1 BACKGROUND

1.1 In 2002 at the invitation of UNEVOC, I attended the LEARNTEC conference, the Conference and Fair for Educational and Information Technology. After listening to the opening address by Sir John Daniels, presenting the ‘eternal triangle’ stressing on the needs

- to provide greater access
- to improve quality
- to reduce cost

the idea to start an e-Learning centre was born.

1.2 “Education is not the filling of a pail, but the lighting of a fire”

W.B. Yeats

Aim of the project

- Job Related, Accessible, Available and Affordable Education

Carry out a significant shift from the chalk and talk method to a more inquiry based method with technology-assisted tools to ignite the passion for quality personalised learning at an affordable cost.

Education sustainability is fundamental to sustained socio-economic development. Innovative methods and partnerships could offer a solution to the provision of education cost-effectively.

“Seizing the opportunities offered by the Digital Revolution is one of the most pressing challenges we face”


1.3 We are trying to change the way people are used to learning. The transition from one established conventional system to a new system moving towards e-Learning will take some time.

However, it is the way to the future.

Technology is opening the window for new thinking, away from the chalk and talk, to enjoyable self-paced learning. The new system has to be set into place and will definitely reduce the cost of providing personalised job related education to a wider population.

Global Learning has achieved the above by using ICT and e-Learning.
Global Learning

2 JOB RELATED EDUCATION

2.1 To-day resources are scarce and changes are taking place too fast to waste them on teaching a curriculum which may itself be out-dated but very much enjoyed by the lecturers who gradually become specialist in a the teaching of a particular content.

Very often the graduates from such a system do not possess the skills required by the world of work.

Hence the need for a job related curriculum which will make the output more job worthy. Fortunately the technology - Information and Communication Technology - to address such an issue is available and has to be used for the benefit of the learners and the economy.

3 EDUCATION IN AFRICA AND THE WORLD – SOME FACTS & FIGURES.

3.1 To-day more than ever, we are living in a world which has become so competitive that it is only the countries with the greatest mass of brain power that will be amongst the winners.

Such a situation has a direct impact on the amount and quality of education we can provide to the population. Great efforts have been made to provide basic education to the different countries in the developing world and in Africa the gross enrolment ratio has increased to 85 (2004) for the basic level.

The net enrolment ratios for secondary education for the

- European countries varies between 70 and 94%
- Asia it is 61% (2005)
- sub-Saharan Africa it was 30% in 2004.

(UNESCO Institute for Statistics)

The enrolment ratios for sub-Saharan Africa are from what are obtained in the other parts of the world.

At the tertiary level, the least that can be said is that the situation in Africa is alarming.

- The UK Government has declared higher education a priority and has fixed as target the attraction of 50% of the 18 to 30 year olds to higher education by 2010.
- The USA had an enrolment rate of 40% in 2005 for the 18-24 year olds.
- The ratio for Brazil for the 20-29 year olds is 23 while for the OECD countries it is an average of 25 and for Russia it is 19.
- China is investing heavily in tertiary education, using ICT to meet the challenge of producing the required human resources.
- India has fixed as target an enrolment ratio of 15 by the year 2015.

Globalizing Higher Education in India – Earnst & Youmg – EDGE 2008 Report
All the countries are investing heavily in tertiary education so as not to be left behind and are all making use of ICT in the development of the human resources.

In Africa the enrolment ratio at the tertiary level increased from 4% in 1999 to 5% in 2004. The task facing Africa is a mammoth one. The situation is further compounded by the brain drain caused very often by the working environment of the specialists in the different countries. Hence the challenge facing the continent is just immense.

3.2 In Africa, the situation is very much different from the one obtained in the developed countries or the newly industrialised countries.

It is faced with several problems at the same time. It has to tackle the problem of access, equity and cost all together. Its physical infrastructure has to be built, the people have to be fed and provided with good sanitation and health care services, access to potable water and electricity and at the same time it has to develop its human resources.

The investment required is just enormous and beyond the means of the different countries. It is only through a vision of the future and the retaining of its professionally trained human resources to serve the continent that it may gradually join the race.

3.3 The world is short of quality faculty for teaching at the tertiary level. In Africa the situation is not brighter. In addition, as we have pointed out above, it is also very short of resources for investment.

