

## **THE CONNECTED LEARNING COMMUNITY IN SOUTH AFRICA: A CLASSIC CASE FOR OPEN LEARNING**

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### **THE CONNECTED LEARNING COMMUNITY**

#### **Introduction**

Is it technologically possible to teach more students with fewer teachers while improving on the quality of the education material and ultimately the final outcomes?

This appeared to be a pipe dream for the educational leaders of St Alban's College in the early 1990s. As part of their social responsibility students were smuggled out of Mamelodi, a township on the outskirts of Pretoria, to attend classes at the College during the height of the political riots in the 1980s. These efforts were to ensure that some students benefited from the resources that were available at the time. The visionaries at the College were driven by the need to make significant contributions to the ever-growing educational crisis looming in South Africa. It was not cost effective to bus learners to the College to gain access to such technological systems such as Plato and Sergo, and to be exposed to elementary Information Technology (IT).

In the search for a solution, the College experimented with a number of systems but all fell short of being able to deliver quality curriculum to the learners in the most cost-effective manner. In many respects the problems may have in fact been more fundamental than the hardware and software issues. The solution may have in fact been the necessity to change the mindset of the teachers into realizing that they could provide the solution. Technological solutions were available, yet even they were not perfect, and yet the staff and pupils did not universally adopt them.

The greatest dilemma facing all educational authorities today is developing the paradigms of teaching and learning to prepare students for a high-tech society while using low educational methodologies and technologies. With the rapid advances in technology there is very little that cannot be achieved today. Yes, the bottom line still remains the availability of funds in most cases - but the old saying that it cannot be achieved because of the hardware constraints no longer applies. The biggest stumbling block in the implementation of any technological solution is not based on the hardware or software issues but rather on the warmware issues. This refers specifically to the warm bodies that are associated with any project.

In searching for a solution to addressing some of the educational problems, it was important that the College established a firm pedagogical perspective of the situation. This meant that the College had to be prepared to take the calculated risk of challenging traditional methodologies by experimenting with new approaches. The arrival of web based technologies helped to facilitate this process and for once teachers and learners were able to share a common denominator. The majorities of learners became totally switched on to this new tool and were willing to become more active in their own learning. More and more lessons are involving computers, online systems, video cameras, multimedia, and simulation tools to support students' activities. The biggest change from the traditional classroom is the underlying perspective about how children learn.

This new approach will serve as the basis for the introduction of the Connected Learning Community at St Alban's College. Microsoft's vision for the role of technology in education is "a linked educational environment in which network connections allow dynamic interaction between colleges and universities, other educational institutions, homes and information resources throughout the world", according to Mark East of Microsoft, United Kingdom.

"The basic aim of this project is to strive to transform the educational process from an instructional model to a learning model while using technology as the vehicle of change." (Boggs) "However, technology is only the vehicle that we may ride as we work to engage more children in the process of the life-enhancing experience of learning. We will drive along a road that is paved by our public collective will to build a modern, equitable, effective education system" (Jossey-Bass p31)

In striving to achieve a more learner-centred approach it is critical that the issues associated with open learning are also taken into consideration for this is where the market forces in education are creating the greatest demands.

“Open learning and flexible learning both refer to the ability of the learner to make choices about the way in which learning takes place. Flexible delivery is the term used when considering all this from the point of view of the educational institution, whose job is to provide its programs in ways which will suit the needs of its learners. The educational sectors have tended to adopt one or other of these terms, but we believe that the terms and concepts have relevance across the whole of education.

The concept of openness or flexibility can be represented as a continuum. The traditional view of education, in which the learner is expected to learn when, where, what and how the educational institution decides, falls at one end, the less flexible end, of the continuum. At the other end is open or flexible learning, where the learner can make choices about these matters. In fact, of course, good teachers have always had a flexible attitude towards their students and their teaching.

It is a mistake to think that the open end of the continuum is 'good' and the closed end is 'bad'. The most successful learning occurs at a point somewhere along the continuum that is determined by the nature and circumstances of the learner. This is because all of us like to make some choices in our lives, but all (or most) of us also need some external framework.”

(Victoria Open Learning Network : Open Learning, Flexible Learning and Flexible Delivery: What Are They?)

The College has been operating very much at the closed end of the continuum and is now striving to make the transition to the open end with learners becoming more multi-skilled. The way in which this will be achieved will entail changing the mindset of the whole College, from the chairman of council, to the principal, down to the educators at the (electronic) chalk-face, pupils and parents. Technology will certainly make a significant contribution to the process but the biggest asset to the project is undoubtedly the staff for without their expertise, such a project cannot succeed.

