Beyond Orthodox Approaches to Education Reform: Innovative Strategies for Accelerating Education for All in The Republic of South Sudan

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INTRODUCTION AND BASIC ARGUMENTS

Introduction

This paper looks at how the Republic of South Sudan (RSS) can accelerate the catch up in education by adopting disruptive innovations to implement its well-articulated educational plan modeled on EFA, MDG and SDG. The main argument of the paper is that the prevailing orthodox education strategies and tools currently being utilized will take long to provide all children with good quality education. These work well enough in stable environments, but is ill equipped to deal with fragile and volatile environments. RSS presents a continuous conflict environment full of complex and adaptive challenges with a very new and weak state. RSS has to think out of the box or even no box to fashion out implementation strategies that will deliver her citizens with the education dividend that they have been historically denied of.

Everything in RSS is new. The educational challenges presented by the new country demand innovative approaches to (a) building state capability (b) building partnership (c) expanding tools for delivery of educational services and (d) providing measures for quality control. RSS must challenge itself to imagine innovative paths to delivery of education, which diverge from business as usual and attempt to create things that are sustainable. This calls for 'thinking out of the box'.

To its credit, the government and peoples of the RSS has put in place an education strategy that holds out the promise of a better future. However, it lacks the capacity (financial, technical and institutional) to overcome the vast backlog in education provision. The challenges confronting RSS, cannot be overstated. Deprived during the successive colonial periods by Turkey, Egypt and Britain, recovering from Africa's longest and most devastating civil war, building the foundations for good governance that will coordinate the delivery of social services generally and education in particular will require many years of innovative out of the box thinking and commitment to delivery of services.

Some Basic Arguments

One, the current status of education in RSS cannot be isolated from the long history of political vulnerability and exclusion that has been experienced by the people of Southern Sudan during (a) Turkish/Egyptian era; (b) Anglo-Egyptian era; (c) Northern Sudanese era (internal colonialism)'.

Two, empirical evidence suggests a concentration of civil wars in countries with little education like RSS. Conversely, in a country with a higher proportion of its youth in school, the risk of conflict is significantly reduced (Collier, 2000). The lack of formal education opportunities constitutes a structural source of relapse to conflict in RSS.

HISTORICAL ANTECEDENTS OF EDUCATION DEVELOPMENT IN RSS.

Historically, Sudan was once a center of a flourishing indigenous civilization in which the following kingdoms – Nubia, Kush and Funj. In fact, the ancient Sudan civilization pre-dates Pharaonic Egypt and the rise of Christianity and Islam (Deng, 1995). The early civilization successes, plus its geographical location made the area very attractive to external contacts and invasions. The peoples making up the current RSS have heard a long history of conquest, colonialism (internal and external), giving rise to political vulnerability and exclusion in which education was increasingly used as an instrument for perpetual domination. These are illustrated in the following policies and epoch below.

The Colonial Policies on Education

Sudan went through two main colonial experiences: (i) The Ottoman-Egyptian (1821-1885) and (ii) Anglo-Egyptian (1899-1955). During the Ottoman period, very little in education was done. The focus was on slave trade and pillaging of the resources of Sudan. The semblance of nation building and modernization was only witnessed during the Anglo-Egyptian Condominium.The concept of condominium in international law refers to a joint dominion over a certain territory by two or more states, which jointly exercise their sovereignty over it.

Trying to control half of the world at the time, the British did not have the force to occupy Sudan. Like in other colonies across Africa, they had to institute the "divide-and-rule" policy in Sudan. They had two separate policies for the north and south. While the northern policy encouraged modernization through Islamization; the southern policy sought to strengthen the indigenous cultures and beliefs and divided the south into informal chiefdoms. The "divide-and-rule" policy separated southern Sudanese provinces from the rest of the country and slowed down their economic and social development. At the same time, the British heavily invested in the Arab north, modernizing and liberalizing political and economic institutions and improving social, educational, and health services (Metz, 1992; O'Ballance, 2000); while doing relatively nothing in the south

The implementation of the two separate policies for the north and south did set the stage for political vulnerability and exclusion of Southern Sudanese from the institutions of modernization including education. By denying the peoples of Southern Sudan access to modern education, it could be argued that the British imperial government, and later the ruling northern elites, used education as a tool for the perpetuation of socio-economic and political marginalization of both rural communities and Southern Sudan in particular. Within the framework of the 'southern policy', the British colonial authorities put in

place a 'language policy' that allowed vernacular languages to be taught in primary schools and English was designated as official language, while Arabic was excluded from schools and government offices in southern Sudan. These policies, it is important to note enabled the south to develop a sense of identity based on indigenous culture and Christian cultural norms.

