Theme: Children and Young People

"Leveraging appropriate technologies in ODL for young people to take advantage of educational opportunities": The National Open School of Trinidad and Tobago (NOSTT) experience

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Introduction

A dilemma exists for those of us who understand the impact that technology can have on the access and exposure to educational opportunities and the individual needs and experience of our clients in ODL. On the one hand is the suggested use of high-end or new technologies –ipods, lap-tops, DVD players, learning management systems, digital cameras, multi-media projectors, computer labs etc. Such technologies are difficult to obtain by our 'post-school' population, 'at-risk' groups in society, the socially displaced and the physically challenged. On the other hand is the use of wide-spread low-cost, low-end technologies such as the radio, television tape recorders and overhead projectors which can provide exciting and rewarding educational experiences to learners who need to learn, and who, because of their unique circumstances; (poor, live in rural communities, without basic amenities etc.) cannot wait on the high technologies. They need to get the education they require now.

In addition, the cost and sustainability of high-end technologies for ODL are very high when compared to traditional technologies such as radio and television. The cost of Internet connectivity continue to be challenge (especially rural areas) or environments in Trinidad and Tobago where there is no electricity or an irregular supply; where there is problematic or no telephone service and hence no internet connectivity-wired or wireless; where there exist no proper community or school buildings; where, even if hardware is supplied, there are significant problems for maintenance of such systems and where the social and community structures(education not seen as a priority) which exist in such areas impact negatively on both traditional and ODL intervention strategies used in the provision of education .

 An attempt to bridge the gap which exist between the need for technology intervention in education and the existing or available technologies in rural areas- the radio, the tape recorder and the television. The National Open School of Trinidad and Tobago (NOSTT) has, over the past nine months provide an open and distance approach to education which offers maximum flexibility to 'post-school' learners in the first instance. This blended approach in ODL delivery involves the use of text books, lesson summaries and face-to-face delivery together with self-study material. Low-end technologies- the cell phone, the MP3 together with the available technologies- the radio and television are also been

to used for expanded access and educational opportunities for young people living in rural areas, especially boys.

Context

A snapshot of the Young People of Trinidad and Tobago would reveal that a substantial number of them are underachievers –meaning that they leave secondary school without a full Caribbean Examination Council (CXC) certificate- (over 65% based on the CXC results especially in Mathematics and English). There is a national problem with regard to high achievement in the English, Mathematics and Science and hence the results of performance in these subjects are bellow the national standard required. There is a general underperformance by boys generally; girls are outperforming boys in both secondary and tertiary sectors of the education system. A substantial number of students are finding it difficult to adjust to the rigors of the traditional/conventional approaches to content delivery at our secondary schools and hence there is the need for different approaches to the delivery of educational content.

More significantly, the inflexibility of the traditional education sector in meeting the diverse needs of the learners makes it imperative for more flexible approaches to content delivery and for the use of technology in the education transactions.

The National Open School of Trinidad and Tobago (NOSTT) as it attempts to re-define and improve the delivery of content to learners, especially those in the non-traditional sector –the out-of-school population, school drop-outs, at-risk groups, young mothers, the incarcerated youth and those young people, who wish to pursue life-long learning; must do so using a technological platform. NOSTT seeks to achieve this by the ensuring that these major distinctive features are applicable to its programmes:

- Taking education to disadvantaged populations.
- Providing a choice to learners for what they want to learn.
- Providing education to second-chance learners.
- Providing a safety net for school drop-outs.
- Providing education to those who cannot attend conventional schools for a variety of social and economic reasons.

In attempting to implement the use of technology since its inception of its programmes in Mathematics and English in 2007 NOSTT has had to face the following challenges:

The absence of an information infrastructure platform at the NOSTT Centres (secondary schools);

The absence or unreliability of internet bandwidth at its nine centres at this time; Institutional problems/issues in the procurement of hardware for the NOSTT Office and NOSTT Centres.