### **History set in a curriculum audit**

The seeds for this project were sown some seven years ago when the College established a multi-million Rand high-tech computer centre. Teachers and students were challenged to look at education in new ways and to experiment with innovative approaches using technology. A full curriculum audit was conducted in 1994 to establish a precise point of departure for an educational reform process. This led to the introduction of a number of new courses, which challenged students to acquire such skills as lateral and creative thinking, problem solving, and collaboration with members of a team, and many others. Full courses such as the River of Knowledge (a cross-curricular subject linking Biology and Geography), Design and Technology, Art and Business Skills were introduced. A number of modular courses were also introduced such as Gases, Health, the History of Time and Life Skills. These courses and modules were designed to address the lack of essential skills identified in the curriculum audit.

The College spent an enormous amount of time and resources searching for a system which could manage this ever-growing curriculum content and to manage the learning process, the basic premise being that more students could be exposed to a high quality curriculum at a lower price. This would mean that the same educational material could be made available to students in a distance education mode via dial-up systems. The same system could be used to teach pupils in such areas as Mamelodi more cost effectively than bussing the students to the College.

In the search for a solution, proprietary systems proved too costly, were not-user friendly, were not able to distribute multimedia, or had limited interactivity. The introduction of the internet provided the ideal platform to overcome all previous problems encountered. The visionaries at the College saw the potential of the system and actively sought funding to pursue the ideal of developing interactive, multimedia curricula which would be placed in the public domain. Funds were made available via the World Bank and the IDRC to develop a Standard Seven Biology Curriculum, which was based on a national core curriculum of the Independent

Examinations Board. This project was termed TECSAS (Technology Education Curriculum for South African Schools) and was to serve as an enabling project. The curriculum material is available at <http://www.stalban.pta.school.za>.

This approach to education sparked off a number of other smaller initiatives within the College, which questioned the educational paradigms that were being employed. Was it possible to teach more learners with fewer teachers while improving on the final outcomes of the process? What new methodologies and technologies would be needed to achieve this? What skills would students need to have in their tool bag for life if they are to enter a rapidly changing world?

The project is not an entirely new concept. The original concept stems from a partnership between Highdown High in Berkshire, Microsoft and a number of local businesses involved in Information Communication Technologies (ICT). (<http://194.168.36.10>) The partnership relationship can best be understood using a plumbing model analogy. This implies that certain partners will focus on the laying down of the pipelines, others will focus on the development of content to be delivered through the pipes. Others will focus on the training of people to open and close the taps as well as what to do with the water once it leaves the taps. The water must be accessible twenty four hours a day.

In search for solutions the College established a partnership with Microsoft, the Council for Scientific and Industrial Research (CSIR) and Dimension Data (DiData). The outcome of this partnership was the development a project which was referred to as the Connected Learning Community (CLC). In essence the project is the precursor to a virtual on-line school which aims to challenge existing educational models. In order to achieve this, unique opportunities for educators and learners to interact will be encouraged in a more open-ended and dynamic manner using new methodologies and technology, restructuring of timetabling, development of new curricula material and the introduction of laptops in some classes.

### **Aims and Outcomes**

The aims of the project are to demonstrate that :-

1. learning can be extended beyond the walls of the classroom by providing access to information twenty four hours a day.
2. pupils can be enabled to work on networked facilities from school and from home to improve their literacy and numeracy
3. students can work effectively without teacher supervision if they are given greater responsibility for their own learning.
4. cost savings can be made to an institutional budget by reducing the major cost of teacher's salaries through innovative time-tabling and the introduction of new methodologies and technologies
5. reduction in teacher-student contact time coupled to the introduction of innovative time-tabling and methodologies can lead to an improved educational outcome over an extended period of time
6. the introduction of laptops can enhance the concept of anytime-anywhere learning
7. parents can access general school information, send messages to the College and participate more fully in the daily program at the College
8. it is possible to share the information stored on an information hub with local communities as part of an outreach program
9. it is more cost effective to teach students in outreach communities rather than bussing them to the College while improving on the output
10. students and teachers will be expected to take risks
11. educators will be required to reevaluate the didactic issues and to expand their ideas of how students learn best.

As has been mentioned before, the ultimate goal of this project is to develop an open learning system that caters more for the needs of the learner. The development of a growing educational pool of digital resources will allow learners greater opportunities to enter and leave the system as and when they please without compromising on educational standards.

### **Key Issues**

The whole project is based on three pillars, namely Connectivity, Learning and the Community. Each of these

will have to be expanded upon in order to make sense of the whole project.