The problem with the British policies was that they did not foster economic and social development in the south. The British officials blocked government and private development efforts in the south. The limited number of Missionary schools did not meet the education needs in the south. The consequence of the two separate policies was the creation and widening of the inequities between the north and south. In the 1940's South Sudan's educational infrastructure was comprised of a number of missionary schools, few elementary government schools, one teacher training center, one commercial school and one senior secondary school (Deng, 2006).

At the end of World War II, the unity of Sudan took greater impetus, due to pressure from Egypt, causing the British to address the need to accelerate economic and educational development so as to reduce the regional inequity in education and development (Deng, 1995). The policy response was for the government of Sudan to in 1957 to take over mission schools in South Sudan, and in 1962 expelled Christian Missionaries from the south for allegedly inciting South Sudanese against Arabization and Islamization of schools. The expulsion of the Missionaries from South Sudan wiped out the little educational services being provided and further curtailed their access to schooling and consequently generated negative externalities for Southerners.

During the four years preceding Sudan's independence, less than 8% of children in the South were in school, while the share of girls was almost zero, compared to 20% of the girls in the North who were enrolled in primary education.

Post-Independence Policies of Sudan

At independence (1956), the British merely handed over southern Sudan to the new northern colonial power. This marked the era of internal colonialism which in most cases is worse than external colonialism. The period of internal colonialism was marked (a) promotion of Islamic ideology by the government dominated by northern elites and (b) resistance by the oppressed south. It could be argued that the policy of Islamization contributed to the agitation for Southern independence with the aim of establishing a more equitable and inclusive society. Two different education policies increasingly guided the development of Sudan -Islamic education policy by the north versus a secular educational policy by the south

Islamic Education Policy by the North

The northern elites and the Sudan central government effectively continued the promotion of Islam through educational processes. Guided by the ideology of Arabo-Islamism, the educational system was used to undermine the religious and cultural diversity of Sudan. Some of the educational policies pursued to further Islamization of the country include: (i) Replacement of English with Arabic as the language of instruction leading to intense widening of the gap between north and south; (ii) Rewriting the history of Sudan with the aim of erasing of the South Sudanese indigenous history (Deng, 2006).

The Northern education policy orientation was based on Islamic values. The thrust of the education policy can be summed up as follows: the use of one national curriculum throughout the education system; the use of Arabic as the sole medium of instruction, with English taught as a subject; the full control by the government over all schools in the country; and the consolidation of region and religiosity in, and through the educational system (Kenyi, 1966, p.15). The policy was for the educational thought to be grounded in the Quran. The Quran was to lay the foundation for education aims and principles.

Southern Resistance and Formulation of Secular Education Policy

Southern resistance to Northern domination became pronounced with the civil war. The civil war in Sudan between the North and the South lasted, with certain intermissions (e.g., the cease-fire between 1972 and 1983), from 1955 to 2005. The resistance by different Southern Sudanese liberation movements against the various Khartoum regimes was due to what was perceived as oppressive policies against the South. Educational policies were found to be very critical. Within this period, the North wanted to further its political interests of subjugating the South using education as instrument of subjugation. The South resisted by using education as an instrument of liberation. The conflict between the educational policies and aspirations of the North and the South could not be reconciled or resolved. During the war, the SPLM/A fiercely resisted the imposition of an Islamist ideology in the education system. The Secretariat of Education (SPLM's Ministry of Education) introduced a more, modernist education policy in the liberated areas in the South. A much-detailed description of SPLM's education policy is made below. It is important to note that South Sudanese communities supported primary schools during the war. However, the longevity of the conflict made the running of these schools very difficult (Nicol, 2002). Suffice to say that the education system in the South was secular, Western and modernist in nature. It was initially based on the curricula and textbooks from Uganda, Kenya and Ethiopia, but gradually, a South Sudanese curriculum was introduced. The development of a modernist, Western educational discourse contributed to a strengthening of the division/conflict between the South and the North since it contradicted the non-secular, Islamist policies and practices of the North.

Within this period, the long-standing inequalities in education between the north and south persisted (Deng, 2002). The south ravaged by long periods of civil war, failed to receive adequate resources transfer from central government, and the average realized budget for the southern regional government during this period barely covered 20 percent of the planned budget (Deng, 2003). As a result of inadequate resourcing, social and economic services particularly access to education deteriorated in the south relative to the north. With a population of 20 million during the inter-war period, the primary school enrolment rate was about 40 percent in the north but less than 12 percent in the south.

