the one hand, firmly rooted in the ideals and objectives of education and on the other hand, generally imbued with the labour market requirements and standards in force in the world (Atchoarena & Caillods, 1999).

The school enrolment issue in a country based in part on school goals (UNESCO, 2000). The link between education for all and vocational training for each one is particular in SSA, especially where the very existence of education for all remains a goal. Under these conditions, TVET often appears as a luxury out of reach that is overlooked and sent discreetly to the business world, ordered to take charge of themselves training their employees and prospective employees. But, with informal sectors that often occupy nearly 80% of the economy of a country, this training is reduced to companionship mainly based on reproduction by imitation of the traditional gestures of the profession (Sindzingre, 2006). The institutionalization of TVET in organizations designed and planned structures and this is not an easy task in itself (Ginestié, Huot-Marchand, & Delahaies, 2012). These difficulties for financing TVET organizations and related to the structuring of TVET courses are amplified in SSA by the chronic deficit of resources needed to conduct analyses of job requirements and qualifications (R. Reinikka & Svensson, 2001).

Many actors are involved in this support to development; this article aims to present an initiative driven there some fifteen years to promote the training of teachers, researchers and managers in the areas of technology and vocational education and training (TVET) in Africa. We formed an African network of technology education teacher training institutions (Réseau Africain des Institutions de Formation de Formateurs d’Éducation Technologique: RAIFFET) with a mission to get closer and support the structuration of these institutions; the focus is put on the relationship between teacher training and educational research.

**The context of TVET in SSA**

The first weakness at the end of the nineties was a poor and unequal schooling. The great majority of countries were widely under the standards of the millennium goals, with a great diversity of situations. About 40% of kids (38 millions) did not schooled. The schooling rate was about 12% for pre-school education and 57% for primary school (Banque mondiale, 2010). It was about 24% for secondary school, 4% for higher education and 5% for TVET. The enrolment of girls is a recurrent problem in many countries. The illiteracy rate for women is almost always much higher than that of men. Similarly, access to higher education or TVET is largely reserved for men. The achievement of priorities supposes real political engagement and an adequate use of the financial means.

With 44% of young people under 14 years of age (approximately 300 million school-age children), the population in SSA is very rural and rose 2.65% per year. Urban growth is twice as important as rural progression, also reflecting a strong rural exodus. Approximately 58% of the population lives below the poverty line on less than a euro per day. If 70% of the population over 15 years of working, there are significant differences between genders and jobs are mainly agricultural (UNO, 2011).

During the first decade of the 21e century, we observe a big increase of the population, mainly in the cities (about 41%). If we observe also a significant amelioration of the health, there is not significant progress in education; 72% of young are illiterate. The most significant progresses in some countries are mainly related to the abandonment of school fees. Unfortunately, this loss of resources for schools has not always resulted in increased funding from the state. This very often leads to a deterioration of conditions in schools with
overcrowded classes, a chronic lack of the most basic teaching materials (pens, copybooks, school books...), and even the lack of classrooms, tables, or chairs.

The development in SSA is too often plagued by corruption (R. Reinikka & Svensson, 2005). These are not just resources that are lost; more discreet forms of corruption undermine the effectiveness of educational systems (R. Reinikka & Svensson, 2006). The inadequacy or absence of reliable information systems (R. Reinikka & Svensson, 2011) about schooling, quality, or effectiveness of education, impacts directly the management of educational systems, leaving the door open for embezzlements and this at all levels, from ministries to teachers themselves (Ritva Reinikka & Smith, 2011). For example, many cases of fraud to examinations or to assessments are often mentioned in many countries; in some, one uses the term of sexually transmitted averages.

Qualitative studies in SSA are not many but they retell all the bad quality of teaching and the low level of students. Learn remains the ultimate goal of any school, whether basic skills of primary school or knowledge and skills acquired in TVET. Some countries have coped with the mass education while ensuring an educational level if not higher, at least the same. The huge disparities qualitatively emphasize the carelessness in the management of education. Few African countries participate in international surveys, which makes comparisons difficult. Despite this, the few data available (e.g. TIMSS1) are an important benchmark for evaluating the performance of African education systems; they point an extremely low level in mathematics and science (UNESCO, 2011). Few countries in SSA have the resources to support the curriculum structuring. It is not uncommon to have training programs for which the curriculum, structure and equipment were imported and appear completely inappropriate to the local context.