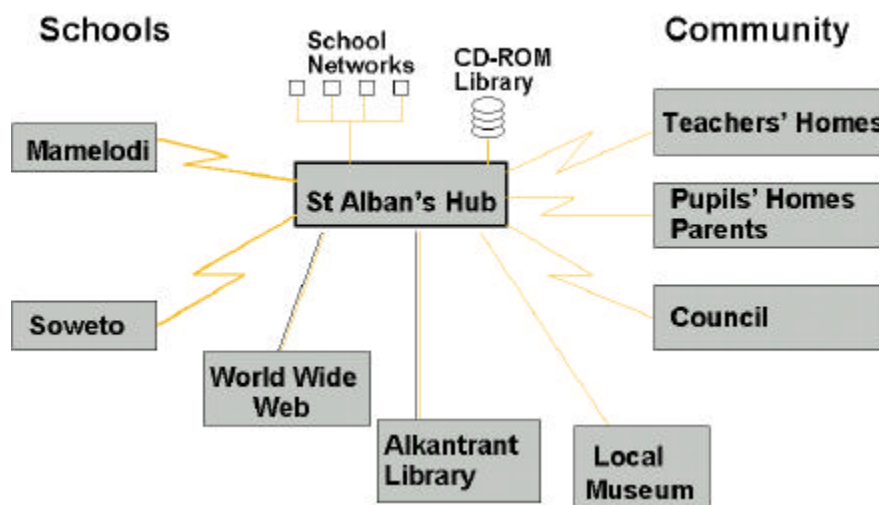
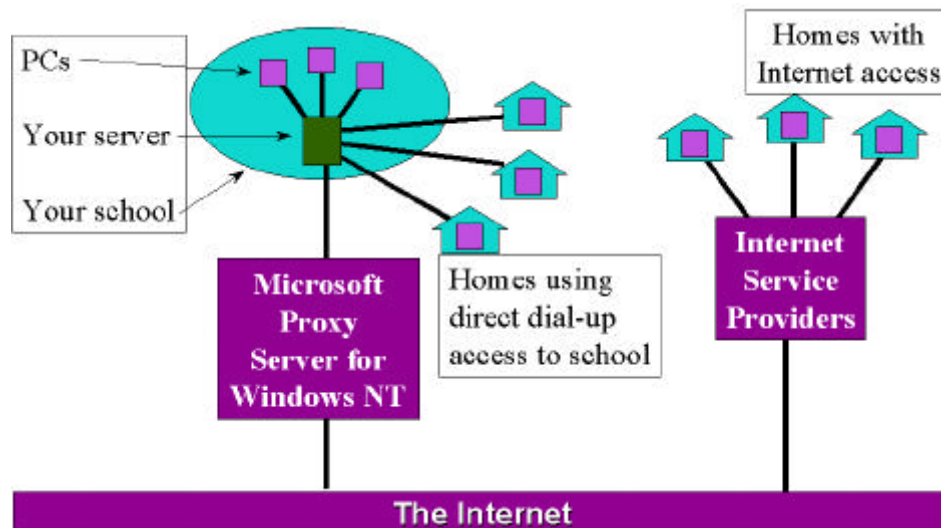


Diagram 1  
*The essential components of the Connected Learning Community Infrastructure*

**Connectivity**

Physical connectivity in this project implies that the pupils, parents and teachers will be connected either via an Internet Service Provider (ISP) or have direct access via a dial up facility to the St Alban's College Information Hub housed on an Intranet. Connectivity is not a major issue in terms of this paper as plans are in place to provide an NT Server that will meet the needs of web interactivity between all the parties concerned

Diagram 2  
*A possible connectivity scenario*



**Learning**

"The overall aim of any education system is to aid and assist learners in the process of constructing meaning, to help learners make sense of their surroundings, and to equip them with the tools to continue to do so long after the process of formal education." (Graff)

Boyett looks at the implications of a changing workplace on education where lifelong learning will become the norm and educational institutions will become swamped. This will lead to an overwhelming of our traditional instructional systems and methods, requiring technology to play an increasingly important role in the delivery of

education. As schools assimilate new technology, the delivery of education at all levels will become less-labor intensive and more capital intensive. Most education resources will no longer be devoted to salaries, but instead to software, computers, multimedia equipment, and so on. Info-com-technology will, among other things, free educational institutions from their current geographical boundaries. He emphasizes the importance of knowledge entrepreneurs and pedagogical info-preneurship and students having a limitless variety of courses to choose from.