The civil wars and the government neglect of the south gave rise some international development humanitarian assistance. In 1989, a UN/NGOs consortium known as Operation Lifeline Sudan (OLS) was formed (Deng, 2003). This provided the framework of a tripartite agreement between the SPLM, the GOS and the UN that would ensure the flow of humanitarian assistance to the needy civilians wherever they are. The OLS emergency education program in southern Sudan started in 1993 to support community initiatives to rebuild southern Sudan's education system (UNICEF/OLS, 2002). Despite limited resources and absence

of policy guidance and central organization authority in the 1990's the local communities with support from OLS and NGOs managed to open their own primary schools across some areas in southern Sudan.

SPLM Education Policy

In 2002, SPLM came up with Education Policy documents, which clearly spelt out the mission, national goals, guiding principles and implementation strategies. The SPLM education policy had three main policy goals: (i) With respect to UPE, education shall be the right of every child regardless of ethnicity, culture, gender, religion and social economic status; (ii) On Adult Literacy, education shall be accessible to any citizen of the New Sudan; and (iii) On Gender Equality, emphasis shall be placed on girls' education in order to achieve equality in education (SPLM, 2002). The thrust of these policy goals was to make education by intent inclusive. This undoubtedly supplanted the old exclusive education policy that contributed to the causation of the recurrent conflicts in Sudan.

EDUCATION DEVELOPMENT UNDER THE GOVERNMENT OF SOUTH SUDAN

The Government of the Republic of South Sudan (GRSS), created with the signing of the Comprehensive Peace Agreement in 2005 and established as a nation in July 2011, inherited none of the institutions associated with a modern state (Brown 2012). Given the long history of marginalization and exclusion, it is understandable why its human development indicators are among the worst in the world. The human capital and physical infrastructure are limited. Insecurity remains a major challenge. However, independence unleashed a wave of hope, and expectation in which education has been correctly identified as a crucial dividend of independence. There is no question that more than any sector, education has the potential to deliver a large and highly visible peace dividend.

The peace settlement in 2005, ushered in good progress in education and other social services. Between 2005 and 2009, the number of children enrolled in primary school doubled, from 0.7 million to 1.4 million and enrollment levels in secondary education increased significantly (Brown, 2012). These achievements reflect the strong drive of parents to get their children into school. The key challenge is how South Sudan can adequately meet up with parental and community demand for education. Supply is a challenge. In many other African countries demand of education seems to be an issue

Main Challenges of Education Development in RSS

Given the global frameworks of EFA, MDGs, and SDGs, the Republic of South Sudan has daunting educational challenges.

One, is provision of access to school for a whole generation of primary school children, many of whom are currently out of school. South Sudan is a young country not just by virtue of its recent independence, but also in terms of its age profile. One third of its population is aged between 5 and 16 years old.

Two, is improvement of quality of education and learning outcomes. This is complex and not unique to South Sudan. Most countries globally are wrestling with this problem. Education outcomes reflect the

combined effects of household poverty, untrained and unsupported teaching staff and limited access to learning materials.

Three, is gender equity in the provision of education. South Sudan's girls face a triple disadvantage. The girls in most cases are: the last in; the first out; and the least likely to make it to secondary school.

Current Threats to Education Development

Education in RSS has for long been constrained by the following factors

One, is violence and armed conflict. Frequent occurrence of civil warfare and violence have increasingly devastated the educational prospects in RSS through school closures due to general insecurity, destruction and occupation of school facilities by armed soldiers, and kidnapping of young boys to be used as soldiers.

Two, cost and distance have mostly been reported as constraining factors for children's' access to schooling though GRSS has a policy of free basic education. However, parents face indirect costs associated with the purchase of uniforms and books. Distance is especially problematic in states, -such as Western Bar Ghazal, Western Equatorial and Jonglei -with low population densities.

Three, is poverty and hunger. These are great obstacles to schooling in RSS. Evidence from many countries has shown that maternal malnutrition and micro-nutrient deficiency, coupled with malnutrition in early childhood has devastating and largely irreversible consequences for cognitive development and learning achievement.

Four, is the low quality of the teaching force. Most of the teachers do not have the requisite qualification to teach. This is compounded by the shortage of professional staff to (a) train teachers (b) develop a cadre of education professionals and (c) build national/regional center of excellence. The South Sudanese diaspora that is highly educated can play a major role here.

Five, is shortages of learning infrastructure. These include: (a) classroom shortages; (b) shortage of toilets and safe drinking water; (c) short supply of textbooks and learning materials.