In leveraging technologies for its clients in its first iteration, therefore, NOSTT has had to focus on low-end technologies to achieve its mandate in providing subject-content and instruction by using the follow mechanisms:

- Technology- Google, Free resources, messages and alerts
- Communication –email
- Acess- CD Roms-content on website –learning resources
- Learner Support-cell phones
- Management/Administration-Data-base
- Marketing-MOE website/NOSTT virtual space, radio advertisement

In the third quarter of 2008, there is the intention to collaborate with an ICT partner and other educational institutions in specific projects e.g. the an e-bookbag project involving the use of cellphone as a medium for instruction, information and communication between learners and their tutors and between the NOSTT headoffice and all tutor and learners of NOSTT.

Technology
The original goal of providing each NOSTT learner with a computer did not materialize in 2007 and as a first step, each was provided with a Google g-mail account. This has allowed communication between learners and tutors and NOSTT support staff to a limited extent.. In 2008 the intention is to place on-line resources and critical messages and alerts from the NOSTT headquarters to learners email as the process of developing an intranet for NOSTT continues. NOSTT will also have to find ways to encourage greater use of this feature by tutors and learners in 2008 and beyond. This is achievable because of the major project been undertaken by the Government of Trinidad and Tobago of equipping all schools, both Primary and Secondary with computer labs and high-speed internet connection.

It is also NOSTT's intention to introduce a Learning Management System (LMS) Moodle to host curriculum content and other resources-(the provision of lesson-summaries and worked examples in CXC Mathematics and English for learners and tutors).

Communication.
Extensive use has been made of email by our tutors and learners in the first iteration of classes undertaken by NOSTT. This system seemed to have worked reasonable well between the NOSTT headquarters and the tutors/course-writers. However, the use of cell phones was funded by the individuals themselves and not by NOSTT. In is the intention in 2008 to issue all NOSTT personnel, including its learners with a cell and phone card (with a monthly dollar-value).

As the national network infrastructure is developed in 2008, the development of a NOSTT space on the Ministry of Education's website and the development of the NOSTT website/intranet are planned. These would provide increase avenues of communication among the learners, tutors and NOSTT Learner-support staff using the

features of the e-mail groups-e.g. email groups. Greater use is to be made of the email to put resources e.g., solutions to questions, on-line resources and encourage collaboration among learners.

Access
One the major challenges of NOSTT in its first period of operation is in the provision of access to its clients. The fact that in the nine centres in operation at this time there has been no educational transactions taking place in computer labs or in classrooms with computers and internet access vividly demonstrates the deficiency in the availability this technology at this time. As access to computers and internet communication are radically improved as the computer labs rollout now taking place in the primary and secondary sectors continues, the second phase of NOSTT tutoring (which starts in April,2008) would involve ICT education.

In this phase learners would be exposed to ICT classes such as. The International Computer Drivers license and the Cisco Academy Computer Networking One (Cisco classes starts at the end of April, 2008).
In the mean time a Compilation CD of subject content and educational resources have been developed and distributed to our learners. This is to augment the content delivered in face-to-face sessions.

Learner Support
This is a major pillar of NOSTT and in the absence of use of higher-end technologies; cell phones have become a principal and ubiquitous means of communication among our young people. Above average use of cell phones was registered in Trinidad and Tobago in the past two years because of the decrease in cell phone rates as the tele-communication market place has been opened up in the country.

The original concept of giving each of our tutors and learners a cellphone for out-of-class/learner support communication was informally implemented but not sustainable since the cost of such calls:- tutor to tutor, tutor to learner and tutor to NOSTT office could not be officially charged to the Ministry of Education.. Tutors, in all instances of cell phone communication with learners used their own cell phone and it is to their credit that they continue to do so throughout the first cycle at their own expense.

 In 2008 the intention is to encourage the use of cell phone as a tool in classroom transaction between learner and tutor. A system of cell phones and pre-paid cards would be issued to all NOSTT learners. Each Centre Coordinator and tutor of NOSTT is to be issued with a cell phone. It is envisage that these phones will be used for calling/texting messages, alerts, questions, solutions to problems, clarifications etc. when learners are a not face-to-face with their tutors.

The majority of our learners do not possess computers at this time and consequently, computer mediated activity would be restricted to the classroom/computer labs. Where

internet cafes can be accessed, learners can do so at there own expense. As the ICT systems rollout continues, computer labs and other equipment such as multi-media projectors, electronic white boards, digital and video cameras will provide NOSTT with opportunities to enhance technology integration with our learners.

