



AMERICAN JOURNAL OF MULTIDISCIPLINARY RESEARCH AND INNOVATION (AJMRI)

ISSN: 2158-8155 (ONLINE), 2832-4854 (PRINT)

VOLUME 2 ISSUE 1 (2023)



PUBLISHED BY
E-PALLI PUBLISHERS, DELAWARE, USA

Use of ICT to Promote Literacy in Sub-Saharan Africa

Souad Abdelwahed Selmi^{1*}

Article Information

Received: January 07, 2023

Accepted: January 10, 2023

Published: January 24, 2023

Keywords

Ict, Literacy, Learning, Education

ABSTRACT

Literacy, accessibility, technology and digital education are central concerns of this article. The iconic theme is the use of ICT to promote literacy in the region of Sub-Saharan Africa. In fact, today more than ever, literacy remains a major challenge for such region. In view of the social environment and economic crisis, the future of the strategies of literacy dependent, among other things, on Sub-Saharan of significant investments in innovation and ICT, in order to consolidate the integration of programs literacy in the recent approaches based on ICT. Indeed, the development of mobile technology, the convergence of all media to digital media and the rapid development of the Internet have changed the portrait of the sector of literacy on Africa. An important point to remember is that this region faces an illiteracy to double facet, digital illiteracy at the same time classic illiteracy. However, the efficiency of the integration of ICT in literacy does not depend so much on technological advances but rather on the effective implementation of these programs to improve the Sub-Saharan populations' daily lives. In fact, this study highlights good practices and also a set of constraints and challenges that continue to hamper the creation, implementation of literacy programs and activities, notably through the use of ICT in the Sub-Saharan African countries. At the same time, this study allows to locate a number of challenges and opportunities for the ICT and literacy in the region.

INTRODUCTION

Technological evolution is faster than ever (World Economic Forum, 2015). Whether we are in favor or not, ICT have indeed become one of the pillars of our societies. This reality is summarized in this phrase become today ritual: everyone must know computing because computers are everywhere! It is also the generalization of a slogan of type Information Technology is a tool for all within the reach of all (Ginestié, 1999).

They are increasingly powerful, increasingly intelligent and their use becomes more and more simple. Our daily life, our hobbies, our profession, our relationships are influenced by these technologies. Is this a technological fate written for humanity? Exclude these ICT, is to be, according to some, illiterate and not to integrate into the current world (Arcouet, 1996, p.26). Going hand in hand with such fashionable discourse, ICT are presented, under the guise of educational innovation, as a useful language facilitating access to information and as the privileged medium of knowledge for future citizens. In the same vein, the literacy sub-sector didn't stay away from this technological reality. The crucial point here is that these tools arouse enthusiasm, but also generate fear and anxiety (Leclerc, 2003; Peraya at al, 2002; Tardif and Mukamurera, 1999). That is, our reality today, focused on information and communication, generates at the same time new means of literacy, new modes of access to knowledge and at the same time new educational needs and challenges (Rocheleau and Basque, 1998). Such reality deserves careful study and requires operational and contextual reflection.

The alliance of ICT with literacy, especially in Africa

context, is not new, but the development of mobile technology, the convergence of all media to digital media and the rapid development of the Internet have significantly altered the profile of the literacy sector. It is in this context that the initiative is being taken to study the question of the use of ICT to promote literacy in the region of the Sub-Saharan Africa. Really, the rapid development of the Internet has changed the portrait of the sub-sector of literacy. Indeed, in agreement with Tschoumy (1994), it is not ICT that are introduced in this area, but it is the sector of literacy that bathes in a communication environment, technology and digital. In fact, this study is a way to learn more about this new face of literacy anchored in the Sub-Saharan African environment and to share with the reader the lessons to be learned. This work will meet the following objectives: a) identify trends in the use of ICT to promote literacy in the Sub-Saharan Africa and ICT policies and policies for literacy; b) determine main constraints and challenges of implementing literacy programs using ICT; and c) Finally, this research will end with a summary main highlights, recommendations and suggestion of ideas for future research projects. These points are tied together and constitute a lever and support points to understand the dynamics of the integration of ICT in the field of literacy. The emblematic reflection of this research work is to observe the uses of ICT. Using Wallet's expression (2001), the observation of uses stands out in my eyes as the most effective entry (p.42). The objective is to highlight a number of practices in the use of ICT in the field of literacy which have proved their worth in the Sub-Saharan Africa. This is a way to learn more about this new

¹ University of Tunis El Manar, Tunisia

* Corresponding author's e-mail: s.abdelwahed1@gmail.com

face of literacy and to share the lessons with the reader. This being the case, ICT, as a technical object, is part of this research as something inscribed in a use, developed to be inscribed in finalized activities (Rabardel, 1995 cited in Bélisle et al., 2002, p. 60). This reflection is part of a larger and more complex issue of the socialization of technical objects. Proulx (1994) confirms this choice by pointing out that observing the uses of what people actually do with these objects and these technical devices can constitute an interesting methodological entry for understanding the action of technology in society. Belisle et al. (2002) adds that studies of the use of ICT in education and training have especially developed in recent years, without exhausting the questions that give rise to them. There is now a significant demand for such studies on the uses of ICT. To this end, Perriault (1989) underlines that in the years to come, it will be necessary to deepen the studies on the uses of communication machines (p.232).

Indeed, what deserves reflection is the implementation or use of ICT by literacy programs. In agreement with Bélisle et al. (2002), what arouses interest are the complex visible and invisible relationships that actors have with these technical, social and cultural devices that are ICT. In this vein, this study fits into this emerging field of research. Thus, specific attention has been paid here to the pragmatic dimension of uses by reinscribing them in the contexts of literacy in the Sub-Saharan Africa. Emphasis has been placed on the activity of the ICT user to consider what makes sense to them, why they develop these uses modes.

Concept Note: literacy, lifelong learning

Terms such as literacies, literacy practices, basic literacy, initial literacy or Advanced, adult education and post-literacy are various and sometimes confused meanings depending on the social, cultural and political context; the literate environment and literate society. It is a plural and non-unique concept that reflects the multidimensional, complex and dynamic literacy and emphasizes the urgent need to work beyond the traditional dichotomy between literate and illiterate (Helly at Al, 2015; UNESCO, 2006; UNESCO, 2015). In fact, different approaches have emerged, essentially:

- a. literacy as skills, specifically the ability to read, write and count, sometimes called cognitive skills or range of cognitive processes;
- b. literacy as it is applied, practical, and put in a situation, in other words as a set of tasks that require writes, as in the case of functional, family literacy or in the workplace;
- c. literacy as a set of social and cultural practices inseparable contexts school, socio-economic, political, community and language;
- d. literacy as a capability, reflected in the ability of a person to use the skills to achieve its goals and its communication objectives; and,
- e. literacy as a tool for critical thinking and action for social change, also called critical literacy or processing

(Helly and al., 2015, p.22).

In a same order of this ideas, the Institute of UNESCO for lifelong learning (UIL) has published, in August 2013, its second global report on learning and education (GRALE II) adults with literacy as a process continuous, accomplished in situations most various pave the way for an informal, non-formal or formal apprenticeship, which allow learners to achieve different (and differentiable) levels of skills in reading, writing and arithmetic. The report also pointed out that learning throughout life and in all aspects of life is the most promising way to meet the challenge of literacy (Bonnecase and Brachet, 2013). Such a proposal to conclude that learning and the use of literacy skills is a contextualized, and continuous process which takes place both within the educational frameworks and outside them, throughout life. This goes in the direction of right to education, as it is enshrined in the Universal Declaration of the human rights, which includes the acquisition of skills in reading / writing, math and other areas of base that will serve as a base to lifelong learning, a central principle of the international agenda for the post-2015 education (UNESCO, 2014c, p.7).

It's a passage from the notion of literacy as a simple process of acquisition of reading, writing, language and computation, to a broader conception of basic skills, including the ability to use ICT. It is, according to Chitra Lekha Yadav, a powerful vehicle that gives power to the people and allows them to acquire life and entrepreneurship skills to meet the daily challenges and maximize opportunities for sustainable development (UNESCO, 2015 b, p.136). Vision, which takes into account changes economic, political and social progress of information and communication technologies, and recent, admits the existence of many practices' literacy, registered in different cultural processes, personal circumstances and collective structures (UNESCO, 2004, p.6). Is to say, we're now interested in using these skills for socio-economic development as well as civic awareness and critical thinking, personal and social development (UNESCO, 2006b data bases, p.155). This happening, Mauch (2014), by a growing recognition of the interaction between the modes of formal, formal, and informal learning. In addition, the creation of contexts and processes that are attractive and responsive to the needs of adults as active citizens (quoted in UNESCO, 2014d, p.10).

This orientation reflects a crucial dimension to the context and quality of literate environments that influence the implementation of literacy that understanding of literacy (UNESCO, 2006b. This point, leads us to Sub-Saharan Africa, object of the present study, where literacy is, also, an area so diverse and multisectoral. The key point to remember in this regard is that this region faces an illiteracy to double facet, namely digital illiteracy at the same time classic illiteracy. This is a new challenge of illiteracy in the Sub-Saharan Africa. In addition, the fluidity, the speed of developments in ICT and their very innovative character challenge on the scale of the

challenge of digital literacy.