SUGGESTED INNOVATIVE OUT OF THE BOX IMPLEMENTATION STRATEGIES

The Government of RSS in collaboration with the Development Agencies has successfully put in place sufficient education policies, which provide the framework for giving all Sudanese basic education. The Education Act of 2012 includes the provision for: two years of pre-primary school, eighth years of compulsory, free primary education, four years of secondary school -both academic, technical and vocational education, provision of the alternative education system including basic adult education programs, promotion of gender equity through all levels of education, and a set of standards for quality education. It could be argued that South Sudan's education policies and plans are coherent with the global planning template. The main issue is the mechanisms and capacity to deliver the promises

The RSS is a country that should be in a hurry with respect to the provision of education. It has complex challenges of establishing democratic institutions, fighting corruption and upholding the rule of law with the coordination of a weak state. To accelerate the provision of education to all citizens will demand innovative approaches. South Sudan's government and its citizens must challenge themselves to imagine

out of the box paths to education provision which diverge from business as usual orthodox strategies that have trapped most African countries from succeeding in leep frogging educational advancement.

Let's look at the institutional capacity of RSS. At independence, everything is new. Its national sovereignty is still under 10 years old. And yet as the new country struggles with corruption, insecurity and political instability, just like most countries in the continent, many things about RSS are not new. The country often seems to be falling into the same age-old traps that have beset countless other post-conflict, resource-rich developing countries such as Nigeria, DRC, Venezuela, to mention only these three. With the Comprehensive Peace Agreement (CPA) in 2005 and independence in 2011, the world's leading donors arrived in RSS, carrying with them with the tools, materials and blueprints to develop the country. The education policy and plan followed this process. If you look very closely to the education policy and plan of RSS, it looks exactly like the ones of other developing countries. That should not be the case. The contexts are different. One could argue that in the formulation of the RSS education plan, South Sudanese context/s were overlooked in order to pursue the international donors preferred EFA agenda. Without any history of South Sudanese self-governance, no predecessor institutions, and starting essentially from the scratch, the temptation to transplant strategies from other areas was hard to resist. The Development Partners arrived in RSS with a pre-formulated education strategy. The education strategy looks very good on paper. But messy at implementation because of the complex challenging factors in fragile post conflict environments that has been marginalized for over centuries by the Turks, Arabs, British and Sudanese.

Most African countries after independence followed this path. They, like RSS made education a priority sector for national development and implemented endless reforms based on the education fads/or strategies popular at that time. They made some progress; but not significant enough to make the continent globally competitive (Agu, 2015). The question has always been and is still how we can prepare African children to compete very effectively with children from other continents in the twenty first century? The same question is very relevant for RSS. We argue in this paper that Technology can be of enormous benefit in the quest for African generally and RSS in particular to prepare the children for the twenty first century skills. African educators should always keep this question at the back of their minds: what year are they preparing the students for? 1950? 2020? Or 2030? Are we preparing them for yesterday, today or for the future? Dewey was right in asserting that "if we teach today's students as we taught yesterday's we rob them of tomorrow" (Dewey, 1944: 167). The same was also differently said by the renounced Bangladesh Rabindranath Tagore: "Don't limit a child to your own learning, for he was born in another time" (cited by Khan, 2012: vii). The RSS children should be given the education that will enable them function in the future.

Moving forward since RSS has adopted the educational policy developed; there is a need to look at creative/innovative strategies for delivery. As the world's newest country, RSS offers an opportunity to try new things in education delivery. Moreover, new technologies offer hope for more effective ways of teaching and learning. Technology when deployed fully in the education process in RSS has the power to make education far more portable, flexible and personal to foster initiative and individual responsibility. It is important to note that today's RSS child lives in a technological era in which cell phones, Internet and Google and Text Messaging are normal. Technologies have made it possible for almost everyone in particular children to know things very easily. Technology is fast redefining the land scape of education

and what will eventually be the important future life-skills. The core life-skills will include: (a) creativity and innovation; (b) critical thinking and problem solving; (c) communication; (d) information management; (e) effective use of technology; (f) lifelong learning; (g) initiative and entrepreneurialism.