A memorandum of agreement and modes of operation /utilization of these facilities would soon be worked out between the Ministry of Education stakeholder representatives and NOSTT so as to initiate the use of these facilities in our September 2008 cycle of NOSTT programmes.

Management/Administration.

The management of NOSTT, given its staffing requirements s is severely handicapped even as mechanisms for new staff are already activated. As we continue to service our nine centres and expand to open up another twenty (20) centres with four thousand five hundred (4500) learners in this financial year; it is absolutely critical to conceptualize, build and implement a data-base to intelligently manage our operations. This process has already started in-house where the first iteration of the data-base is been developed.

Marketing

The success of this new approach to education, if it is to meet its targeted audience must be marketed. One of the interesting experiences of NOSTT in this area was the massive and unexpected responses received from mature citizens who wished to access the programme when the first set of newspaper and radio advertisements were aired in September of 2007. Clearly, there is a market for NOSTT and it extended beyond the original cohort- young 'post-secondary' school-leavers. Yet we know from the learners in our pilot, that there exists a large pool of school-leavers who require mathematics and English to complete their CXC certification. NOSTT therefore, must continue to provide a second chance for such individuals and is committed to doing so.

The marketing thrust now focuses on the use of the Ministry of Education's website (http://www.moe.govt.tt) which contains a space for Distance Education and the creation of a NOSTT virtual space. On this space would be placed a range of on-line resources, information and course content to be access and used by NOSTT learners. It is also expected that collaborative mechanisms such as online-groups, email, chat, blogs and other new social technologies would be used to encourage and motivate young people to pursue their education by first accessing and exploring these spaces and then registering for NOSTT courses.

Lessons Learned

Thus, in the first cycle of NOSTT- from June 2007 to January 2008 where young people participated in first pilot of CXC Mathematics and English for CXC; the following "lessons learned" observations can be noted:

In building a new or different system for education transaction as flexible, open and distance learning, institutional support is fundamental. Where the unit or division is not independent and does not control its budget and is therefore not a 'line-item' for annual

/budgetary expenditure; it becomes very difficult to procure even simple equipment-e.g. pendrives, for use as part of the diffusion of technology into the system.

The Strategic thinkers/administrators of a conservative institution such as education must be willing to be informed and conscious enough to embrace the new ways of performing traditional tasks in education and be prepared to explore with, and on behalf of our young people; their world, their environment, their issues and perhaps allow for more transformation of the teaching /learning didactic.

Young people are different in thinking, attitude and aptitude towards education. They are multi-skilled and strategic learners and therefore require new, multi-faceted approaches to the classroom transaction. Technology, together with open and flexible learning provides a platform of transition and change in educational delivery, allowing open access, flexible learning and collaboration and sharing among participants from different geographical areas and cultures.

Without the institutional support, understanding and systemic framework to allow for the Open School System to flourish it becomes extremely difficult to achieve the laudable goals we seek:-equal access, a second chance, technology mediated engagement etc. NOSTT/Open School must become a priority area in education in Trinidad and Tobago. It must be on the front burner of educational innovation, reform and development.

NOSTT, as it seeks to help transform the approach to learning has also to be realistic in its approach to Distance Education. We have to allow opportunities for our young people to explore the low-end technologies as a learning tool, in addition to the normal social usage that is normally associated with such devices.

Projects such as Cyberfair and Photo-Connect (these projects involve the use of digital cameras and the internet by students to do research and publish their findings on their own schools' websites) have been used in the past year to demonstrate that the computer, the internet, the digital carmera and digital video-camera can be used for education in a very non-evasive and entertaining way. These efforts continue and would be part of the second cycle of NOSTT as it seeks to promote the use of technology in life-long learning.

A series of training workshops to help improve the skills of the NOSTT tutors in the modes of Open, Flexible and Distance Education and in the use of low-end technologies- the MP3, the multi-media and laptop, the electronic white board and cell phones must be a priority in our second cycle. More of these types of exposure to technology are needed to help build the confidence of our tutors to seamlessly use technology as part of the normal transaction with learners.