In fact, literacy in Sub-Saharan Africa programs cover, commonly, five basic tracks, namely:

a. Basic literacy for adults, particularly those who have not had access to formal education, to be able to understand the problems of their environment immediate. They sensitize them to their rights and their duties as citizens and individuals. Kleis (1974) note that the participants in these types of training are able to contribute more effectively to the social and economic progress of their community. Basic literacy provides a platform that allows adult learners to acquire the minimum required knowledge and skills to have a decent standard of living.

b. Functional literacy focused on the socio-professional occupations of learners with purpose sought, the transformation of the lives of those to whom training is addressed. So, a good orientation of functional literacy programs is important to the development of communities. This orientation is the result of a design of the training in terms of solving the problems of communities (Cisse, 2001). Functional literacy training combines theoretical knowledge and practical applications. Indeed, the literate adult will have a skill of reading, writing, simple arithmetic as well as the basic job skills directly related to their professional needs. As a result, the teaching content are varied. They range from farm management commercial management. People learn a bricklaying, carpentry and joinery, but also gardening (In'utu Sumbwa and Weluzani Chakanika, 2013).

c. The post-literacy is defined as any form of uses of literacy achievements. It is an integral part of the phase of initial literacy (MEP/A/PLN/EC, 2015). This in the sense that literacy can be truly effective if it is part of broader information and training process continues. This requires the implementation of activities of post-literacy as a set of measures to allow the neoalphabet to exercise capacity and to increase knowledge and to engage with new acquisitions, but especially learning to learn and make decisions in a continuous process of development and greater control over his environment (UNESCO, 1977, p.4 cited in Cisse, 2001). Together with the literacy phase, it forms an inseparable whole. It was during the post-literacy that materialize the results of functional literacy and knowledge are consolidating and enriching. For the implementation of appropriate strategies for post-literacy, it is necessary to: a) plan the content of the training based on the concerns of the neoalphabetes; b) select the appropriate communication systems (traditional and modern); and c) resorting to different types of structures of learning adapted (libraries, mobile exhibitions, collective listening groups, etc.) for disseminating the knowledge and the skills required (Cisse, 2001).

d. Literacy, a means to development. However, many literacy programs implemented in the Sub-Saharan Africa region are supported as poverty reduction mechanisms. Indeed, some interventions recorded in this work are generally part of Strategy Documents for the Poverty

Reduction (PRSP), strategic direction and planning tools adopted by most of the countries of the Sub-Saharan Africa targeted by the study. The goal of these programs is to develop individual empowerment and ownership among poor populations. In this context, empowerment is defined as the increase in assets and the capacity of people living in poverty, in order to allow them to better participate, negotiate, influence, control and empower the institutions that have an impact on their lives (Narayan, 2004, p.18 cited in Baba-Moussa, and al., 2014).

e. Technology and digital literacy. In addition to read and write, it is essential today to have a minimum of basic skills on the computer tool, prior knowledge of ICT. However, technological illiteracy concerns the process of initiation to the knowledge of basic office automation and ICT, including the Internet, to enable illiterate adults or poorly literate to use the tool computer science, to understand ICT and control electronic communications, by fostering their relationship to the digital media environment. Programs and practices brought about by this approach are intended to improve the skills of basic through the technology literacy and add the development of ICT skills to democratize access to information.

METHODOLOGY

Supported by a descriptive, analytical and critical approach, this research has addressed the issue of the use of ICT to promote literacy. Based on a number of examples of literacy practices and initiatives, this work concerned the Sub-Saharan Africa region. To carry out this study, the data collection was structured around three main stages, namely:

a. Documentary research: the documentary research first led to an analysis of the quality of the existing documents with a view to selecting the most relevant and reliable for the study. Generally, the documentary review covers: previous studies, economic and social development plans in relation to policies, action strategies, initiatives and programs for literacy in general and the use of ICT for education. literacy in particular;

b. Presentation of statistical data; and,

c. Remote interviews: the documentary research was reinforced by a series of interviews in the form of a dialogue via online systems (email or Skype). These e-interviews were conducted with a wide range of stakeholders nationally, regionally and internationally - ministries responsible for Education, Training, Literacy and Technology and Innovation, as well as resource persons belonging to other governmental or non-governmental organizations, civil society and development partners involved in initiatives around ICT and literacy. The objective here is to:

a. interact with significant people and those with initiatives;

b. obtain additional working papers and the review of literacy programs using ICT;

c. better understand the political documents of the countries;

d. identify the needs and difficulties in the areas concerned by the study; and,

e. verify, validate and update the data collected during the documentary research.

The review of experiences and literacy initiatives included in this study resulted in at least three criteria: the availability of sufficient documentation, the novelty and relevance of the program to the emblematic question of this study. These programs were interpreted by the researcher according to the specific contexts in which they fit. They cover three main thematic areas, namely: ICT skills, illiteracy and the development issue. In addition, the identification of literacy programs using ICT constitutes the guideline of the fourth chapter relating to the presentation of different technical and financial partners.

Trends in the use of ICT to promote literacy in Sub-Saharan African countries

The policy background for literacy, digitization and education in the 21st century may change from one Sub-Saharan African country to another, but the extent and the environment of general orientations seem to converge on much points. This is the subject of the following sections, structured around the major trends characterizing the use of ICT to promote literacy in Sub-Saharan Africa.

Modes of integration and appropriation of ICT

Internet connection forms

Despite the many challenges ahead, Africa is today the continent with record Internet performance worldwide. In fact, between 2000 and 2010, the penetration rate of the African continent increased by more than 20, going from 0.5% to 10.8% (Sy, 2012). There are two types of Internet connection in the region, namely:

a. The wired connection which combines on the one hand the wired switched Internet connection including the analog connection and the connection with the Integrated Services Digital Network (ISDN). The latter is offered in all Sub-Saharan African countries. Dial-up Internet connection is billed as a local or long-distance telephone call. This billing method penalizes users from provincial towns. As the Internet node is often installed in the capital, all users who call the Internet server outside the local communication area of the capital are billed for long distance calls. This Internet connection is therefore more expensive for users in this situation. On the other hand, there is the unswitched Internet connection with the leased line (leased line in some countries) and ADSL (Asymmetric digital subscriber line). ADSL is provided in the majority of Sub-Saharan African countries. However, its expansion is hampered by the weakness of the subscriber base in the various countries. In addition, the absence of regulations on the unbundling of the local loop or the absence of its effective implementation also constitutes a brake on the rapid development of ADSL in the region.

b. Wireless or radio connections, made from four technologies:

a.1 Local radio loop (BLR) used to serve localities or areas without wired telephone lines;

Special mobile group (GSM), mainly with GSM 3G;

b.1 Code Division Multiple Access (CDMA) adopted by many incumbent operators to make up for the delay in building the wired network; and

c.1 Worldwide interoperability for microwave access (WiMax) appeared in the sub-Saharan region in the mid-2000s.

In general, the Internet connection in the African context necessarily evolves towards radio because of the weakness of telephone teledensity.

Digital divide looks different

The digital divide in the Sub-Saharan Africa region has multiple dimensions that go beyond physical access to technological tools. This is the mobile divide due to problems with access to electricity, network coverage and income inequality. Let us take the case of certain areas of the Sub-Saharan Africa. One of the dimensions of the digital divide most often overlooked is the way the internet works (or doesn't) in the region. For example, for people in developed countries, blackouts are rather rare and total Internet disruption an even rarer occurrence. But in some Sub-Saharan African countries like Niger for example, blackouts, inadequate and unreliable connections, as well as the total lack of energy, especially in rural areas, are part of everyday life. It is this situation that most often puts people under the obligation to innovate and invent modes of appropriation (use of solar installations in rural clinics, batteries of motorcycles or cars, pedaling of bicycles for produce energy) that are not found elsewhere.

Here, it is less the exogenous standards of the technical object that are in question than an inadequate material and technological environment due to the absence of minimum conditions to operate the devices, thus placing the users in the obligation to manage. In addition, while mobiles are a tool for stimulating the development of grassroots communities, they are also a marker of inequality of opportunity. We learned from the analysis of the practices that technology alone does not solve social problems and illiteracy. ICT are often applied to improve the quality of development relationships and processes and thereby creates competitive advantages that could marginalize those who do not have access to it. It is the orientation and quality of the underlying development process that should condition the implementation of mobile technologies. The isolation and marginalization of populations are social problems and it is not technology alone that can solve them. Mobile phones are only tools and they can only be a complement in social organization, not a central element (Chéneau-Loquay, 2010).