Some of the technological innovative ways that can be used to increase access to quality education will include:

Provision of One Laptop per child computer (OLPC)

Educators in the 21st century are increasingly realizing that students entering the classroom today are much different from those who have come before. Today's students are demanding a change in the classroom because of their ability to gather information faster than any previous generation (Sheskey, 2010). Understanding the concept of the *digital native* and the *digital immigrant* (Prensky, 2005/2006) will help us understand the modern student's engagement with technology. The famous "One Laptop per Child" project, (OLPC) by Nicholas Negroponte of MIT Media Lab which is bringing inexpensive laptops to disadvantaged students around the globe is an innovation that puts the challenge and opportunities of learning in the hands of students. It enables the students to be engaged in the searching process

The objective of OLPC in RSS is to build and supply a low-cost lap top computer for children and young people in the country. The main argument is that engaging students with tools that they use outside of the classroom everyday will help teachers make strong connections. The OLPC initiative has latterly found itself continuing to be one of the most substantial –and certainly most visible –global educational technology projects of recent times (Selwyn, 2013). The program is fast being adopted in many countries and lauded as an example of innovative international development –to the point of calls "for the OLPC program to be designated by the UN as a new Millennium Development Goal". (Tabb, 2008: P.337) According to the CEO of Google, Eric Schmidt: "Search is so highly personal that searching is empowering for humans like nothing else; it is about self-empowerment; it is antithesis of being told or taught". It is empowering individuals to do what they think best with the information they want……Search is the ultimate expression of the power of the individual; using a computer, looking at the world, and finding exactly what they want, everyone is different when it comes to that (Friedman, 2005, p.156).

Advanced Academics in Brick Town District of Oklahoma USA

The school in a small renovated warehouse in Brick Town District, provides public education over the internet to students in 29 states, 140 school districts and seven virtual schools from California to New Jersey and Alaska to Texas (Moe and Chubb, 2009). Sixty thousand high school students took courses there during the 2006-07 school year. The warehouse is home to a top-notch team of technologists. They create the platform on which courses are delivered, tests administered and scored, and grades reported to state and local school systems. The warehouse is also home to about thirty teachers in all. Every course is supported by a teacher who is fully certified.

The teachers instruct their students as they work through digital lessons or complete assignments. Some of the instructions come through written "instant messages"; some occur via white-board correspondence, with both teacher and student sketching ideas on the same electronic surface; some involve internet phone

calls. The teachers typically support four to five students at a time from their computers, providing a level of individual attention they could never offer to a regular high school class.

Teachers like the informal atmosphere of the warehouse, where they easily interact all day long, sharing student challenges, and brainstorming strategies. They enjoy the flexible hours. They can choose from a variety of hours, as students take their online courses around the clock, day and night.

The Khan Academy

The Khan Academy is a non-profit educational website created in 2006 by educator Salman Khan, a graduate of MIT and Harvard Business School (Paul, 2013: 110). The stated mission is to provide "a free world-class education for anyone anywhere." (Khan, 2012: 7).

The website supplies a free online collection of more than 4,000 micro lectures via video tutorials stored on YouTube teaching Mathematics, history, healthcare, medicine, finance, physics, chemistry, biology, astronomy, economics, cosmology, organic chemistry, American civics, art history, macroeconomics, and computer science. Khan Academy has delivered over 240 million lessons; it is now the premier teaching site on the Web.(Paul, 2013). The Khan Academy which started with one student –Nadia –the cousin of Salman Khan now is helping to educate more than six million unique students per month. The videos had been viewed over 140 million times and students had done nearly half a billion exercises through the software (Khan, 2012).

Innovative School Access Program (SAP) in Nigeria

Nigeria historically has been offering free primary education for the past half a century (Agu, 1986). But the country's education system has not been able to provide access to good quality education to all school-aged children. Only 44 percent of children in grades 7-12 attended school in the years 2007-2011. To address these challenges, Intel Education created the comprehensive School Access Program (SAP) education solution, which facilitates learning through modern digital technology.

SAP's objective is to entrench the use of ICT as a tool for teaching and learning, and to serve as a model for future programs that will also use technology to advance education within the country. The five main components of the program are:

1. Strengthening the technological infrastructure with supply of PCs and related hardware, as well as internet connectivity.
2. Enhancing schools ICT readiness through refurbishing classrooms and deploying technology infrastructure including electricity and other sources of energy.
3. Creating relevant integrated software with local education content using e-learning solutions as well as sample lesson plans from Intel.
4. Professional development of teachers through a five-day training period.
5. Training and support for suppliers and engineers to ensure proper delivery, installation, and ongoing maintenance.

Intel first piloted SAP in a single Nigerian government school in 2007. The lessons learned from the pilot were used to guide the national rollout, which has reached 3,000 schools in 2013. An assessment of the impact of SAP in 2012 showed positive outcomes on students and teachers. One of the most significant

improvements seen in the schools was a rise in Senior Certificate Examination scores in English and Physical Sciences (Takang, 2012). The study also found that SAP program had strong impact on schools: (a) half the schools made additional investments in Intel Education Solution (b) outside of class, 74 percent of teachers use the Intel Education Solution for research and (c) teachers expressed confidence in their ability to use the Intel Education Solution.