In spite of the massive investment in the ICT infra-structure in hardware and the setting up of computer labs in our secondary schools; there has to be a rethinking by the Education Administration of the level of use made of this infra-structure. If young people are to use this space without fear, then there has to be a balance between the rules of

operation of the labs as established by the policies of the Ministry and young peoples' need to explore and innovate using the equipment.

Rules of engagement must be worked out to allow learners to access these facilities beyond normal school hours and on weekends. Since NOSTT programmes are been offered only at secondary schools at this time; until the details of such accommodation are worked out between the school's administration, other stakeholders and NOSTT; only the designated, two-hour sessions per week in traditional classrooms can take place, as have indeed been operating in the first cycle of teaching. This must impact negatively on the use of the technology especially where most of our learners do not own computer systems, digital cameras etc. at this time.

It is critical that efforts be made to ensure that the relationship with the secondary schools which facilitate the NOSTT programmes be so formalized and supported by the Ministry of Education that school principals/administrators are be encouraged to open the computers/multi-media labs to NOSTT learners.

Conclusion
In our attempt to provide new and interesting avenues for young people to use technology as part of their educational transaction, NOSTT conceptualized and formulated a number of initiatives using ICT. This was in keeping with the Government of Trinidad and Tobago 2020 Vision of transforming the nation to Developed Nation Status by the year 2020.This Vision placed emphasis on ensuring that our young people are exposed and trained in ICT. Our original proposal included a laptop computer for every NOSTT tutor and learner where free internet access would have been paid for everyone by the Ministry.

The proposal also included a hardware storage/information infrastructure consisting of servers, switches and routers based on T1/boardband internet connection from the ISP to the Distance Education Unit headquarters and to our NOSTT Centres. This infrastructure also included telephone communications and a help desk to facilitate 24/7 help to our clients. There was of course procurement, implementation, monitoring and accountability, administration and cost considerations as there were also human resource issues. It is critical to emphasis here that this is part of a national vision and consequently, one should assume that given the national political agenda and high priority given by the political directorate, the line Ministry should have no difficulty in providing resources and implementing projects which would achieve this national agenda; However, this was not the case.

To ensure that the Distance Education Unit carried out its mandate of providing open and flexible learning to meet the demands of young people, a transition of ideas from high end technology to low-end technology was made and as our first cycle started in June 2007, the emphasis was placed on print, since this was the most cost effective and immediate technology that was available to give our learners.

The blended approach was used where two two-hour sessions per week in CXC Mathematics and English were implemented at times negotiated between the learners and their tutors. Tutors/learners used their cell phones to communicate; lesson summaries and texts books in each subject area were loaned to the learners, email communication was used to provide templates and content and to send summaries to NOSTT headquarters. On-line resources were provided on the Ministry's website for learners to use. ICT training is been organized for those learners who have completed the first cycle and these is expected to state in April, 2008.

This experience from an ICT prospective in demonstrating to use of technology in an open and flexible distance learning environment has revealed that the following

1. There has to be more and immediate consideration to our out-f-school population by the Ministry of Education in the Distance Education Context.
2. Our strategic thinkers and decision makers in the Ministry must come to the realization of the value and cost-effectiveness ODL as a viable alternative of providing education to young people.
3. That is spite of the negative (and the most publicized) uses of technology-even low end technology as the cell phone, the educational and research literature continue to demonstrate how effective and efficient these tools are in reaching and providing opportunities for young people to learn and to take control of their learning.
4. The support for the maturing of the NOSTT system must first come from other 'Ministry of Education' stakeholder Units/Divisions and then from other stakeholders; because, even if other stakeholders wish to join with NOSTT to initiate innovative projects, institutional support and approvals must come form within the Ministry..
5. That our young people are willing, ready and able to explore new approaches to learning. They require our understanding and an approach which provides maximum flexibility and which must be rooted in technology –even the low-end simple ones-print, internet, cell phones, MP3/4s, television and radio
6. NOSTT biggest challenge as a provider of ODL in Trinidad and Tobago is in ensuring that we provide an Information Infra-structure platform which demonstrates such an enabling technology environment where our clients-the learners, can really enjoy their learning.