Africa, continent of innovation: mobile telephony, m-Bank, m-Health

Internet connection in sub-Saharan Africa is undoubtedly moving towards mobile (Akue-Kpakpo, 2013; Ouédraogo,

2009; Ifri, 2012; Rennard, 2012). Indeed, the growth of mobile telephony has exceeded the most optimistic forecasts of operators. According to the ITU, this is proof of the validity of a competitive economy that still needs to be reinforced (Chéneau-Loquay, 2010). The number of subscribers to mobile telephony and other wireless broadband networks has increased significantly. The share of Internet browsing on mobile is the highest in the world (Valdés-Valdivieso and Penteriani, 2012). The use of the mobile phone is particular insofar as access has become democratized and now concerns all categories of the population, a majority of whom are low-income. According to figures from the World Association of Mobile Phone Operators (GSMA), the number of mobile broadband subscribers reached 30.3 million in 2011, representing a penetration rate of around 3.8% of the population, compared to barely 0.35% in 2007 (GSMA, 2011).

As a result, mobile telecommunications contribute to equity by allowing disadvantaged populations to access information which would be very difficult or impossible for them to obtain by relying on landlines which in most regions are not ready to be installed. Very low-income populations prioritize mobile phones, being fully convinced of its usefulness for their well-being. These populations, who are the targets of development projects and literacy programs, get involved themselves not only to access the telephone, but also to innovate by creating new functions and applications that are useful to them (Chéneau-Loquay, 2010). Indeed, the worlds of mobile telephony in Sub-Saharan Africa allow applications and services adapted and / or adaptable to meet the needs of users. These are innovative modes of appropriation that are proving their worth today. The following examples are mainly cited:

a. m-learning, the use of mobile technology in the service of education. This is a recent practice in the region, opening up new possibilities in the educational field. Given the shortage of books in many African schools, the digital tablet was quickly seen as a substitute for missing textbooks, spurred on by governments and international organizations. Indeed, this shortage affects almost all African countries (AFD, 2015).

b. m-payment, which is a benchmark on a global scale. This is the continent of the world where m-Payment works best (Ifri, 2012; Sy, 2012);

c. m-Health aimed at improving people's access to relevant information in the areas of health and living conditions. Thus, telecoms represent 2% of the health budget in Africa (Ifri, 2012). Issues such as HIV / AIDS treatment and prevention, improved maternal health care, appropriate immunizations for children, education and awareness are being stimulated by access to wireless technology, which in turn is tower, allows connectivity to healthcare systems and remote experts (Chéneau-Loquay, 2010); and,

d. m-Agriculture and m-Fishing allowing a rationalization of the sector at all levels. For example, in Senegal, the use

of the mobile telephone in the artisanal fishing sector represents an improvement in working conditions and practices: better management of traffic at sea with a limitation and more efficiency of movements, saving of time with faster transactions and greater security in such a dangerous profession (Chéneau-Loquay, 2010).

Thus, from a technical point of view, mobile applications in the region for development generally focus on the provision of services through short message services (SMS). From a user perspective, this predominance reflects the fact that the most common capabilities of the device and all SMS services are accessible from any device. From the point of view of information providers, SMS is the most easily accessible technology for all entities that want to transmit information through mobile devices. Setting up an SMS platform is quick, economical and fairly straightforward. However, certain economic and cultural constraints arise from these wide eases of design and use. The text also has the disadvantage of being an obstacle for completely illiterate users who may be unable to use it fully. Solutions with information delivered by voice message can be very useful for the illiterate population, but they are relatively expensive and still underdeveloped (Chéneau-Loquay, 2010).

The informal ICT sector, a dominant mode of operation

ICT constitute a major sector of recent informal growth in all cities of Sub-Saharan Africa. This informal ICT sector is a reality in the region. It can no longer be considered a sector on the fringes of the economy. It has established itself not only as the popular economy of the poor, but rather as a powerful overvalued economy in some African countries (Senegal) (Chéneau-Loquay, 2012). It is a sector with great potential, creator of jobs and wealth, which needs to be organized, structured, regulated and supported. It performs essential functions in employment, production, income distribution, meeting needs, and training and literacy for young people and adults.

Literacy through ICT and the media

The progress in integrating traditional and modern ICT into the literacy and management practices of literacy organizations in the Sub-Saharan Africa countries indicates that the vast majority of them have made the switch to informatics. The socio-economic and development specificities of these countries encourage them to take advantage of the advantages of technology and to use the various existing channels (Internet, mobile telephony and radio) to adapt the solution both to the area concerned (city, campaign) and the nature of the training (awareness raising, popularization or teaching). The objective is not to perpetuate one of the factors of exclusion of adults with low education or illiteracy, namely not learning to use ICT. In fact, like issues relating to health, education, environment, agriculture, human rights, etc., Sub-Saharan African adult learners, as development actors, are

interested in ICT, both in terms of their use as work and information dissemination tools and their impact on access and circulation of knowledge and know-how. Thus said, literacy programs make use of a variety of ICT and modes of communication, namely:

- a. technological equipment: computers, Internet, software, networks, mobile telephony, tablet, smartphone, geographic information system, satellite imagery, GPS, etc. ;
- b. media such as radio and television; and,
- c. traditional means of information and communication such as physical meetings, printed documents (newspapers, leaflets, magazines, brochures, etc.), notice boards, theater, etc.

This wide choice provides adults with the keys to motivation to learn, retention of learning and an enriched educational experience. The adoption of a particular technology involves a process of selection and decision-making on the appropriate technology, on the users and beneficiaries as well as on the type of communication and content. The main appropriate and sustainable modes of use of these tools and mechanisms for literacy programs in the Sub-Saharan Africa will be presented in the following sections.

Rural radio

The radio education system is particularly suited to African countries (UNESCO, 2014c, p.16). Literacy programs and initiatives show that broadcasting is easily accessible and affordable in Sub-Saharan region. It makes it possible to overcome geographical obstacles. By facilitating distance learning, reading and writing can be taught to people who live in remote areas. Indeed, a rural radio station is established by a community or on its behalf, equipped with an audio communication and information tool intended to promote and favor the application of social, economic and cultural values determined collectively and deemed useful for this community.

The use of the local language on the radio constitutes, for this one, a kind of reconciliation with the peasant layers. In this context, to motivate people, a literacy program is usually functional, to help them solve their daily problems, or in other words, to be of practical use to them. Thus, local radios provide services to the community and offer the possibility of extending the function of media education and literacy on subjects related to the development of the rural world (agriculture, health, nutrition, livestock, hygiene, etc. fishing, etc.). It has become a catalyst for social and cultural identity, a forum for expression, a tool for social mobilization, dialogue and consultation within communities and between development actors. The initial value of a community broadcasting project lies in the fact that it offers the public the care to participate in the development of the content, to control it and even more to the possibility of exchange. In sum, the major distinctive function of community radio is that it can help create a dynamic conducive to development. It is a pillar of local development.

Rural radio is still an interface for the introduction of ICT, which eventually increases the possible dissemination media, widens the audience likely to be reached and can therefore increase the influence of literacy projects or at least multiply its destinations and results. In this context, local radio has become one of the avenues to facilitate the accelerated penetration of ICT in rural areas of Sub-Saharan Africa and allow better development of sub-sectors such as education, health, literacy, etc. Indeed, as a means of communication, rural radio reduces distances and removes barriers to illiteracy, while allowing contact with the listener. These radios are reference points for community communication. As a result, these local broadcasting stations tend to gradually transform into what UNESCO calls Community Multimedia Centers (CMCs).

Television

Some literacy programs in the region use television as a tool to meet the education needs of the Sub-Saharan African zone. This medium combines words with images and allows movement and animation while diffusing sound. The definition of the content of audiovisual programs aimed at adults is determined according to the expectations and needs of the target populations, in particular those living in poorly literate landlocked areas and suffering from a lack of infrastructure and technological resources. In this case, the programs addressed to illiterate or semi-literate adults, via local television, are broadcast on a regular and ad hoc basis with regard to daily life. They contribute in particular to the promotion of literacy, practical learning and health and social awareness. This is the framework, for example, of the Multichoice Africa initiative supporting a group of educational channels, including National Geographic, Discovery Channel, History Channel and Mindset Learn by satellite broadcast in a number of African countries.

Audio cassettes, CD-ROM, DVD, VCD

Compared to broadcasting and television, audio cassettes, CD-ROMs, DVDs and VCDs generally have the advantage of being able to access literacy classes at the time and with the frequency of the learner's choice. In addition, these forms of ICT can be employed in the home, which helps overcome social, cultural, financial and logistical constraints that learners, especially women, may face in attending literacy classes in the areas rural and remote CD-ROMs offer in particular:

- a. a cost-effective medium making it possible to distribute content easily and at low cost;
- b. an interesting and entertaining resource for reading and writing lessons; and,
- c. a concentration of large volumes of information on a light and small medium.