The development of higher education in Africa depends more on the use of innovative solutions to provide access to a larger population at an affordable cost. As Africa moves further towards the development of its industry and service sectors the demand for people with graduate and post-graduate qualifications will increase.

3.4 “…We don’t have enough colleges, especially those at the higher end of the spectrum. We also need to upgrade our secondary and primary schools, upgrade the entire education system. The solution lies in advancing with the new age technologies. .. And Information and Communication Technology (ICT) is the only way with which we can move forward in achieving our educational plans and goals.”


3.5 Such a statement from a developing country is full of meaning and applies more so to the African continent.

The task is not easy but we have no better alternative. We need to revisit the way we are doing things to get maximum output from the scarce resources we have for investing in the education system.
That definitely needs a new approach and a new mind set towards development.

3.6 The reality is that we have a lack of adequately qualified teachers and lecturers in many of the institutions across the continent.

The lack of teachers and lecturers will lead to lack of access to quality education.

The provision of a network of virtual classrooms can supplement the development of higher education and ensure a much greater access to the population.

3.7 Higher education is becoming an international service with growing concern for quality, standards and recognition. It is not easy to define quality and to maintain standards which need a rigorous system during implementation.

Unesco 2003 Quality in Higher Education, Commission II states: “Often been understood as a means to fitness for purpose, i.e. what an institution must have in place to assure itself and others that it is able to achieve its stated aims and objectives, and that these will be achieved constantly. It recognises the diversity of higher education missions and provision; and the importance of the educational process in developing standards of a society.”

**Mauritius: Global Learning**

3.8 Global Learning, Mauritius, in collaboration with an institution in India is providing up-to-date job related education to a wider population.

This project demonstrates how ICT and e-Learning can be used to make accessible and available quality education to persons with no access to the traditional institutions.

3.9 Mauritius, an island in the Indian Ocean has a democratic system of government based on the British system and a system of education which has also evolved from the British pattern.

The Gross Enrolment Ratios at the primary, secondary and tertiary levels are 101(2007), 74 (2007), and 34 for the 20 -24 years (2006) respectively. *Statistics Section, Ministry of Education, Mauritius, 2008*

Government intends to double the enrolment at the tertiary level in the near future. It is presently facing the problems being encountered by many countries – a shortage of professionally qualified human resources.

3.10 The country has enjoyed unprecedented socio-economic development with a sustained economic growth averaging 5% annually for the past 20 years. Its future lies in providing the required human capital to sustain the growth. The population is tri-lingual, enjoys good political and social stability, neutral independence, reliable legal and financial structures and strong cultural and economic ties with major trading blocs.
Global Learning

It also has a good telecommunication infrastructure. It has reached a stage in its development where it needs more professionally qualified workers for its development.

Many persons, school leavers as well as workers, need to improve their competence, to be more productive, for the country to survive in this very competitive world and to prevent the footloose industries to move to new horizons. They have no time to attend the normal education classes and learn through face to face lectures. In addition they have little time to go and search for information after each lecture. Hence innovative ways and means to up-grade the workforce and the quality of the labour force have to be introduced.

3.11 Mauritius has

1  Approximately 375,000 fixed phone lines representing a tele-density of 27%;
2  Approximately 500,000 mobile phone users representing a tele-density of nearly 40%;
3  Approximately 90,000 broadband Internet Subscribers and 250,000 dial-up connections ;
4  Approximately 300 leased lines;
5  Some 2000 ISDN lines;

Source, Board of Investment, Mauritius, April 2008
It has a reasonably well developed telecommunications network.

4 JOB RELATED, ACCESSIBLE, AVAILABLE AND AFFORDABLE EDUCATION

4.1 It is within the above context that the project: “To provide Job Related, Accessible, Available and Affordable education at the post secondary level” was started in 2004.

4.2 The objectives of the project is
(a) To prepare citizens to live in a global society
(b) To meet the changing needs of the world of work
(c) To develop adequate managerial capacities
(d) To internationalise teaching and learning
(e) To optimize the potential of the new information and communication technologies (ICT).

4.3 The achievement of such objectives requires a new set of strategies which include the
• fundamental restructuring of the ways in which teaching and learning objectives are delivered including regular curriculum review;
• strategic alliances with other institutions as well as business and industry in the development of the curriculum and the provision of closer linkages with the world of work;
• use of ICT in assisting with the up-grading of the curriculum and in the teaching/learning process;
new mind set for innovative management and delivery of education.