Teacher shortages manifested in general terms and in a particularly dramatic for some specific areas. For example, reaching a ratio of 25 students per class, within a reasonable time, supposed to recruit and train a huge number of teachers (about 4 million for EFA). Concerning TVET, SSA countries need to recruit and train one million teachers for ameliorating the very poor per pupil teacher ratio. The issue of teacher recruitment is both quantitative and qualitative (Ginestié, Balonzi, & Kohowalla, 2006). The proportion of unqualified teachers in sub-Saharan Africa is particularly critical. In addition, teachers in fragile societies work in precarious conditions; there is little means to pay them, so the job is not attractive for newly qualified graduates (Bekale Nze & Ginestié, 2011, 2012; Ginestie & Bekale Nze, 2014). To cope with the shortage of teachers, many countries rely heavily on temporary contracts for the recruitment of incompetent personnel and without training (Ginestié, 2012). In fact, the prestige of the profession is diminished and it is unfair to make them bear the responsibility for poor results of their students while the typical problem is the social status of the teaching profession, level of qualification, training, salary... (Ginestie & Bekale Nze, 2014)

The analysis of the evolution of indicators related to schooling and functioning of education systems is particularly helpful for understanding trends in SSA, during these last 15 years. The Dakar Forum (UNESCO-BREDA & WGECD-ADEA, 2010), for example, led to several important changes: i) the inclusion of EFA in the overall development of the education sector is itself an element of national strategy for growth and reduction of poverty; ii) it sparked strong international mobilization for education with a stated priority for Africa both in terms of official development assistance in cross-sectorial and budgetary choices of countries. However, despite this mobilization, the resources provided to countries are under the promises and show signs of slowing, specifically since the 2008’s crisis. Enrolment rates steady progress but these rates are more favourable for boys than for girls. In the space of ten years, the number of children increased from 85 million to over 133 million. School conditions have, however overall deteriorated. The secondary school enrolment rates have also increased significantly with over 16 million new entrants. Enrolment in TVET students has more than doubled, from just over 1 million to over 2 million. The progress of TVET is obvious but not enough effective to make a

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1 TIMSS: Third International Mathematics and Science Study
real impact on the lives of disadvantaged children. The disparities between countries remain, but are less important.

The emphasis on EFA in part overshadowed a deep reflection on secondary schooling. The question that arises is that of the after primary education of these children: should they continue their education in general or technical secondary education? If the primary-secondary-university continuity is obviously logic, the fact remains: (i) that a little part of students attend school after primary school, (ii) that TVET remains, in spite of important quantitative progress, a minority in post-primary extensions, (iii) that it is still largely structured around training for jobs in the formal sector while the informal sector is widely ignored, and (iv) that the reduction of education for all only to general knowledge, does not allow countries to engage in a sustainable development processes of their social, economic environments and, ultimately, political and cultural.

The informal sector represents, in some countries, up to 80% of economic activity. It is a major part in the creation of jobs and the production of wealth in these countries. Many young people will have jobs in this informal economy, often in appalling social and professional conditions. Generally underpaid, these jobs are largely discredited, especially regarding the required qualifications. The recognition of qualifications remains a major challenge that requires their integration into a system of vocational training. Some experiments, still too few, try to link the development of training, recognition of qualifications, and structuring the informal sector (Walther, 2006a, 2006b, 2009; Walther & Tamoifo, 2009).

The traced prospects put once again highlight the need for a comprehensive approach that promotes the idea that access to a professional qualification is first and foremost the key to getting a stable and gainful employment. Thus, it is necessary to improve the poor general opinion about TVET. To do this, it is proposed that education policies take into account the national context and set up a control designed to improve equitable access to TVET (Ginestié, 2014). The creation of RAIFFET aims to make a modest contribution to this development effort and structuring through the development of teachers and trainers training.