Community telecentres

With the development of ICT, a large number of community telecentres have emerged as a common

practice in Sub-Saharan Africa countries, especially in rural areas. They are part of the service points for the implementation of literacy programs in rural areas. In addition, they support the strengthening of farmers' organizations. They are in most cases supported by development partners (e.g. UNESCO, ITU, CRDI). The integration of ICT into literacy program services is usually accomplished through the establishment of Technology-Based Community Learning Centers, Community Internet Access Centers and Multipurpose Community Telecentres. But other places are also involved: libraries, village schools, youth centers. Indeed, the fabric of telecentres is a social, economic and cultural asset. Through its role as a pole of attraction and community resource center, community telecentres allow, among other things:

- a. a possibility of regular two-way communication (call / reception) in rural communities (phone call, email);
- b. a training and learning framework for the use and mastery of ICT thanks to proximity and prices;
- c. the development and strengthening of community life by restoring a minimum of credibility to isolated disadvantaged neighborhoods and rural areas through ICT services such as the Internet which make the neighborhood a place of attraction;
- d. the appropriation and use of ICT by peasant populations as a means of social and economic promotion in line with the needs of the community;
- e. the generalization of public access of grassroots communities to real-time and low-cost services and business information through ICT; and,
- f. the contribution to the dissemination of the use of ICT through office automation training, Internet initiation, telephone use, etc.

Mobile technology

Referring to Kone Tago (2013), mobile technology is technology that can be moved around without stopping functioning. It is able to serve us everywhere and generally it is small in size, therefore easy to carry around and bring wherever we go. Mobile technology can play a very important role in the literacy process because it will help promote and popularize access to information and resources (p.4). Mobile learning is independent of the constraints of place, time, gender and, to some extent, money (Tual, 2013). In the same vein, the effectiveness of the use of mobile phones and cellular networks to promote literacy is recently endorsed, also, by the UNESCO study (2014b) *Reading in the Age of mobile*. The report shows that in countries with high rates of illiteracy and limited access to print, mobile technology is becoming more prevalent. People read books and stories through small screen devices. This increases the potential for mobile learning even in the most remote and extremely poor regions alongside other ICT such as broadcasting or television.

This reality applies fully to Sub-Saharan Africa countries, especially rural areas. The mobile phone, and in particular

SMS (short message service) technology, is a reading and writing medium available and used in rural areas. It has the advantage of being less demanding in terms of infrastructure, so that it is easily accessible. In addition, for new learners, regular use of dial pads and texting will reinforce their newly acquired knowledge of letters and numbers. In Niger, for example, it has been found that adult education programs are much more successful in strengthening participants' skills in literacy and numeracy when supplemented by pedagogical exercises using mobile phones (Aker et al., 2012 cited in UNESCO, 2015, p.150). The utilitarian nature of the cell phone for rural Africa has made it a popular innovation. Indeed, the introduction and development of these tools has introduced a new culture to the Sub-Saharan Africa region: the culture of Mobile Technology.

Internet

The Internet is another tool that can be harnessed to improve literacy programs. In comparison to old ICT such as television and broadcasting, the Internet is an interactive and dynamic space that offers digital content, accessible to active learners who can use it at their convenience. Internet access is facilitated by tablets and by the possibility of connecting via mobile networks (AFD, 2015). Online learning is one way to use the Internet to fight illiteracy. With discussion forums, email and social networking sites, the Internet strengthens the skills of adults who are illiterate in reading and writing.

Audiobooks

Due to a lack of resources, the publishing of books in the Sub-Saharan Africa region is reduced and existing works are not accessible to the majority. Added to this is the low literacy rate in the region, which explains in particular the trend towards popularization of the oral transmission of knowledge in the field of the implementation of literacy programs. Thus, it is observed the promotion of the audio book in the region taking into account the social realities, the experiences and the aspirations of the populations. This involves developing and recording audio books, translated into as many languages as possible, including local languages, on media such as audio cassettes, CDs or recordings on mobile phones or MP3s. They are talking books with electronic texts converted into spoken words. They are one of the tools for promoting literacy in the Sub-Saharan Africa region.

Open Educational Resources (OER)

Electronic books are electronic texts that are available on the Internet and on CD-ROMs. The development of the telecommunications sector in the Sub-Saharan Africa zone has allowed quick and easy access to digital books, sometimes despite the beneficiaries' lack of knowledge of the use of computers, thanks to the use of mobile phones for reading of digital books. Let us quote here the literacy initiative of the NGO Worldreader through the popularization of eBooks intended for young people in

rural areas. This will involve the free distribution of more than 390 eBooks, ensuring that they are easily accessible from a mobile phone, thanks to a dedicated application (Tual, 2013). It is within this framework that the UNESCO Paris Declaration (2012) on Open Educational Resources (OER) is also inscribed as a set of principles and guidelines for the development and use of educational resources free in education. Also, one of UNESCO's main lines of action, for the period 2014-2017, aims to support the OER movement and create conducive policy environments in this area (UNESCO, 2014a).

Literacy Approaches

Participatory approach

It emerges from this study that participatory approaches constitute an essential element of the education-training process of illiterate adults in the Sub-Saharan Africa region. These approaches favor the involvement of learners in the action. They are oriented towards participation, discussion, initiative and equality among participants. Such a participatory orientation, which characterizes literacy practices in Sub-Saharan Africa countries, can be explained, among others, by the following points:

- a. habits of community life of adult learners favor the practice of certain participatory approaches which are part of their culture;
- b. participatory approaches promote the appropriation of content and the sustainability of knowledge. This is important for education-training actions that lead to behavior changes (hygiene, preventive health measures, etc.);
- c. agreement of beneficiaries on the choices concerning them is fundamental and it is necessary to ensure that it is acquired. Indeed, the active participation of learners is one of the visible forms of this requirement; and,
- d. current philosophy in terms of economic management is based on valuing demand. In adult education and training, the offers are sometimes numerous and are made by many entities outside the learning public (for example, it is above all literate people who are primarily concerned with the problem of illiteracy). Participatory approaches are then conceived as methods to generate awareness and consequent demands.

Participatory literacy practices in Sub-Saharan Africa countries are observed in several ways, namely in particular:

- a. passive mode: the participants contribute to the realization of the action either financially (participation in cash or in kind) or physically (participation in household tasks, such as preparing the rooms, running alongside the training or other during the realization);
- b. consultative mode: the participants are asked before the action is carried out to give their opinion on its various aspects (content, methods, implementation framework, etc.);
- c. concerted mode: the contents and the methods of carrying out the training action are negotiated with the participants who then understand all the objectives of the

various stages;

d. empowering mode: the participants, considered as a group of partners involved in carrying out the action, have clearly defined and predefined responsibilities. This responsibility is not limited to the material domain, but, from an interactionist perspective, also concerns other aspects (pedagogical, administrative, etc.); and,

e. appropriation mode: participants are fully considered and recognized as owners of the training action. At this level, it is the autonomous participants who manage and control the action. They are involved in setting up the process of defining training content and developing teaching materials (Baba-Moussa, et al., 2014).

Literacy Practices Based on Transformational Learning

A number of literacy practices using ICT observed in the Sub-Saharan Africa zone are more or less part of a transformational learning process. Mezirow (2001 cited in Baba-Moussa, et al., 2014) outlines the stages of these learning practices as follows:

- a. an unsatisfactory situation, a disturbing dilemma, corresponding for example to a disorientation in the face of contradictory information, paradoxical injunctions;
- b. negative feelings: guilt, shame at not being able to get out of these situations or even understand them;
- c. a critical (reflexive) assessment of one's beliefs, of what one took for granted (epistemological, sociocultural), certain attitudes;
- d. the recognition that dissatisfaction and the changes initiated are shared by others;
- e. exploring the possibilities of new attitudes, new relationships and ways of acting;
- f. the development of a course of action: projects, decision to act;
- g. the acquisition of the knowledge and know-how necessary to implement the decided projects;
- h. experimenting with new roles and new attitudes;
- i. skill development and self-confidence building needed for new roles, attitudes, etc. ; and,
- j. the reappropriation of one's own life on the basis of new perspectives and the power to act linked to the transformation of these perspectives: empowerment.

Holistic approach

The literacy programs observed reflect the intention to put into practice an integrated and diversified holistic vision in the literacy policies of the Sub-Saharan Africa countries. The moderating factor consists of carrying out training projects and acquiring skills based on the four pillars of learning which confer: knowledge, know-how, social skills and interpersonal skills. Based on a systemic approach, the various programs put in place generally focus on:

- a. entry by demand, that is to say that the themes addressed by the programs are drawn mainly from the daily experiences of the target populations, as part of a

response to learning needs;

b. an integrated approach combining education, literacy, training geared to the needs of the socio-economic context and the fight against poverty;

c. the partnership and the synergy of the beneficiaries, of the methods of implementation of the programs, of the operators and actors of the development, of the communes and of the civil society;

d. capacity building of actors and development of their skills in action through training, support, sharing of experiences, dissemination and capitalization of good practices; and,

e. the allocation of material and financial resources.