Mexico,' Television Assisted Telesecundaria Programme

Telesecundaria was designed to meet the educational needs of hard to reach rural areas in Mexico, mostly communities of under 2,500 inhabitants. The main characteristics of Telesecundaria have always been: (a) using television to carry most of the teaching load, and; (b) using one teacher to cover all subjects, rather than the subject matter specialists used in general secondary schools. At first it was offered in a few states (there are 31 plus the national capital), with a little over 6000 students. In 2000, the program was available at 13,851 locations nationwide, and served over 1,043,000 students and employed over 46,000 teachers.

Educational television has been the mainstay of the program throughout the years of operation. However, the mode of use of television has gone through three evolutions. The first stage, involved a regular teacher delivering lectures through a television set installed in classrooms. Books and workbooks were provided to follow television program with exercises, revisions, applications and formative evaluations. The second generation improved on this process and created programs with greater variety. The third stage/generation, which began in 1995, deployed a satellite to beam the program throughout the country and used a wider range of delivery styles. Telesecundaria is now an integrated and comprehensive program providing a complete package of distance and in-person support to students and teachers. Telesecundaria has proved to be cost effective. The flow rates of Telesecundaria are found to be better than those of general secondary schools.

Interactive Radio Programme For Pastoralists in Nigeria

The nomadic population in Nigeria accounts for 9.4 million people, out of total population of 148,980,000 including 3.1 million school age population (UNESCO, 2010). The participation of the nomads in regular national education systems used to be extremely low. Access to radio and television as information and communication tools is very high in Nigeria, especially in Northern Nigeria. Through the National Communication for Nomadic Education, Interactive Radio Programmed (IRI) was launched in 1992 to provide open and distance education to pastoral nomads (Adeosun, 2010). Using the Federal Radio Corporation of Nigeria (FRCN), Kaduna, particular hours of the day are dedicated to air participatory instructions on basic functional literacy, numeracy, health and environmental education, modern techniques of animal husbandry, and civil responsibilities.

The objectives of using the radio for nomadic education were to (a) mobilize and sensitize the nomadic pastoralists to appreciate the value of modern education (b) encourage nomads to contribute meaningfully towards the education of their children (c) motivate nomads (both men and women) to enroll in adult literacy programs (d) improve the quality of teaching and learning, particularly where performance is low and teachers are poorly trained.

The radio program is participatory, making it widely accepted by the nomads. They listen to this program which contains weekly news, interviews, discussion, music, drama etc. There are also school based IRI programs to improve quality of teaching and learning where performance is low and teachers are having challenges. As a result of the innovative strategies adopted by the Commission, there have been great improvements in the quality of curriculum content delivery, with overall improvement in the learning achievement of nomadic school children and adults. The program is successful that USAID adopted it as a strategy to improve literacy and numeracy skills of pupils in Lagos, Nasarawa and Kano states in its Community Participation for Action in the Social Sector's (COMPASS) program

CONSTRAINTS TO THE USE OF TECHNOLOGY FOR IMPROVING EDUCATION QUALITY

There is no question of the use of technology to improve the quality of education in an information age. There is almost a consensus that the use of new technologies in the classroom is essential for providing opportunities for students to learn to operate in the global information age. We will argue that countries that do not incorporate the use of new technologies in schools cannot seriously claim to be preparing their students for life in the twenty-first century. However, getting school system to adjust and change in the direction of ICT integration with schooling processes like any change has been and will be difficult. There are a lot of constraints with respect especially on the integration of ICT into teaching and learning. The constraints could be categorized into two: (a) teacher level constraints and (b) school level constraints.

Teacher Level Constraints

These constraints are capability issues and are specific to the teacher/s. They will include: (i) lack of teacher competence; (ii) lack of teacher confidence.

Lack of Teacher Competence

Many teachers especially in developing countries lack the knowledge and skills to use computers. A worldwide survey conducted by Pelgrum (2001), of nationally representative samples of schools from 26 countries, found that teachers' lack of knowledge and skills is a serious constraint to using ICT in primary and secondary schools.

Lack of Teacher Confidence

A key constraint that prevents teachers from using ICT in their teaching is lack of confidence. Lack of teachers' confidence could be as result of limitations in teachers' ICT knowledge about using ICT in the classroom of children who perhaps know more than they do.

School Level Constraints

The school-level constraints are institutional in nature including: (i)lack of time; (ii) lack of effective training; (iii) lack of accessibility; and (iv) lack of technical support.