In essence, learners will need to acquire skills to be able to collaborate, communicate, evaluate, disseminate, apply lateral thinking, problem solving, and a host of other skills in order to succeed in a future world. One of the ultimate goals of introducing technology into the classrooms, especially information communication technologies, is to initiate students into becoming global citizens who are familiar with modern trends, especially in the use of such tools as the Internet and e-mail.

Phil Christenson, an educational consultant, recognizes the need for a "mass quality education system" but at the same time warns of merely introducing a system that will perpetuate an old paradigm of education. South Africa has emerged from the dark years with an archaic behaviouristic education system that was designed to reward only those students who could memorize the right facts to match the examiners memorandum. Even teachers were indoctrinated into believing that they were the only sources of knowledge, which perpetuated a system of feeding a governmental system with people who were not allowed to think for themselves.

There is a huge need to introduce a paradigm shift from one of instruction to one of learning as proposed by Boggs. This notion was also echoed in the middle of Mamelodi, a township on the outskirts of Pretoria, where students had posted a sign on the notice board - DON'T TEACH US, HELP US TO LEARN! These are very thought provoking words as they highlight the predicament that many students in previously disadvantaged communities find themselves in. The basic premise of the learning paradigm, as described by Boggs, is that the students are given greater responsibility for their own learning.

This should be embedded in a commitment to a flexible, learner-orientated approach that uses whatever combinations of strategies are appropriate to the needs, demands and circumstances of learners, education and training providers, interest groups from the community, industry and government.

This approach to education can also be encapsulated in a model, which I term the business model of education. By changing to a business focus, the client, namely the learner, is placed at the centre of all activities and all associated systems are there to ensure that the learner is given greater priority. In such a model, the teacher in the classroom will be assessed on how effective they are in meeting the needs of the client they are attending to. This implies that the institution must develop strategies for establishing the learning environment in such a way as to support the learner. It should not matter whether these strategies are old or new, distance education or face-to-face, using 'high' technology, 'low' technology or no technology. It is, however, essential that they are appropriate and will achieve meaningful outcomes effectively and efficiently in identified circumstances.

“When thinking about open learning, it is easy to assume that independent learning is the best way, and indeed it is a part of the empowerment that comes with taking responsibility for one's own actions. But not all learners enter education or training fully equipped with independent learning skills, and such an assumption can lead to learning failure rather than learning success. For school-age learners, or for those with low confidence in their learning ability, it may be best to start with a structured, teacher-centred setting, and progress gradually to more independent methods, making the development of independent learning skills part of the program.”

(Victoria Open Learning Network : The needs of Learners in Open Learning.)

Coupled to this is the powerful concept of peer learning. The teacher does not always have to be the source of all knowledge. Learners themselves can often teach each other more effectively than the teachers, especially where they work in groups on a common project or problem. This brings me to one of the most important points in teaching and learning. Teaching and learning is a human endeavour, a group sport. Learning cannot take place without human intervention and participation.

The process of learning in the classroom can become significantly richer as students have access to new and different types of information, can manipulate it through the use of technology in ways never before possible, and can communicate their results and conclusions by means of a variety of media to their teacher, students in

the next class, or students around the world. Properly used, technology increases students' learning opportunities, motivation and achievement; it helps students to acquire skills that are rapidly becoming essential in the workplace, and it breaks the barriers of time and place, enabling students in any community, no matter how remote or impoverished, to have access to high quality instruction. This poses a huge challenge on technologists to provide these opportunities to learners in every corner of the globe.

To excel, students now must master an impressive new array of technology-driven skills. At the same time they will need the skills to evaluate and organize vast amounts of information. The usual barriers of time, distance, convenience and access diminish as the project reaches its full potential where every learner at the College has access to technology 24 hours a day, seven days a week. This may even include many students from around the country and even beyond the borders who will be able to subscribe to a virtual school campus.

Creative thinking enable barriers presented by geographical isolation, work and family constraints, disabilities, language problems, cultural expectations or low confidence to be overcome. It can enable learners to gain access to programs offered by providers that would otherwise be inaccessible to them, for geographical or other reasons. It also enables providers to broaden their range offerings by taking advantage of technological opportunities to share expertise and learning resources. In so doing, the economic agendas of industry and government may also be satisfied in that groups of learners who previously had inadequate access to education and training may become skilled and marketable assets in the national economy. (Victoria Open Learning Network : The needs of Learners in Open Learning.)