Development of networks for the exchange of practices and knowledge

A network of associations is a framework of synergy aimed at pursuing and achieving common objectives with greater efficiency and effectiveness. The compartmentalisation, the lack of information and the relative lack of communication of African associations require networking efforts to exchange and share the results of activities. An exchange network constitutes the minimum basis for joint work and can evolve into a platform for consultation and joint production, the starting point of which is the capitalization of exchanges. The exchange allows the adult learner to express himself and to confront others to enrich and validate his own knowledge. The development of ICT increasingly favors the creation and functioning of these networks. Several networks work for and around issues related to literacy in sub-Saharan Africa such as the following three:

a. Pan-African Association for Literacy and Adult Education (PAALAE), is a platform which aims both to promote literacy and adult education in Africa, but above all to advocate with governments and peoples, so that they better understand the importance of the development of lifelong education for the progress of mainly sub-Saharan African countries.

b. African Community Network for Education for All (ANCEFA), is a platform of African civil society organizations. Its objective is to promote, foster and strengthen the capacity of African civil society at the regional level and in the respective countries, in order to advocate with their governments in favor of the priority to be given to Education for All (EFA) in their national policies.

c. Pamoja West Africa which brings together 13 national networks in the sub-region, practitioners of the Reflect approach as an effective tool to enable communities to influence their future as well as for social change, literacy and learning. The network aims to promote and facilitate access to quality lifelong learning for young people and adults, in order to ensure equitable and sustainable development in West Africa. He pleads for making literacy a priority in the countries of the sub-region.

Constraints and challenges of developing and

implementing literacy programs using ICT

This section addresses a set of challenges, constraints and difficulties that continue to hamper the creation, implementation and operation of literacy and adult education programs and activities, in particular through the use of ICT In the region.

In the field of ICT

Lack of human capacities in ICT

The shortage of human capacities is a major problem for the development and use of ICTs in the region. The skills gap is glaring and the need for qualified personnel in the ICT sector is enormous (African Development Bank Group, 2013; Economic Commission for Africa, 2013). The region needs a critical mass of ICT experts capable of designing, managing and executing electronic applications projects, and participating in the development of computerized services globally. In this regard, African countries have paid more attention to ICT capacity building in recent years, from the management of large-scale public projects to the design, development and maintenance of networks, information systems and distributed systems. Indeed, several ICT education, training and research centers have been created in recent years (African Development Bank Group, 2013). These include the African Virtual University (UVA) and the Virtual University of Senegal (UVS). However, computer and network training tends to be theoretical and does not meet the needs of public and private institutions which are often looking for cutting-edge technological solutions (UNCTAD, 2013).

Insufficient African infrastructure and electricity sector

The insufficient quantity and quality of infrastructure in the Sahel, in the areas of transport, energy, water, telecommunications and ICTs, is a major obstacle to the interconnection of countries. This lack of infrastructure affects not only inter-country infrastructure, but also within a country (UNCTAD, 2013). The same observation applies to the energy sector as one of the most loss-making sectors (Niquet and Touati, 2011). In sub-Saharan Africa, nearly 600 million inhabitants were still without electricity in 2014. Infrastructure problems represent a considerable obstacle to the integration of ICT in education and literacy programs, and partly explain the results obtained by the first generation of projects in this field (AFD, 2015). This reality is of great concern to development partners, especially in the area of ICT, because the challenge may indeed seem difficult to overcome. In this regard, there is still a long way to go and awareness of the value of the private sector takes time (Durand, 2013).

ICT strategies and the lack of coordination

The technological revolution marked by the convergence between IT, telecommunications and audiovisual media is a determining factor in the growth of Sub-Saharan African

countries. However, ICT development strategies seem to be broadly based on poverty reduction strategies. There is really a lesser effort to make ICT a real development sector. In addition, the lack of collaboration, cooperation and sharing between actors and partners working in the field of ICT (NGOs, grassroots organizations, institutions, etc.) gives the image of a large number of systems, of programs and platforms competing to solve the same problems. The lack of visibility and knowledge of what others are doing partly explains this state of affairs. These partnerships thus run the risk of losing their coherence.

Insufficient reliable ICT databases

The adoption of policies on Information and Communication Technologies constitutes an essential pillar for the development of information and knowledge societies. On this point, we observe a certain lack of exhaustive data on the achievements of infrastructure and equipment, both in formal and non-formal education. However, every country needs reliable data and indicators on the access and use of ICTs to measure their impact on development. The availability of these allows a government to make decisions on ICT policies as well as to compare the evolution of ICT in the country against other countries, in order to adopt effective solutions according to the needs realities of the context.

In the area of literacy

The growing population of children and NEET

Demographic variables (age and gender structure, growth, etc.) play, alongside social, economic, political and cultural variables, a central role in explaining the dynamics of education and literacy systems in the Africa region. These countries are both poorly educated and experiencing very rapid growth in the school-age population. According to the latest statistics compiled by UNICEF, February 2014, the population of children in sub-Saharan Africa will increase by 130 million between 2010 and 2025 (UNICEF, 2014). At the same time, although the proportion of illiterate adults has been declining in recent years, the number of illiterate individuals actually continues to increase due to population growth (Mingat, et al., 2013). This is obviously incompatible with a perspective of literacy, human development and social, economic and technological progress. Such a context presupposes a longitudinal educational and literacy approach in intergenerational terms. If we consider education as a means of breaking the vicious circle of the intergenerational transmission of poverty and consequently of illiteracy, literacy for parents is a real challenge to be met both because of its effects on children and demographic variables by the values transmitted (habits, attitudes) as its influence on the age of marriage, the life of couples, the use or not of contraceptive methods, diet. In fact, parents' level of education is a factor in demand for education and in reducing disparities between boys and girls (Hugon, 2007).

On the other hand, school expansion in the Sahel most

often leads to an increase in NEET. This means the large number of children who drop out before the end of primary school, while some do not even have the chance to be educated. This is to say that a large number of young people do not study, work and are not in training. This new sociological category results in intellectual unemployment and deskilling (OECD, 2014). Following the demographic explosion of young people in these countries, the high number of NEET has become the most urgent problem (Creamer, 2013). Faced with this situation, there are few and generally inadequate and underfunded solutions to strengthen and improve skills through adult education. Formal schooling already absorbs a high proportion of the country's budgets. Largely designed for illiterate adults, the non-formal sector fails to cope with school dropouts and its programs often fail to meet the needs of this generation of NEET (Aitchison, 2013).

Underfunding of literacy programs

While the literacy and adult education plans are integrated into the general education and development policies of the Sahel countries concerned by this work, the financial resources allocated to the implementation of programs in this area are modest. (Aitchison and Alidou, 2009; Baba-Moussa, et al., 2014; Archer, 2013; Aitchison, 2013; Ndiaye Mbaye, 2011). This underfunding is, so to speak, a reflection of the relatively low focus on literacy by both governments and donors. In addition, since non-formal education structures are essentially the responsibility of the communities, their development is limited given the limited financial resources, which explains the importance of networking operators allowing access to funding, in place of management tools or the execution of common literacy programs.

The illiterate Sub-Saharan Africans as potential beneficiaries are active economic actors and key social actors who must facilitate the processes of attitude and behavior change necessary for the achievement of sustainable development on the continent (Baba-Moussa, et al., 2014). For this reason, further integrating the sustainable development agenda and promoting the coherence of educational policies and programs involve, among other things, allocating more financial resources to literacy, in order to develop this sub-sector as a strategic axis of development.

Low level of professional qualification

The teachers responsible for literacy in the most countries are the least qualified and the least paid. Such a shortage of qualified teachers hinders the promotion of successful literacy in the region (Aitchison and Alidou, 2009, Hackett, 2007). The guideline of this orientation towards the professionalization of trainers is to focus on meeting the literacy needs emerging from the socio-educational and technological environment of Sub-Saharan Africa in its diversity, taking into consideration the various groups illiterate. The need for adaptation to the Sub-Saharan African context supposes:

- a. modification of social representations linked to the status of adult trainers;
- b. capitalization of practices and the creation of appropriate forms of capacity building to promote the field of action of literacy;
- c. an incentive to use open and distance learning and ICT in training and support for trainers and designers of teaching materials;
- d. assimilation of new notions and conceptual re-reading of the role of literacy, especially with the help of ICT; and,
- e. implementation of appropriate university research.

Such an orientation of continuing professional development will produce quality literacy interventions that motivate and inspire adults to become involved and to continue with the various literacy programs. Thus, improving the capacities of facilitators, trainers and volunteers represents a major challenge which requires a collective effort from various governmental and non-governmental stakeholders in the implementation of literacy programs. In addition, regional collaboration should be further exploited.

Despite undeniable progress, gender inequalities remain

While the number of out-of-school girls has declined considerably, more than half of out-of-school children for example, in Sahelian Africa are still girls. The participation of women in formal education and the social benefits they derive from it are maintained at a lower level than that of men. As a result, the subject of women's literacy is a very complex subject, as it encompasses many other issues. Literacy for Sub-Saharan women, as a vital issue and catalyst for development (UNESCO, 2006), is one of the main challenges and of crucial importance in addressing the broader issues of education for all.

Desert in statistical data related to literacy

While the statistical data and information collected in the field are relatively consistent for formal education in Africa Sub-Saharan, they are still disorganized, unreliable, confused or even deficient in terms of literacy and adult education. In these countries with poor statistics (Hugon, 2007), little capacity (or priority) is generally given to the collection, analysis, dissemination and updating of data, which results in a lack of information or obsolete information (Aitchison, 2013). This weakens the capacity of countries to monitor the performance of literacy programs, assess progress and revise strategic plans based on a body of accurate, reliable and valid data (ADEA, 2014, Aitchison and Alidou, 2009).

