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Policy Paper

Integrating ICT in Zambian High Schools

I. Background

Zambia, a nation in Southern Africa with an area of 752 614 square kilometers and a population of 10.3 million, is one of the developing countries in Africa which took on the project of developing “Strategic Framework for the Implementation of Education For All (EFA)” policy¹. The motivation behind Education For All (EFA) policy, according to the document produced by the *Zambian Education Ministries* in May 2005, is primarily derived from the Universal Declaration of Human Rights (1948) which states that: “everyone has the right to education.”² The problem with the current educational policy, in the case of Zambia, is mainly due to:

1. the lack of textbooks, equipment and laboratory infrastructure.
2. problems in information sharing and its flow within the system.
3. poor quality of learning, fewer classroom places and learning hours.³

These three problems were mentioned in the document as the main challenges the Zambian education system is facing. In this paper, I am mainly interested in addressing the role of Information and Communication Technology (ICT) in addressing some of these issues. The education system in Zambia is designed as a tool to alleviate poverty and minimize educational disparities between rural and urban areas as well as to achieve increased enrollment of girls in school. Therefore, I will also address the role of ICT in addressing gender disparities and achievement gap between rural and urban school systems. In particular, I believe that connecting public high schools to internet is step forward in bringing Zambia closer to achieving its goal of improving the quality of education in public schools.

ICT Profile

Internet access in Zambia is provided by a number Internet Service Providers (ISPs) including Zamtel which provides its customers of about 5000 connection via dial-up. The company also provides broadband connection at a charge of \$25-35 per month.⁴ Other ISP providers include Coppernet and UUNET with strong financial backing from international corporations. There are a number of Internet cafés in Zambia, several in Lusaka, Livingstone and Ndola, and also in the smaller towns. However, the cost of bandwidth remains very high and the speed of connection is 128 kbps in most of these cafes.⁵

¹Ministries of Education, “Strategic Framework for the Implementation of Education for all”, May 2005.
<http://portal.unesco.org/education/en/file_download.php/93fcf7a8dc4f26a3555fc25d47736b2cEFAStraZAM.pdf>

² Ibid

³ Ibid

⁴ Esselaar et al, “A Country ICT Survey for Zambia”, November 2002.

⁵ Ibid

Secondary Education in Zambia

Zambia will be facing an increased enrollment of students in high schools thus increasing the demand for high schools teachers. Enrolment for high schools is projected to increase from 161,281 in 2008 to 578,654 in 2015.⁶ With an increased enrollment also comes the burden of providing additional educational resources (such as teaching aids, more schools, books, etc) and the need for additional high schools.

In addition, the pupil/teacher ratio for grades 1 to 7 was projected to be 52:1 by 2015 with 17 percent of the teachers teaching double shifts; for Grade 8 to 9 pupil/teacher ratios will be 35:1 by 2015 while the secondary school pupil/teacher ratio will be 28:1 by 2015. The Zambian government thus must look at alternatives to adapt a more efficient education system to cope with increasing cost of secondary education and increasing student to teacher ratio.

Uses of Internet in High Schools

The primary goal of providing internet access to Secondary Schools is to introduce innovative teaching approaches and provides teachers flexibility in developing their own teaching approaches. Having internet in high schools would also enable teachers to create instructional material online and access model teaching plans online. Table 1 illustrates how internet is used in most American Public Schools. Thus, a similar approach in Zambia, if successfully implemented, would greatly enhance the quality of the teaching process.

In Zambian high schools, an additional benefit of incorporating ICT in schools is to bridge achievement gap between rural and urban high schools on national exams. Putting educational material on compact CDs and distributing them to rural schools, which lack the necessary resources, is also an option in the presence of computers. In rural areas where electricity is unavailable, the alternative is to work jointly with internet café owners in the nearby towns to make arrangement for students to use the café's internet service.

⁶ Ministries of Education, p.63

The current system is also believed to come short of preparing students for employment opportunities. Furthermore, in today's global world, a child needs to not only receive an education relevant to his/her own environment but also he/she needs to gain a proper skill that would enable him/her compete in the global world. Thus a curriculum which integrates ICT is suited to fulfilling such goals.

Implementation of the program

Integrating ICT into the educational system of Zambia requires financial and human resource investment. In addition, the cost of implementation of technologies and the expansion of existing infrastructures, such as internet service and electricity, should not be overlooked. However, countries such as Jamaica were able to overcome these obstacles and install computers in all of their secondary schools with access to internet⁷. Considering the similarity of the projects, the project in Zambia can also be implemented effectively with proper planning and management.

Because of the cost involved and lack of human resource, the implementation phase of the project will require a planning. The most cost effective approach is to pick representative high schools, from various regions of Zambia, and develop a pilot program to study the feasibility of the program. The first step is to prepare a workable plan which includes the number of pilot programs, number of students participating, cost of the pilot program and as well as have a system in place for measuring the success or failure of the program. Once a complete proposal is adapted, the next step will be to look for funding sources which might include international donor organizations. A collaborative effort, between the body in charge of the pilot project and higher institutions such as the University of Zambia, and other Multinational Universities/Colleges, would greatly contribute to the success of the project.

Teachers in charge of the pilot program can be trained to oversee the pilot project. A better option is to involve students from University of Zambia or foreign Universities to overlook the progress of the project. Not only will this approach introduce students to new and innovative learning approach but it will also enable policy makers explore what is working and what is not.

⁷Wagner et al., "Monitoring and Evaluation of ICT in Education Projects," 2005
<http://www.infodev.org/files/2942_file_M_E_ICT_Education_draft_WSIS_optimized.pdf>

Challenge

In executing this project, the main problems that would quickly hinder the progress or success of the project are financial constraints, lack of trained experts and absence of basic infrastructure to provide such a service. If the initial phase of the project is successful, expanding the project to various regions and providing the schools with appropriate teaching material will also be a challenge. The sustainability of the project depends on the long term commitment of the government as well as a continuous funding for the project by either the government or donor organizations. In the long run, upgrading in to new computers as well as training experts who can troubleshoot problems with internet connections will also be problematic in case insufficient funding.

Alternatives in Case of Failure

In case the pilot project does not succeed, problems with the project should be well understood. The outcome of the pilot study should not only suggest future actions for policy makers but it should also speculate whether the idea itself is feasible to be implemented in Zambia given the country's limited resources. If the project does not succeed for lack of adequate funding, trained experts or lack of infrastructure, the government should revise its policy primarily by encouraging the private sector to invest in the development of new infrastructures. Many developing nations have emphasized investment in ICT as a key policy intervention not only to improve the IT infrastructure but also to fight poverty. Similar policy measures would also work if the government implements and uses ICT to reduce poverty and fulfill its commitment of "Education For All" initiative.

Conclusion

Education policy in Zambia currently overlooks the role of ICT in improving the quality of education. To meet its commitment of achieving the "Education For ALL" initiative, the government of Zambia should also explore the option of integrating ICT into the public school system in order to foster innovative teaching approaches. Providing high schools with internet access not only improves the learning process but also enables the Zambian government to overcome some of the difficulties it's facing with the current education policy. In particular, ICT will improve the quality of information sharing between various stake holders and at the same time minimize the poor learning condition currently in places. ICT would serve as tool to bridge the achievement gap between urban and rural public schools by enhancing the communication system between the two regions, and by enabling a better distribution of educational resources.

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