**Structuring a net for Technology Education and Vocational Training development**

The African Network of institutions of Training of Trainers for technological education was established in 2002. It brings together initially Francophone African countries, in the sub-Saharan area as well as North Africa. At its constitution, RAIFFET relied on Colleges of Education Higher Technical Education (ENSET) legacies of French colonization, which are present in almost all francophone African countries. These institutions have all evolved since independence but they still remain imbued with the French tradition of planning and structuring training. These are all good examples of a concept of vocational training thought for a rational organization of industrial development. Teacher training is organized in a general pattern that corresponds to a conventional structure of the industry and the economy. These organizations, rather from the years 70, are poorly suited to social, cultural, economic and political of 21st century. The RAIFFET answers this concern to adapt teacher training to the issues and challenges of this new century and to include the training of these teachers in more modern outlooks, more appropriate to the real African societies. To do this, the renovation of these training institutions implies redefining their missions and engaging them in a quality and relevance improvement process of their organizations.

A few simple ideas chaired the network constitution: i) improving the quality of TVET is based on improving the quality of training for teachers or trainers; ii) the contextualization of training based on the development and structuring of educational research conducted by local teams, integrated in partner institutions; iii) the development dynamics based on the organization of an African scientific community with its own structures for exchanges and scientific debates; iv) this process must be accompanied to allow it to reach the highest international scientific level. Obviously, the situation is very different from one partner to another. Some already have education research laboratories and are engaged in this process of joint research training,
others do not. In all cases, virtually all confuse education research with application of imported educational devices such as the competency approach or project approach; their models are often very old and all the time unsuited to the country's educational conditions. Many of these institutions are leaving, more or less explicitly, the low social prestige of teacher training for those better regarded of engineers or executives. Several axes organize network activity.

**International conferences**

The establishment of an African scientific community is organized through international conferences. To date, four conferences were organized. The central theme is based on the joint of technology education and vocational training. When the network was launched, this link does not self-evident, and training fell very often in separate organizations of general education. The RAIFFET was one of the first promoters of this integrated and comprehensive approach: indeed, how can access to a professional qualification for everyone regardless of education for all, especially for scientific and technological education. Since its creation, the network was positioned in a clear way, for a radically different conception of what was traditionally practiced in Africa, but also in many countries of the Francophone sphere.

The first conference was held in 2005 in Libreville (Gabon) on the theme "Technology Education, Vocational Training and Sustainable Development". It brought together seventy-seven participants from eleven different countries, including eight African countries. Sixty papers were presented and gathered in the conference proceedings (Bekale Nze, Ginestié, Hostein, & Mouity, 2006).

The second conference was held in 2008 in Hammamet (Tunisia) on the theme "Technology Education, Vocational Training and fight against poverty". It brought together eighty-four participants from seventeen different countries, including fifteen African countries. Sixty-three papers were presented and gathered in the conference proceedings (Bouras, Bekale Nze, Ginestié, & Hostein, 2008). At this conference, we note an increase of the African countries representation.

The third conference was held in 2011 in Saly Portudal (Senegal) on the theme "Technology Education, Vocational Training and equal opportunities". It brought together fifty-six participants from fourteen different countries, including twelve African countries. Twenty-seven papers were presented and gathered in the conference proceedings (Wade, Ginestié, Diagne, & Bekale Nze, 2011). These conference was initially placed in Ivory Coast, but due to political events and big troubles, we decided to move it in Senegal, very shortly before the date; it was the main reason of the few participants.

The fourth conference was held in 2014 in Marrakech (Morocco) on the theme "Technology Education, Vocational Training and teacher training". It brought together eighty-nine participants from eighteen different countries, including fifteen African countries. Sixty-four papers were presented and will gather in the conference proceedings (proceedings are under publication).

The next conference, the fifth, will be held in 2014-2016 in Douala (Cameroon). The theme is not defined at this moment and we expect a large opening of this conference on English African countries.

The organization of these conferences assume to facilitate the movement of African participants. The costs incurred by travel and accommodations are beyond the reach of most of them. The main difficulty is of course to ensure sufficient revenue beyond the individual contributions. The choice made is that the contribution of each African participant is minimal - 400 euros for the last conference - and that the organization supports the organisation, airfare, and accommodation. The cost for organising a conference is about € 100 000.
**Mobility of researchers, teachers and executives**

The life of the network, outside of conferences, develops in the organization of the mobility of researchers, teachers and managers, in the context of intra and extra African exchanges.