The challenges to be met include standardizing the data and benchmark indicators across the entire scope of the literacy issue, in particular through the integration of ICT. This involves, among other things, the creation of a systematic regional electronic database on the provision of literacy services and practices. Countries should share online best practices, effective initiatives and comparative

assessment reports on the use of ICT to promote literacy in the region.

Lack of coordination in literacy programs

This study has provided an overview of the multiplicity of projects and programs that have been developed in the area of ICT integration for literacy. This has resulted in a wide distribution of responsibilities and the involvement of a variety of public, non-governmental, private, civil society and donor stakeholders. On the other hand, the coordination of efforts between the different stakeholders involved in literacy activities is reduced (Aitchison and Alidou, 2009; UIL, 2013). This situation, due to the lack of strategy, synergy and coordination of actions, has negative repercussions on the quality of programs and the promotion of literacy in the region.

It is in this vein that the promotion of literacy, in particular through the use of ICT requires creating and maintaining the mechanisms for strategic action involving various stakeholders with better understanding, definition of roles and responsibilities. However, effective coordination requires strong capacities both among individuals and institutions, at the local, regional and international levels.

Monitoring and evaluation issues

Information on the evaluation of literacy outcomes in number of Sub-Saharan Africa countries is limited. In the absence of studies that can inform practitioners about the functioning of programs, non-formal education and literacy for young people and adults are not governed by rules, quality assurance mechanisms or national evaluations of the programs put into practice (Aitchison and Alidou, 2009). In addition, the lack of qualification in project management hinders the establishment of adequate operations and monitoring and evaluation mechanisms. Solving these questions requires evaluation actions, which are increasingly participatory, in order to make them as reliable as possible and to be attentive to the difficulties and challenges concerning illiteracy.

CONCLUSION

This study found that illiteracy is the most formidable obstacle to the growth and sustainable development of a large number of Sub-Saharan African countries (Sow, 2013). At the 21st century, the marked progress in the integration of ICT in literacy practices as well as in the management of literacy organizations indicates that the technological shift in the development of the sector literacy in some countries of region is well underway. While ICT does not automatically solve all the problems associated with the delivery of literacy programs, the technology envisaged must first and foremost be appropriate to help adults learn as quickly, economically and efficiently as possible. Such an orientation constitutes a component of development which marks a factor of organization, motivation and support for the implementation of literacy programs. Indeed, the practices observed revolve around two essential principles:

a. principle of anchoring in the realities of the country which leads to giving literacy programs specific objectives rooted in the context; and,

b. principle of innovation in literacy.

The Sub-Saharan Africa nurtures ambitious programs and action plans to promote literacy through the use of ICT. However, the implementation of this strategic orientation poses a serious challenge in terms of human capital development. The challenges arising from the analysis of certain examples of programs, initiatives and practices of use of ICT in this area have generally made it possible to identify capacity building needs, grouped around three areas:

a. leadership, design, planning, budgeting, implementation and evaluation of literacy policies and programs;

b. administrative procedures, good governance and human resources; and,

c. decentralization and local development in the sense of strengthening the skills of local communities.

In fact, this work has indeed helped to fuel reflection on the contribution of the use of ICT to literacy programs and practices. In the following sections, we will review the main elements retained from this study. Some can be seen as lessons and others as avenues for action.

Recommendations

The various initiatives and practices observed have highlighted successes and also major challenges to be taken up in the region. For this reason, the following sections will develop a number of recommendations based on certain weaknesses and bottlenecks. The recommendations will follow three main axes, namely: a) the field of ICT, b) the field of education and literacy, and c) the field of capacity building. Let us quote mainly:

The field of ICT

Invest in infrastructure

Support for infrastructure development, which includes transport, water, energy, ICT and the adaptability of ICT to the realities of underprivileged and rural populations, appears essential to ensure growth, reduce poverty, promote literacy and realizing the potential of the Sub-Saharan Africa in terms of development, education, health and agriculture (Economic Commission for Africa, 2013; World Bank, 2013; Akue-Kpakpo, 2013).

Reduce the cost of supply and the cost of access to the Internet connection

The literature ranks the Internet connection in sub-Saharan Africa in general among the most expensive in the world (Akue-Kpakpo, 2013). Thus, for the African user, the limitation of the Internet connection due to the costs is at two levels, namely: the cost of the equipment to connect to the Internet and the monthly charges related to the Internet connection. In this regard, it is recommended to:

a. facilitate and generalize access to the Internet through the development and implementation of a master plan

for Internet access;

b. set up an access offer subsidized by the State, so that the price of access for users, especially in rural areas, is reduced to a symbolic level;

c. reduce the prices of the Internet connection. These include, among other things, facilitating the construction of basic broadband infrastructure capable of supporting Internet traffic generated by mass use of ICT (Akue-Kpakpo, 2013).

Networking

As a space for consultation and exchange between different actors and stakeholders at national, regional and international level, networking through the establishment of partnership strategies and agreements is essential and makes literacy a driving force of change and social development. Strengthening and sharing online effective strategies, successful initiatives, innovative approaches and practices that have proven effective in integrating ICT for literacy are part of this approach. The challenge here lies in building capacity in the areas of project management, advocacy and techniques for organizing, operating and maintaining a network.

Field of education and literacy

Establish coordination between ministries to improve the implementation of education and literacy policies

Literacy systems in the Sub-Saharan Africa must result in a systemic approach, with strategies mobilizing the best resources within the framework of multifaceted partnerships. In addition, there must be synergy between formal and non-formal education. In order to ensure proper implementation of strategic choices in education, literacy and ICT, it is essential to ensure effective coordination of the various development programs and to be able to translate political choices into development plans priority actions, based on clear guidelines and coherent and integrated programs. Likewise, policy coherence and inter-ministerial cooperation are crucial, in order to enable ministries to have a holistic view of building local links and to make institutional arrangements to facilitate policy implementation and overcome problems coordination (Economic Commission for Africa, 2013; International Monetary Fund, 2013).

Promote innovation and research in the field of literacy

The professionalization of the literacy and non-formal education sector necessarily involves the production of scientific knowledge, information and research, applied to the field of literacy. Generally, research falls under one of the following three agendas: capitalization of experiences, exchange and enrichment of practices and improvement of the quality of actions. In this regard, it is advisable to recommend:

a. proceed to a clarification and standardization of terminology and concepts relating to literacy, adult basic

education, non-formal education and all-round learning throughout life;

- b. develop action guidelines and upgrading processes;
- c. Standardize the data that Sub-Saharan countries should provide on literacy in order to allow relevant regional comparisons. On this point, it is crucial to encourage countries to develop their own capacities to collect this type of information;
- d. re-mobilize and strengthen universities - essential partners for research and the development of practitioners in the field of learning and literacy;
- e. increase research, surveys, monitoring and evaluation activities and impact studies and increase the efficiency of sharing, dissemination and exploitation of existing research; and,
- f. disseminate good practices and successful experiences and promote Internet accessibility of reports, research, evaluations and all types of documents dealing with literacy and ICT issues. Today, the development of a comprehensive and systematic database on literacy provision and practices in Africa is becoming essential (Aitchison and Alidou, 2009).

Improve the budget for literacy programs

The resources devoted to the various components of literacy programs are insufficient in view of the multiple development challenges of Sub-Saharan countries. Hence the importance of:

- a. substantially increase budgets through the involvement of the public, private and civil society;
- b. allocate sustainable and predictable flows to literacy programs;
- c. introduce evaluation criteria alongside strategies for fundraising in this area;
- d. increase efforts aimed at functional literacy; and,
- e. intensify media and ICT use initiatives to develop online training (e-learning and m.learning) open to as many people as possible.

Area of leadership capacity building in the education, literacy and ICT sectors

To ensure good governance in the field of literacy, it is often necessary to develop the capacities of those responsible. The study of some previous programs for the use of ICT for literacy inspires the following recommendations for concrete actions to be taken by leaders:

- a.1 Promote visionary strategic leadership with the skills needed to drive change. Sedegan (2014) identifies four types of vision: organizational, future, personal and strategic. Factors that contribute to this vision are: information processing skills, diagnostic tools, conceptual knowledge, creative thinking and self-awareness.
- b.2 Bridge the gap between literacy policies and implementation strategies. Despite significant progress in terms of investment and innovation in the use of ICT to promote literacy, this study has observed the slowness with which strategies for the implementation of Education

and literacy development plans are moving towards the achievement of the targeted objectives (Sedegan, 2014). Indeed, the translation of visions and initiatives into real practices is more or less limited, particularly in the areas of poverty reduction and literacy. It is often admitted that some African countries suffer from a qualitative deficit of expertise or of the necessary capacities to analyze, set up, monitor and evaluate strategic policies in this area (CAFRAD, 2014). This observation leads to the objective of proposing a capacity building program geared towards the emergence and development of a new generation of qualified and sufficient leaders. It is about the capacities to monitor and support, in an effective way, the technological innovations and the dynamics of strategic development of the country.

c.3 Build the capacities needed to respond to the current and continuing challenges of Sub-Saharan Africans. Strengthening leadership is not an academic exercise, but rather a conscious effort taking into account the current challenges facing the development process on the continent as well as the educational challenges that appear to be facing future generations. Without the ability to react and be sensitive to the socio-political-economic and cultural challenges of the environment in Sub-Saharan Africa and its relation to the international context. It seems that leadership capacity building programs produce leaders who are initiate changes that do not meet the real needs of Africans and do not improve their lives, including the need to be educated and literate.