Lack of time

Time is a big constraint for teachers as the time for schooling is already allocated. How time impacts on teachers' efficient and effective use of computers in teaching and learning depends on the stage of ICT education integration. For the school systems that have computers in schools, the issue could be the difficulty in scheduling enough computer time for classes, and the time for teachers' to explore the different internet sites, or look at various aspects of educational software. For the teachers in the school systems that are at the basic stage, the time issue could be time to learn and understand the concepts and techniques that accompany the use of technologies. Use of technology in education will require initial time allocation to understand, plan and interact with the program.

Lack of Effective Training

Lack of effective training is a constraint. The success of ICT integration in the schooling process depends on the adequacy of the training. The issue of training is certainly complex because it is important to consider several components to ensure the effectiveness of training. For the trainings to be adequate, they should include: (i) training in digital literacy; (ii) pedagogic and didactic training in how to use ICT in the classroom.

Lack of Accessibility

Inadequate access to resources in schools, including home access, is another complex factor constraining teachers from integrating new technologies into education. Inaccessibility of ICT resources could be as a result of (a) non availability of the hardware and software or other ICT materials within the school and home for a many of the developing countries and (b) poor organization of resources, inappropriate software and poor quality hardware. Accessibility of ICT resources may not guarantee its successful implementation in most African schools because of the main issue of adequate electricity supply to power the utilization of the resources.

Lack of Technical Support

One of the top barriers to ICT use in education is lack of technical assistance (Pelgrum, 2001). The new technologies have quite some naughty technical problems such as: websites not opening when needed; failing to connect to the internet; printers not printing; malfunctioning computers. These problems are constantly being faced by most organizations including the international organizations working in most African countries. Consequently, these organizations tend to employ technical computer experts to assist in solving these endless re-occurring problems. ICT integration in schooling will definitely encounter these problems. These barriers have impeded the use of ICT in schools that have been trying it and will increasingly constrain its introduction in many African countries given the state of the maintenance culture in Africa which is low. This will be compounded by the fact that teachers in Africa will definitely have to work with donated computers which in most cases will be old.

THE ROLE OF THE DIASPORA IN ACCELERATING THE EDUCATIONAL CATCH UP.

In South Sudan, the conflict between the North and South forced a great number of young people to leave their country. Some walked for hundreds of miles in an attempt to escape the violence around them. The

strongest of these made it to the neighboring countries and to USA and many European countries. These people joined the diaspora, witnessing the independence of their country from a distance. How can these South Sudanese diaspora be partners in developing the education sector?

The concept of diaspora means many things to many people. Generally, it is commonly used to indicate religious or national groups living outside their homeland. Ionescu (2006) has defined diaspora as members of ethnic and national communities, who have left, but maintains links with their homelands; this paper adopts the later definition. Belonging to a diaspora entails a consciousness of or emotional attachment to commonly claimed origins and cultural attributes (Vertovec, 2010). It is a population group that retains a material allegiance to another country from where it originated at some point in the past.

Very many diaspora organizations have emerged in the last few decades to mobilize assistance. Their emergence is perhaps nowhere more noticeable than on the internet. Websites have been set up to advertise jobs back home for emigrants. They have also organized social and economic conferences for their various groups. The RSS diaspora members like the other diasporas from the developing countries have contributed to the development of their countries in various ways, such as: transfer of financial remittances; shared human and social capital. The transfer of these from the diaspora to their countries of origin tend to make little or no impact because of issues of coordination. The agenda of the diaspora are not always consistent with the ones of the home country. For RSS, the General Education Strategic Plan 2012-2017 could serve as the basis for coordinated collaboration between diaspora and the government. One of the key areas that the diaspora has leverage on the government is on the use of technology on education development. The diaspora can look at the above models of technology driven approaches to education and see how these can be used to accelerate education in RSS.

Some RSS Experiences of Diaspora Involvement in Education

There is no question that the diaspora is needed in the reconstruction of education in RSS. In fact, the General Education Strategic Plan (2012-2017) had this to say: "*Decades of neglect and years of civil war have left the country with a shattered infrastructure, a large diaspora of some of its best talents, and generations of youth who never had the opportunity to attend school (MGEI, 2012: 13).* There are examples of Some South Sudanese diaspora involvement in the reconstruction of education. However, most of the initiatives in education by the diaspora did not succeed. The assessment of three cases: (i) supporting primary education; (ii) education and home for street children; (iii) vocational training for women and youth started after independence found the first and second case at the level of planning and fund raising, while the third case has managed to establish a Centre with the help of some Churches and NGOs and having sustainability challenges (van der Linden et al, 2013).