The RAIIFFET organise also some regional seminars – in North Africa, West Africa, and Equatorial Africa – around themes like structuration of research units in education, development skills for promoting quality in education, etc. These seminars aim to federate initiatives of local exchanges between closer countries. They impulse mobility between different partners and they give opportunity to the emergence of common projects.

It is in this framework that consists UNESCO Chair "scientific and technological education and teacher training" in partnership with the Ecole Supérieure du Professorat et de l'Education of Aix-Marseille University and the Ecole Normale Supérieure de l'Enseignement Technique of the University Cheikh Anta Diop of Dakar. This academic chair is the heart of the creation of a UNITWIN network that combines ENSET of Rabat (Morocco), the University of Tunis, ENSET Koudougou (Burkina Faso), ENSET Douala (Cameroon) the University of Libreville (Gabon) and the University of Lubumbashi (Democratic Republic of Congo). The aim is to thus form a network of excellence as a support for the promotion and development of research and training in the areas of TVET and EFA. This project is largely supported by UNESCO, the Agence Universitaire de la Francophonie (AUF) and the African Development Bank (ADB).

Currently, most of mobility is financed by the European Erasmus Mundus program. These are eighty-four master students, PhD students fourteen and twenty-six faculty members or executives who benefit from these funds. Regarding the masters, students take lessons for three semester in a European university and finalize their diploma during the last semester in one of the African partner institutions. Doctoral theses are organized in co-supervision between a European laboratory and a laboratory of one of the African partner institutions. Regarding academics and executives, it is more specific mobility, in shorter time, and aimed to developing contacts between the partners. The overall project budget is € 2.8 million.

Beyond this program funded by the European Union, the different mobility organizations led to the defence of twelve doctoral theses and numerous periods of study for some master's students. These programs have a great success and they help training teachers-researchers occupying more and more important functions in their home institutions and also in the organization of education systems of their countries.

**Financial resources and network structure**

The main concern is of course to find the financial resources for these projects. Funding comes in part from major international organizations. UNESCO assures RAIIFFET support since its start. The AUF also makes an important contribution and a timelier manner ADB supports some of the actions taken. Regarding mobility, the funding provided by the EU cannot be compared with other investments; they helped launch a large-scale plan, and have contributed to the financing of the 4th conference of Marrakech. Obtaining such funding has educational value for African partners who are discovering the setting up and monitoring of international projects.

Another part of the funding comes RAIIFFET institutions themselves, usually as part of their normal operation or in the financing of local authorities. The excellent reputation of the network proves to be an excellent business-card for local support. The bilateral cooperation agreements between countries also support a part of the network activities.

All these funds are still fragile; since the 2008 crisis, network resources have largely been cut, if we excluded the European funding. To overcome these risks of financial deficiencies, the RAIIFFET is in the process of developing and implementing an original organization. Considering the potential of expertise in all institutions, and specialized in science and technology, with recognized specialists, the network has developed a set of business expertise and professional training programs for large companies are active in Africa. This is to provide
high-level training in the context of a fairly simple market. The price of these courses is those usually practiced by private companies and therefore quite high. The argument for these large companies for choosing the RAIFET as the operator, is not the price’s argument, but the argument of an investment in the development of TVET in Africa. This argument is convincing enough for these companies for having recourse to the network. For trainers, they receive a fairly substantial compensation given local pay levels. The RAIFET finds, meanwhile, a large and regular source of funding for its activities. This dynamic favours more relationships between network partner institutions and fabric of large companies located there.

A steering committee composed of the President and three Vice-Presidents - one for each region of Africa - organizes and manages the network. A scientific council led by a board of five people - all women, representing different regions of Africa - is responsible for guiding the scientific policy and facilitate the scientific life of the network. An operational strategic group is responsible for the finding of financial resources for the network activities; it is this group which notably organizes the training activities with major African businesses.

References