Meeting the challenges related to the promotion of literacy involves, among other things, the conduct of leadership with the capacity to:

- a. planning, organizing, and stimulating different approaches to literacy and the power to pursue excellence;
- b. initiate and maintain dialogue, mobilize individuals, raise awareness and understanding for literacy and the place of ICT in this process; and,
- c. ability to define and use performance and quality indicators as well as mastery of data collection and interpretation methods.

Build leadership skills in negotiation

The socio-economic development strategies, in particular education, are based on complementarity, partnership and competitiveness (Lelo, 2011) by relying on a range of development partners. As a result, it is essential that African leaders have the necessary capacities, skills and knowledge to enable them to master the negotiation process and approaches.

Exploit existing practices, initiatives, achievements and expertise in the use of ICT for literacy, so as not to redouble efforts, but rather to create synergies, develop complementarities, strengthen filling gaps and meet the country's needs in terms of capacity building.

Adopt a holistic methodological approach

It is inclusive, interdisciplinary and inter-sectoral. A capacity building program must take into account the broadest spectrum, in terms of partnerships and complementarities between the private, public and civil society sectors. The objective is to jointly develop a common vision to promote literacy, encourage partnership, collaboration, dialogue and networking between actors from different sectors (formal and non-formal education, health, ICT, vocational training, etc.) for mutual support and development. The approach is also intended to be flexible and adapted to the new needs that arise from the action. This ensures the continuous development of target groups, critically reviewing implemented practices and making necessary adjustments along the way. It is a capacity building program in the form of a long-term process unlike one-off training. It consists of a series of steps and actions before, during and after literacy action plans.

A leadership capacity building program

Related to literacy strategies, programs and practices cannot start with, or be restricted to, those who already hold positions of responsibility. While short-term interventions have their merits, the approach of creating an incubator of leaders in this area, through a long-term strategy of capacity building, allows for logical and sustainable preparation.

Building 21st century skills

The challenges associated with the 21st century place new demands on Africa. It's about equipping a generation of leaders with the skills and knowledge necessary to function well in an increasingly dynamic world and an ever-changing social, economic, educational and technological environment.

REFERENCES

ADEA.(2014). *Projet de Perspectives de l'Éducation en Afrique. Rapport sur l' Education Continentale.* http://www.adeanet.org/portalv2/sites/default/files/au_outlook_continental_french_2014_w.pdf

AFD.(2015). *Le numérique au service de l'éducation en Afrique. Savoirs communs n°17.* Agence Française de Développement, Février 2015. <http://www.afd.fr/webdav/site/afd/shared/PUBLICATIONS/THEMATIQUES/savoirscommuns/17-Savoirs-communs-VF.pdf>

Aitchison, John et Alidou, Hassana.(2009). *Apprentissage et éducation des adultes en Afrique subsaharienne : état des lieux et tendances. Rapport régional de synthèse.* Hambourg : Institut de l'UNESCO pour l'apprentissage tout au long de la vie.

Aitchison, John.(2013). *Faire le boulot : que se passe-t-il au juste une fois qu'un plan d'action international a été approuvé ?* Éducation des Adultes et Développement, Numéro 80, DVV International.

Aker, Jenny C. (2008). *Can You Hear Me Now? How Cell Phones are Transforming Markets in Sub-Saharan Africa.* Center for Global Development

Notes. <http://www.cgdev.org/content/publications/detail/894409>.

Akue-Kpakpo, Abossé.(2013). *Étude sur la connectivité internationale d'Internet en Afrique subsaharienne.* Division d'Environnement réglementaire et commercial (RME), Bureau de développement des télécommunications (BDT) et la Commission d'études 3 de l'UIT-T. Mars, 2013.

Arcouet, M. 1996. *Deux questions à discuter : risque-t-on de devenir analphabète si on ne sait pas utiliser les NTIC ? Vie pédagogique, n° 98, 24-26.*

Baba-Moussa, Abdel Rahamane ; Moussa, Laouali Malam et Rakotozafy, José.(2014). *FONDEMENTS ET PHILOSOPHIE DE L'ÉDUCATION DES ADULTES EN AFRIQUE.* Hambourg : Institut de l'UNESCO pour l'apprentissage tout au long de la vie (UIL) et Cameroun : Presses universitaires d'Afrique.

Banque africaine de développement.(2014). *CABO VERDE. Document de stratégie pays 2014-2018.* Département ORWA/SNFO, Banque africaine de développement, Mars 2014.

Banque africaine de Développement.(2015). *Guinée-Bissau. Document de stratégie pays 2015-2019,* Banque africaine de Développement, ORWA/SNFO, Janvier 2015

Banque mondiale.(2013). *Pour un monde sans pauvreté : Éliminer l'extrême pauvreté et promouvoir une prospérité partagée.* Banque mondiale-Rapport annuel 2013. http://siteresources.worldbank.org/EXTANNREP2013/Resources/9304887-1377201212378/9305896-1378757593120/WorldFreeOfPoverty_FR.pdf

Bélisle, Claire ; Berthaud, Christine ; Le Marec, Joëlle ; Liautard, Dominique ; Paquelin, Didier; Rosado, Eliana; Chaptal, Alain et Laborey, Yves. 2002. *Méthodes et outils pour l'observation et l'analyse des usages Étudier les usages pédagogiques des technologies de l'information et de la communication : une pratique de recherche ou/et de légitimation ?* Rapport final v.1. Étude PNER N°3. Document électronique accessible par Internet: <http://www1.msh.paris.fr:8099/index.asp?choix=3-2>

Bonnetcase, Vincent et Brachet, Julien.(2013). *Les « crises sahéliennes » entre perceptions locales et gestions Internationales.* Politique africaine, 2013/2 N° 130, 5-22.

CAFRAD. (2014). *Programme de travail du CAFRAD Juillet 2014 – Juin 2015.* 52ème Session du Conseil d'Administration. Centre africain de formation et de recherche administratives pour le développement (CAFRAD). Marrakech (Maroc), 14 mai 2014.

Chéneau-Loquay, Annie.(2010). *Modes d'appropriation innovants du téléphone mobile en Afrique.* Union internationale des télécommunications (UIT). Genève : Ministère des Affaires étrangères et européennes (MAEE).

Chéneau-Loquay, Annie.(2012). *Rôle joué par l'économie informelle dans l'appropriation des TIC en Afrique.*