Diaspora involvement face very difficult challenges. One is the issue of trust. The South Sudanese diaspora and the South Sudanese living in South Sudan will look at things very differently. The agendas of both tend not to be consistent with each other. The mindsets of both the diaspora and the nationals are different. The later think that the former is just trying to take the leadership and the spoils of war from them after fighting for over 20 years. Two, coordination of diaspora activities is very difficult. Some of the activities are isolated efforts as in the cases reviewed and lack a long-term strategic vision. The General Education Strategic Plan (2012-2017) could provide the vision which hitherto was missing. Three, is accountability

of the national actors. Diasporas will find it difficult to monitor the activities from a distance. Most diasporas find it difficult to go back for obvious reasons. Diasporas getting correct feedbacks from home front could be difficult.

Mechanisms for Diaspora Engagement in Education

Guided by the General Education Strategic Plan, the following mechanisms could be utilized for effective engagement. **One,** is for top RSS professional diaspora members who have voices in education matters persuade the educational organizations, universities where they are affiliated to engage with the education development in RSS. **Two**, RSS diaspora members to use their knowledge and invest back home in some innovative strategies for education. **Third**, diaspora members to be identifying new strategies, customize them and inform home for use/and advice.

As an example, the Khan Academy can be replicated in the various communities of RSS as described below.

AN EXAMPLE OF OUT OF THE BOX THINKING FOR RSS DIASPORA.

Community Based ICT School Centers

This is based on the Khan Academy Model. The mission of the school houses could be: To provide a free, world class education for anyone, anywhere. We now live on a small planet, in a world that, as Thomas Friedman put it, is hot, flat, and crowded. Thanks to technology that has accelerated everything we can think of; including education. Whether you are talking of the nomads in Northern Nigeria, Uganda, Somali, Afar, South Sudan or the fisherman in Lake Victoria or the river Nile, one common possession is a mobile phone. They are all connected to the world; thereby making it flat. This reality enabled Salman Khan to develop a computer-based, self-paced learning.

Let's go to the cell phones that everyone in RSS (including the soldiers with AK47) own. They have changed lives everywhere; and they have positively revolutionized lives in the developing world including RSS. Given all the challenges in providing education to RSS children -poverty and malnutrition, shortage of school buildings, distance from schools, violence, shortage of textbooks, poorly trained teachers; however, reaching people possessing cell phones cuts off most of the obstacles. Good teachers with the correct logistics can engage the children in a learning process from Juba, Uganda, Kenya or even from Dallas virtually free.

How can this be done? If you think of it within the box there will be no solution. However, if you take out of the box thinking process, you will start seeing the possibilities. If you travel into rural Africa one thing they all love is Nigeria movies. How about if we use the mechanics of Nigerian movies plus the Khan Academy principle to develop community based ICT learning centres. In the most remote rural villages, there is almost someone with a first-generation DVD player and television set. We can for a start put quality lessons in Math's, English etc. into Videos for educating children in a community safe environments.

CONCLUSION: TECHNOLOGY FOR THE AFRICAN SCHOOLS OF THE FUTURE

In a very short time, the world changed; became flat and increasingly changing very fast and changing the skills that used to be important for our survival. There is no question that the socialization agencies-family, schools –should adapt very quickly to be able to cope with the new realities. With respect to schools, we argue that the methods of teaching and learning must adapt to these changes: (i) All students need skills to thrive in a global knowledge economy; (ii) In the age of the internet, using new information to solve new problems matter more than recalling old information; (iii) Today's children and youth are differently motivated when we compare them to previous generations.

Over the next 20 years, RSS will experience huge growth in the number of young people in its society. These young people will need to be healthy and educated in order to be competitive and productive. Investment in quality education that targets the poor and hard to reach groups will be very critical in influencing the direction RSS will take. In the RSS, almost everyone believes education provides hope. But it has to be a transformative education process that equips RSS citizens with 21st century skills that will enable them to be productive citizens of the world.

In RSS, it will take many decades to improve the existing public school system to an acceptable level, if we follow the traditional orthodox school improvement model/s. As a conclusive argument and suggestion, the most relevant strategies could be to exploit the opportunities of new technologies, particularly the mobile phone, to make learning possible in new ways. In that way, RSS will be teaching today's students for tomorrow and not yesterday (according to Dewey). This will entail RSS adopting the policy of "*Going beyond Education for All* to *Education Above All"* as recommended by Professor Emeritus Pai Obanya.

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