4.4 To-day obsolescence happens very rapidly. The findings from Festo Didactic (Fig. 1) shows how the half life of knowledge varies with the different fields of study and is becoming shorter and shorter everyday. The graph shows how knowledge is getting obsolete with respect to time. Scholastic Education has the greatest half-life and Electronic Data Processing the shortest.

5 TACKLING OBsolescence

5.1 It is seen that science and technology have shorter half-lives and for ICT it is less than 9 months, meaning that 50% of the up-dated curriculum studied is obsolete after less than 9 months!

If we are not careful we may be teaching a course of study that is already obsolete to our young generation. Global Learning, by virtue of its size does not have the means to provide such an education by itself.

It works with Manipal Edu (India) to provide courses that are developed in partnership with business and industry, which are constantly updated to ensure that they meet their needs Manipal Edu has teams of professionals who follow the development in their sector of activity to bring about changes in the curriculum and up-date the courses.

6 GLOBAL LEARNING

6.1 Global Learning is a distant education centre using a technology assisted delivery of education, which is different from correspondence education.
The overall purpose is to provide greater access to quality education with an attempt to guide the students through self paced learning methods. It is making available using information and communication technology, job related, quality career oriented courses to a number of persons who otherwise would not have been able to benefit from further education.

It is presently making available some 25 different courses in fields like: Information Technology, Management, Commerce, Journalism and Mass Communication, Bioinformatics, Teaching Technology, Fashion Design, Allied Health Science and Telecom Technology at the Diploma, Graduate and Post-Graduate Levels.

6.2 There are a number of students who are interested in a particular career and would subscribe to only a particular course.

We have one student following the MCA (Master in Computer Applications) programme which is not very popular and another one following the MAJM (Master in Journalism and Mass Communication). They are both very clear about their career and would opt only for the above mentioned courses. Global Learning would arrange to have that course made available to the student with all the support needed.

6.3 The lectures are delivered from the Manipal Studio over VSAT (CDs) creating a virtual classroom environment. It is to be noted that it would not have been possible to offer such a variety of courses to the learner through the traditional means.

7 THE CURRICULUM

7.1 Very often the curriculum is prepared by the university lecturers with no exposure to the world of work. Such curricula which aimed at the overall development of man usually met the requirements for further studies.

The graduates from the system quite often do not possess the competencies and skills required by commerce and industry.

This gives rise to a mismatch between the output of the system and the requirements of the world of work.

To reduce the chances for the curriculum to become obsolete the following approach is adopted.

7.2 Once a need is identified for a particular course a team of professionals, through meetings with specialists in the field, constantly follow the trend in business and industry. The identified need, after verification with the different stake holders is used as the basis for curriculum design.

This brings the curriculum closer to the needs of business and industry than the one prepared by the faculty at the university, with little contact with the world of work.
7.3 To-day we are in a world where time is very precious and costly to waste. In case a student completes a course and finds difficulty in adapting to the working situation, further resources have to be deployed to provide the student with employable skills.

Very often large corporations set up their own training centres to train their staff according to their requirements. The smaller firms do not have the means to do so and make do with the available resources. Thus, they are not able to compete in the global market.

To avoid the wastage of precious resources, universities are gradually moving to make their curricula more in line with the requirements of the world of work. Manipal Edu develops its curricula in partnership with the business sector to make sure that the graduates have the skills and competencies required by the working professional. The curricula are made up of a number of modules which relate to the different tasks performed by the worker. Those modules are used by the curriculum specialists, amongst others, for the development of the learning objectives, the learning materials, the assessment and evaluation schemes. The whole process ensures that the curriculum is job related.

8 THE MODULAR APPROACH

8.1 The course consists of modules which have all to be completed and the students have to pass in all of them to be awarded their certificates.

This ensures a thorough completion of the different topics as well as the competency of the students in the different abilities, skills and attitudes. It also provides a flexible way for the learning of the different skills as the student who does not make the grade in a particular module can take the module together with those of the following semester.

This provides for the flexibility in learning and encourages the learner to do as much as he can, and not to be afraid of failure. However, the student is allowed a maximum of two times of the time allowed to complete any course. Beyond that he has to obtain the official permission of the university to re-register.