- Les télécoms en Afrique, enjeux économiques et mutations sociales-IFRI, Paris 7 février 2012.
- Cisse, Seydou.(2001). La postalphabetisation – Cas du Mali. Éducation des Adultes et Développement, Numéro 57, DVV International. http://www.iiz-dvv.de/index.php?article_id=455&clang=2
- Commission économique pour l'Afrique.(2013). Tirer le plus grand profit des produits de base africains: l'industrialisation au service de la croissance, de l'emploi et de la transformation économique. Rapport économique sur l'Afrique 2013. Publications : Commission économique pour l'Afrique. http://www.uneca.org/sites/default/files/publications/unera_report_final_french_web.pdf
- Creamer, T.(2013). 'NEETs crisis' emerging as SA's most urgent challenge. Polity News, 25 juin 2013. <http://bit.ly/15Ip0e7>
- Durand, Charlotte .(2013). Les enseignements du numéro. Secteur Privé et Développement. La revue de proparco. No. 18 / Novembre 2013.
- Fonds monétaire international.(2013). SÉNÉGAL. Document de stratégie pour la réduction de la pauvreté – Note consultative conjointe. Rapport du FMI n° 13/195f, 2 juillet 2013 <https://www.imf.org/external/french/pubs/ft/scr/2013/cr13195f.pdf>
- Ginestié, Jacques, 1999 ; Techniques scolaires et enseignement technologiques. In, Giordan, A.; Martinand, J.-L. et Raichvarg, D., Technologies/ Technologies. Actes de XXI Journées Internationales sur la Communication, l'Éducation et la Culture Scientifique et Industrielles. Chamonix, 22-26 Mars 1999. p.75-82.
- GSMA.(2011). Africa Mobile Observatory. <http://www.gsma.com/publicpolicy/wp-content/uploads/2012/04/africamobileobservatory2011-1.Pdf>
- Helly, Damien ; Théroux-Bénoni, Lori-Anne ; Galeazzi, Greta ; Maïga, Ibrahim et Ouédraogo, Fatimata.(2015). Stratégies Sahel : L'impératif de la coordination. Institut d'études de sécurité (ISS). Note d'analyse 76- MARS 2015. <http://ecdpm.org/wp-content/uploads/Strategies-Sahel-ISS-ECDPM-Mars-2015.pdf>
- Hugon, Philippe.(2007). Variables démographiques, éducation et santé en Afrique Ou le mirage des OMD. L'Afrique face à ses défis démographiques. Un avenir incertain (dir Benoit Ferry) Paris, AFD,CEPED,Karthala,2007
- Ifri.(2012). L'Afrique, laboratoire des nouveaux usages ? Téléphonie mobile, Mobile Banking et autres développements spécifiques liés à la mobilité. Institut français des relations internationales (Ifri). BearingPoint France SAS, février, 2012.
- In'utu Sumbwa, Phyllis et Weluzani Chakanika, Wanga.(2013). Où sont les hommes ? Pourquoi se désintéressent-ils de l'alphabetisation ? Éducation des Adultes et Développement, Numéro 80/2013, DVV International
- Kleis, R. (1974). Programme of Studies in Non-Formal Education: Study Team Reports. Washington D.C. : Institute for International Studies in Education.
- KoneTago, Haoua.(2013). La mise en œuvre du Programme National d'Accélération de l'Alphabetisation (PRONAA) au Burkina Faso : Quels enjeux et perspectives pour l'amélioration des enseignements - apprentissages par l'usage des Technologies mobiles (téléphones portables, tablettes électroniques, etc.)? FORUM REGIONAL SUR L'INTEGRATION DES TIC DANS LES SYSTEMES EDUCATIFS AFRICAINS : FORCES / FAIBLESSES/ PERSPECTIVES. Dakar, 07 – 08 – 09 mai 2013.
- Leclerc, Martine. 2003. Étude du changement découlant de l'intégration des technologies de l'information et de la communication dans une école secondaire de l'Ontario. Canadian Journal of Learning and Technology. Volume 29(1) Winter, 2003.
- Lelo, Simon Mamosi.(2011). Place et rôle de l'Afrique dans les processus de négociations internationales. Comment réussir les négociations stratégiques et complexes pour promouvoir le développement de l'Afrique du 21ème siècle : Nouvelles approches et nouvelles tendances de négociations diplomatiques, économiques et sécuritaires. Forum Panafricain de renforcement des capacités de leadership. Centre africain de formation et de recherches administratives pour le développement (CAFRAD). Rabat (Maroc), 16 – 18 Mai 2011.
- MEP/A/PLN/EC.(2015). Programme d'éradication de l'analphabétisme au Niger à l'horizon 2023. Première étape 2015-2017: Plan d'actions triennal d'accélération de l'Alphabetisation et l'Éducation non formelle. Ministère de l'Enseignement Primaire, de l'Alphabetisation, de la Promotion des Langues Nationales et de l'Éducation Civile, Mars 2015.
- Mingat, Alain ; Ndem, Francis et Seurat, Adeline. (2013). La mesure de l'analphabétisme en question. Le cas de l'Afrique subsaharienne. Cahiers de la recherche sur l'éducation et les savoirs, n°12-2013, p.p. 25-47.
- Niquet, Valérie et Touati, Sylvain.(2011). La Chine en Afrique : Intérêts et pratiques. Essai d'analyse du mode de fonctionnement d'un système. Programme Afrique subsaharienne. Institut français des relations internationales (Ifri).
- Nshimyumuremyi, Adalbert.(2014). Gambie 2014. Perspectives économiques en Afrique. BAfD, OCDE, PNUD 2014.http://www.africaneconomicoutlook.org/fileadmin/uploads/aeo/2014/PDF/CN_Long_FR/Gambie_FR.pdf
- Ouédraogo, Sylvestre (2009). Etat des lieux du secteur des TIC, rapport général (Burkina Faso, Cameroun, Sénégal), DTTIC INFOR 2.
- Peraya, Daniel; Viens, Jacques et Karsenti, Thierry. 2002. Introduction:Formation des enseignants à l'intégration pédagogique des TIC : Esquisse historique des fondements, des recherches et des pratiques. Revue

- des sciences de l'éducation : Intégration pédagogique des TIC : recherches et formation. Numéro : Volume 28, numéro 2, 2002.
- Perriault, Jacques. 1989. La logique de l'usage. Essai sur les machines à communiquer. Paris: Flammarion.
- Proulx, Serge.1994. Les différentes problématiques de l'usage et de l'usager. In, A. Vitalis (dir), Médias et nouvelles technologies. Pour une sociopolitique des usages, éditions Apogée, Rennes, p. 149-159.
- Rennard, Marc.(2012). Le marché des télécoms en Afrique : perspectives d'évolution. Institut français des relations internationales (Ifri) , février, 2012.
- Rocheleau, Johanne et Basque, Josianne.1998. Une démarche d'intégration des TIC dans une école. Collection Comment informatiser l'école. Montréal : Corporation École informatisée Clés en main du Québec.
- Sedegan, Emmanuel F.(2014). Faire montre de leadership visionnaire stratégique dans la réforme, l'innovation et la modernisation du secteur public. Conférence interrégionale des ministres de la fonction publique et de la modernisation du secteur public d'Afrique, d'Amérique latine et des pays Arabes. Centre africain de formation et de recherches administratives pour le développement (CAFRAD). Marrakech (Maroc), 12 – 13 mai 2014.
- Sow, Gorgui.(2013). L'alphabétisation en Afrique repose entre nos mains. Éducation des Adultes et Développement, Numéro 80, DVV International.
- Sy, Karim.(2012).Cartographie du secteur des technologies de l'information et de la communication au Sénégal. Dakar, Programme sénégal-allemand d'appui à la compétitivité et à la croissance des PME et à la performance du secteur de la micro-finance (PACC-PME/PMF), Mars, 2012.
- Tardif, Maurice et Mukamurera, Joséphine. 1999. La pédagogie scolaire et les TIC: l'enseignement comme interactions, communication et pouvoirs. Éducation et Francophonie : Les technologies de l'information et de la communication et leur avenir en éducation, Volume XXVII, n° 2, automne-hiver 1999.
- Tschoumy, J. A. 1994. Hermès à l'école. Neuchâtel: Institut romand de recherches et de documentation pédagogique.
- Tual, Morgane.(2013). Afrique : comment le mobile profite à l'éducation. Tech Ethique, 17/01/2013. <http://techethique.blog.youphil.com/archive/2013/01/17/afrique-comment-le-mobile-profite-a-l-education.html>
- UIL.(2013). RAPPORT MONDIAL SUR L'APPRENTISSAGE ET L'ÉDUCATION DES ADULTES. Repenser l'alphabétisation. Hambourg : Institut de l'UNESCO pour l'apprentissage tout au long de la vie.
- UNESCO.(2004). Pluralité de l'alphabétisation et ses implications en termes de politiques et programmes. Document d'orientation. Paris, UNESCO. <http://unesdoc.unesco.org/images/0013/001362/136246f.pdf>
- UNESCO.(2006). Alphabétisation et alphabétisme, quelques définitions. Chapitre 6. Rapport mondial de suivi sur l'ÉPT 2006. UNESCO : Paris, P.p. 155-169. http://www.unesco.org/education/GMR2006/full/chap6_fr.pdf
- UNESCO.(2014a). PROGRAMME ET BUDGET APPROUVÉS 2014-2017, 37 C/5. Paris : UNESCO.
- UNESCO.(2014b). Reading in the mobile era: A study of mobile reading in developing countries. Paris : UNESCO
- UNESCO.(2014c). Exploiter le potentiel des TIC dans l'enseignement et l'apprentissage des compétences de base. Programmes efficaces d'alphabétisation et de numérisation utilisant la radio, la télévision, le téléphone mobile, les tablettes et les ordinateurs. l'Institut de l'UNESCO pour l'apprentissage tout au long de la vie : Hambourg, Allemagne. <http://unesdoc.unesco.org/images/0023/002317/231726f.pdf>
- UNESCO.(2014d). Alphabétisation et éducation pour le développement durable et l'autonomisation des femmes. l'Institut de l'UNESCO pour l'apprentissage tout au long de la vie : Hambourg, Allemagne. <http://unesdoc.unesco.org/images/0023/002301/230162f.pdf>
- UNESCO.(2015). Éducation pour tous 2000-2015 : progrès et enjeux. Rapport mondial de suivi sur l'ÉPT 2015. UNESCO: Paris. <http://unesdoc.unesco.org/images/0023/002324/232433f.pdf>
- UNICEF, 2014. Les enfants en Afrique. Statistiques clés sur la survie, la protection et le développement de l'enfant. Service des données et des analyses. Division politique et stratégie. UNICEF, février 2014.
- Valdés-Valdivieso, Luisa et Penteriani, Gaia.(2012). Rapport 2012 de l'Observatoire de la téléphonie mobile en Afrique subsaharienne. Résumé. GSMA London Office. http://www.gsma.com/publicpolicy/wp-content/uploads/2013/04/gsma_ssa_obs_exec_french_web_01_13.pdf
- Wallet, Jacques. 2001. AU RISQUE de se passer DES NTIC... HABILITATION A DIRIGER LES RECHERCHES. UNIVERSITÉ DE ROUEN
- World Economic Forum.(2015). Global Risks 2015 report, 10th Edition, World Economic Forum: Geneva. http://www3.weforum.org/docs/WEF_Global_Risks_2015_Report15.pdf