The tools of the information age provide the capacity to establish unparalleled patterns of interactivity among individuals (Norris)

Technology in the classroom clearly warrants new ways of teaching. Idit Harel, CEO of MaMaMedia, proposes replacing the three Rs (reading, writing and arithmetic) with the three Xs (Exploring, expression and exchange). Technology is poised to take up this task but it needs to be facilitated through a structured environment. The Connected Learning Community can go a long way to addressing these issues.

“We recognize that learning about technology merely for the sake of knowing an isolated skill is counter-productive to the rich learning experience we want to create for our students. Realizing that technology is a powerful tool that can provide learning opportunities we had only dreamt of previously, we have developed broad-based competencies for the College. These competencies are not specific to any application and will be achieved in a student-centred, curriculum driven, project-based environment where students are engaged as active, purposeful learners.” (Siwinski)

## **Community**

The CLC project will focus initially on the immediate St Alban's College community consisting of pupils, parents and staff. Communication and collaboration between these three partners is seen as crucial. The introduction of email has facilitated an enormous amount of internal and external communication at the College and it is the extension of this type of communication, coupled to access to information that will form one of the cornerstones of the project.

St Alban's College has an extensive track record of involvement with successful long-standing outreach programs involving students and teachers from surrounding disadvantaged communities. The establishment of a dynamic information hub will provide a valuable educational resource to be used in an outreach mode. At present, as many as two hundred students are being bussed to the College on a daily basis to attend lessons in Mathematics, Science, English and Biology, where they were also exposed to computer literacy through accessing Sergo and Cami Mathematics programs.

The unfortunate part of these projects is that funds are rapidly drying up and funders want to see more value for their long-term investments. A possible solution is to provide students with access to information in a distant education mode. In this case, the long-term plan is to develop the infrastructure of the schools in the Mamelodi area by equipping the thirteen high schools and twenty eight primary schools with computers and a basic network. Once the equipment is in place, the next phase would be to connect all schools with computers to the CIDS Schools network which will provide direct access to the Information Hub established at the College

through the Mamelodi Teachers' Centre local area network (MTC LAN)

The Mamelodi Teachers' Centre has been established as a Community Centre through a project called Adopt-A-Network. This project was established as a joint project of Reach and Teach, the CSIR and St Alban's College, with a number of other projects run in collaboration with the International Development Research Centre (IDRC). The centre is reaching the point of self-sustainability and could serve as a model for the establishment of other centres around the country. This has gone a long way to alleviate the financial burdens placed on the community with the introduction of computers. At the same time, the needs of the community have been taken into consideration as it was the community that helped establish the project through involvement from all sectors, and not just the one person. The MTC LAN is a community resource that is available for everyone.

### Conclusions

“The progress from dependent to independent learning can be critical to the learner's successful achievement of aims. This can be managed in a number of ways, but one which is often successful is a staged approach beginning with traditional classes and progressing, with increasing use of self-paced materials and increasing development of peer group support, as the teacher or trainer helps the learner to gradually take control of the learning process. This may happen over a period of years, or much more rapidly for more mature learners. It should be noted, however, that while the locus of control may change, the professional responsibility of the teacher in supporting the learning process does not. (Victoria Open Learning Network : The needs of Learners in Open Learning.)

The move to an open learning environment has been a dream come true for many visionaries at the College. For years protagonists of educational change have promoted various aspects of open learning from time to time with varying degrees of support. Like prophets ahead of their times their eras came to an end and traditional teaching prevailed but this will change in the months ahead.

The role of the teacher has traditionally been to impart knowledge, to inspire and enthuse, and to encourage a disciplined approach to learning, either by classroom management or by setting schedules which must be adhered to. In open learning, the teacher is likely to help and encourage learners to find information for themselves and to transform it into understanding. Teachers are likely to encourage the development of self-discipline. And they may point to other sources of enthusiasm and motivation, such as other students, work colleagues, or social companions. This does not mean, however, that the teacher is no longer important. It does mean taking a step back from controlling and being at the centre of the learning process, but it does not mean relinquishing the professional responsibility for helping and encouraging learners to learn. (Victoria Open Learning Network : Organisational issues for Open Learning)

In summary then, open learning is really about good teaching and good learning, however they take place. The new technologies and structures are valuable when they offer opportunities to continue to improve teaching and learning practice; they do not replace those traditional methods which continue to be successful. (Victoria Open Learning Network : Open Learning, Flexible Learning and Flexible Delivery: What Are They? )

We will never know what is possible if we do not capitalize on the existing potential that has been built up over the past few years. There has been no better time in the history of the College to take such a bold step into the future where essential partners are there to help reduce the risk and to enable a truly exciting project. Students must become active participants where teachers actively accept change and deliver the curriculum in exciting and different ways.

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