9 THE LEARNING MATERIALS

9.1 The learning material and its quality play a significant part in the learning taking place. Thus a team of professionals in the subject, develops the learning materials, based on the objectives of the curriculum, bearing in mind that the student will be a self learner struggling by himself to grasp the different skills and attitudes. The learning materials are designed in such a way that the learner goes through the topic with no difficulty and grasps the concept and ideas being developed as easily as possible.

Hard copies of all such materials together with relevant questions are provided to the student to assist him/her in his/her learning.
9.2 Another innovation is the development and constant up-grading of the learning materials to meet the evolving needs of the up-dated curriculum.

Information and communication technology has made it possible for documents to be written, edited and produced on a large scale within a very short time.

Thus, the materials are revised almost every six months in case there are changes in the nature of the job or in the technology being used. This approach enables students to be learning a curriculum which keeps up with the evolving trends of the present day world of work and saves them time learning things which may already be obsolete.

10 THE TEACHING-LEARNING PROCESS.

10.1 We are living in a world where there is a shortage of good faculty for the different fields and we have to find means of making the best use of the good lecturers for the benefit of a wider population. The internet is a medium which has made possible the sharing of information at the speed of light. It is being used to-day to promote the development of learning by improving access, decreasing cost and improving quality. The world is a global village and the rapid movement of sound, data and images have changed the way we do business and learn as well.

10.2 Formerly, there was only one way of conducting learning – through teaching and the teachers became the central figure in the provision of education and they have been trained in conducting such classes.

To-day, such an approach, which was based on the teacher preparing his lessons by accessing the library, going through different publications and preparing his own notes is very time consuming and the teachers are caught in a spiral of increasing publications with which it is difficult to keep up using the traditional method. The advent of the internet provides instant access to new ideas and publications to which the students may have easy access. Hence the lecturers have to keep pace with development in their sector using the internet.

This activity also requires a lot of research and preparation. Once the lecture is delivered the student has, in his turn, to make his own research to prepare his notes to be able to comprehend the subject. This is also time consuming and working professionals have no such time at their disposal. However, they have to increase their efficiency and competence and new ways have to be found for them to learn. Global Learning is providing the way forward.

11 DELIVERY OF THE COURSES.

11.1 Faculty to teach the different topics and modules of the curriculum are not always available. We are using the telecom network to receive online lectures, by qualified faculty from the Manipal studio in India. The advent of the internet and the
availability of broad-band for the downloading and uploading of information have enabled the transmission of video, sound and graphics (multi-media) to remote areas.

11.2 The Manipal studio uses the satellite broadcast as well the broadcast over the internet to access the learning centres which are spread across India and in other parts of the world. The broadcast lessons are received at the Centres live. The centres in India use the VSAT communication while the centres outside India receive the broadcast via broadband internet. Because of the path taken by the signals via the internet the quality of the reception suffers. We have been advised to use a dedicated telephone line to obtain better quality.

11.3 The cost for such a connection is still beyond the means of our centre. Instead we have the recorded lectures which we obtain from the Manipal Studio and make available to our students for viewing. The lectures follow the learning materials and hence the students have no difficulty in following them during their own time and at their own convenience. In addition to the above the centre organises counselling sessions to have the students together for group discussions and presentations. As from this semester, the graduates from the system will act as tutors to our students. That service will enable the student to have immediate answers to any query and facilitate his learning further. It is to be noted that Government has made available soft loans at concessionary rates to those who would like to purchase ICT equipment while the cost of broadband access is being reduced all the time. The learning is rendered more efficient, effective, flexible and personalised.

12 QUALITY CONTROL

12.1 The Centre is registered with the University. Under a franchise agreement, the University provides the curricula, the courseware, books and learning materials. Multi-media facilities exist at the Centre to promote self paced and e-Learning.

12.2 Only professionals qualified in the field, mostly from the world of work, are recruited to be resource persons for counselling. Such an approach ensures that the students have the benefit of persons who can expose them to real case studies in addition to the theoretical knowledge.

12.3 The University is very strict on the admission criteria. Only students satisfying all the criteria laid down by the University are admitted.

For example only student with a minimum of two ‘A’ levels are admitted for the under-graduate courses and only those with a post ‘A’ level degree are admitted to any graduate course.

12.4 The performance of the staff as well as the students are monitored and any shortcoming observed is highlighted to them and corrective measures are taken.

The staff is encouraged to keep up to date through the use of different publications and are provided with opportunities to follow training courses.
12.5 The risk of students scoring high by practicing previous question papers is avoided by the University not providing any past papers for assistance to the students.

The question papers are distributed during the examination, which is conducted by the Mauritius Examination Syndicate, and all are collected and sent back to the University with no single copy left behind.

As from this year the examination will be conducted on line. This ensures that the student studies all the modules and completes the course properly to graduate.

The Centre follows strictly the quality assurance procedures set by the University, in addition to the ones it has set in place locally.

In addition the students are provided with a set of the quality control manual and the rules and regulations of the Centre to which they have to adhere strictly..

13 CONSTRAINTS IN THE DELIVERY OF ON LINE EDUCATION.

13.1 Reliable electricity supply as well as the proper telecommunication infrastructure may not be available.

13.2 Broadband connection is still not available in many parts of Africa, specially in the rural areas.

13.3 In case the connections are available the cost is prohibitive and beyond the means of the educational institutions and the individual.

13.4 Once the system is in place the human resources to maintain the system may not be available.

13.5 Laws regulating digital security to protect users, information, and resources may be non-existent.

13.6 Access to the internet and the hardware and software may be beyond the means of the individual.

13.7 Once electricity and quality broadband access at a reasonable price is available to the learner, the cost for the development of the human resources as well as his upgrading will fall drastically. Hence the way to the future is through the availability of affordable ICT and broadband internet.

14 CAN E-LEARNING WORK IN AFRICA?
14.1 e-Learning is more and more being used by multinationals in the training of their human resources. Many of the industries have in place Learning Management Systems to constantly upgrade the workforce.

They have the means and commitment to make e-Learning work. Can we say the same for e-Learning used in the education system? The answer is not straightforward.

14.2 The search for the methodology, tools, proper infrastructure to be used is left to the small individual entrepreneur as many of our governments have not yet realised the benefits of moving towards e-Learning. It is time for the different countries to realise the potential of the e-Learning Industry and not to treat it as a part of the IT industry or its sub-sector. In the developing world very few industries have adopted e-Learning at the work place.

14.3 The cost for not adopting the new technology is enormous in terms of the loss occurred because of the workforce not being up-to-date in the use of the latest technology for human resource development and for doing business.

15 PROPOSAL FOR AFRICA

15.1 It is no longer possible to provide higher education which is not related to the development goals of a country which itself is part of a global network.

To-day’s education will require a curriculum which is constantly up-dated.

This way of developing the curriculum is costly and it will not be possible for individual institutions to develop such curricula on their own. Hence Governments will have to take the lead in the development of national curricula together with the business sector, with the flexibility to adapt them to the different situations obtained in the different regions.

15.2 The curricula will have to be constantly up-dated to meet the needs of the economy. Such curricula will ensure that the learner is equipped with the competencies and attitudes needed by the world of work. In addition they should be in the modular form so that they may be used for the upgrading of workers as well.

15.3 It will take some time for all the rural areas of Africa to be provided with electricity and broadband access.

However, the continent cannot wait and see the internet bandwagon passing.

“We will have to revise our educational policy and curriculum, the way we live and the way we see the world and interact with it, engaging it more vigorously with equal ownership, right and responsibility for its sustenance and its future. We will have to revise our visionary construct…. This may also require that our leaders regain confidence and reliance on their own African experts. Africa must act swiftly, smartly and strategically because, if indeed knowledge is power, and information is the ingredient which fuels that power, then Africa must

15.4 Africa will have to find the means which help it to at least reduce the digital divide. In that connection as a start-up measure Governments and aid donors can make available access to education kiosks provided with broadband connection and computers. These kiosks can be managed by a network specialist who will be able to trouble shoot minor problems and ensure the availability of the computing facilities to the users as well as some initiation to ICT.

16 CONCLUSION

16.1 e-Learning and the availability of broadband access have changed the way we learn and are providing us with the means to reduce the human resource gap as well as the digital divide.

However, in the race to use ICT in the education system we should not make the mistake of using to-day’s technology with yesterday’s curriculum to produce the human resources of to-morrow.

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