

## **A Survey of E-Learning Platforms in Mauritius**

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### **Abstract**

During the last decade, many organisations have started to provide training and education via the Internet. These organisations include universities, training centres, secondary schools and other private institutions. In this paper, our aim is to make a survey of e-learning platforms currently being used in Mauritius. E-learning is defined in this paper as learning which takes place on any publicly available web-based platform. At the same time, this will provide us with some comprehensive insight about the status of e-learning in Mauritius. Currently, most teaching-learning process in Mauritius is oriented towards the class-room model. We then discussed several case studies of successful and unsuccessful e-learning providers in Mauritius. Most of these e-learning platforms are simply static ways of delivering information using the Internet. There is almost no interaction between the learner and the tool. Often, the the only way in which the learner can interact with the system is by clicking on a download button. Nevertheless, we feel that the revolution of e-learning has started but it is currently in its nurture stage. With the growth in PC ownership and connection to a broadband internet facility, e-learning is slowly carving a niche in mainstream education. In the wake of being a digital island, Mauritius regroups all the necessary ingredients in fostering e-learning as an alternative mode to traditional method of teaching.

Keywords: e-learning, online education, educational technology, ICT

## 1. Introduction

Improvement in Information and Communication Technology (ICT) infrastructure has led to an explosion in web usage across the world. Widening access to education through electronic-learning (e-learning) concept has redefined the way of dispensing education across the world and in Mauritius as well. E-learning, as used in this paper, is defined as the use of technology to enhance learning or any web-based online learning. Education in Mauritius, since its accession to independence, has played a prominent role in the country's success. Today Mauritius ranks 57 according to the Global Competiveness Index 2009-2010 [5] in the world market place. The baseline for this success as a global emerging competitive economy inevitably relies on our educated and skilled labour force bearing in mind that we do not have any natural resources.

With an adult literacy ratio of 87.4% [4] based on the Human Development Index 2007, Mauritius positions itself as the leading literate nation in Africa. However, with fierce global competition, Mauritius aims at diversifying its economy seeking new avenues for growth and income generation. One such avenue is a Knowledge hub which the government of Mauritius envisions in setting up in the region [7]. A knowledge hub has as functions the generation, application and transmission of knowledge, making a close link between educational institutions (knowledge producers), service providers and firms (knowledge users). Basing ourselves on the Singaporean model [7], our country aims at being the centre of excellence in education, attracting international universities and students from all over the region. However one of the major constraints is capacity, whether in terms of trained labour force or infrastructure.

One of the solutions we envisage in solving this problem is the use of ICT and e-learning platforms to dispense education at a cheaper cost. Nowadays, all the necessary ingredients are present in Mauritius to promote e-learning in the country. Since the past decade with the advent an emerging ICT infrastructure [3], Distance and Online education are pushing their way forward as an alternate medium for course delivery. Mauritius is on the verge of becoming a digital island according to the National ICT Strategic (NICTSP) 2007-2011 plan [1]. Latest statistics shows that Mauritius has a 29.6% internet penetration ratio with 380,000 internet users [2]. We rank 51<sup>st</sup> on the network readiness index with a score of 4.07 based on the Global Information Technology Report 2008-2009 [10]. Basing ourselves on Facebook [12] users' demographic profile in Mauritius, around 80% of its users are in the age bracket 15-34 ages.

The rest of the paper is organised as follows. Section 2 briefly describes e-learning around the world. Section 3 provides a description of the educational system in Mauritius while in Section 4, we provide several case studies of successful online platforms. Some improvements are also suggested on some of these websites. Finally, we provide an insight into the status of elearning in Mauritius.

## **2. Brief overview of e-learning around the world**

A search using the terms “online+courses” in google.com returned about 3.6 millions results while the terms “online+course” returned about 2.7 millions search results. In China, over a quarter million Chinese students are taking courses from 38 online universities [13]. Beijing University has launched an Internet education portal that it projects will service one million students [14].

The website [www.e-learningforkids.org](http://www.e-learningforkids.org) is a private non-profit foundation based in the US and Netherlands. It offers more than 175 free online e-Learning courses available 24/7 in different subject areas. All courses are available in English and some are also available in Spanish, French, Portuguese and Thai. According to statbrain.com, this website receives about 2300 students daily.

The main feature of e-Learningforkids.org is that it provides a panoply of free interactive learning tools for kids in various subject areas namely Maths, Language, Arts, Science, Computer Skills, Health, Life Skills and English Language. The site is very user-friendly and eye-catching colours are used to maintain the attention and interest of kid learner as far as possible. Sunhaloo et al [15] demonstrated how this website could be adapted for e-learning at pre-primary and/or primary level for Mauritian kids.

[Coursework.info](http://Coursework.info) is UK’s largest academic coursework library. [Coursework.info](http://Coursework.info) is an extensive library containing more than 150 000 academics documents like coursework, essays, projects, theses and dissertation in all subject areas for GCSE, A-Level and University students. All documents are written by GCSE, A Level, International Baccalaureate and University students and teachers. This is not a free website. However, members can get free access to the site in exchange for publishing their own work.

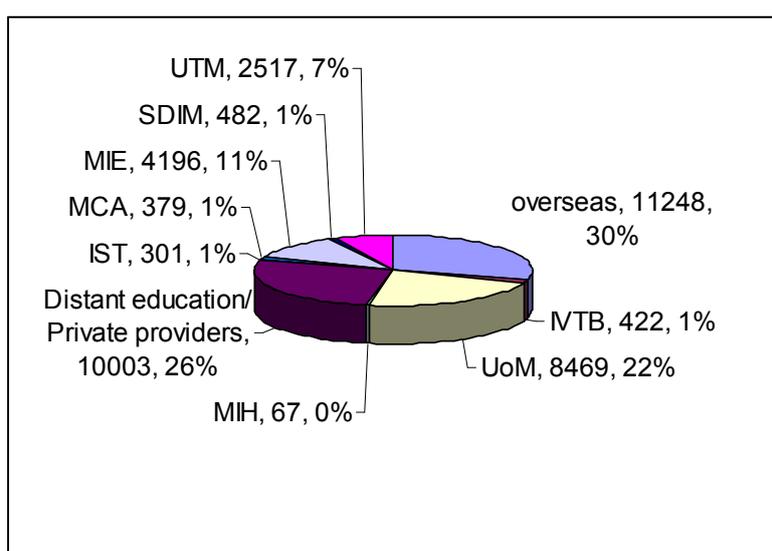
## **3. Education in Mauritius**

The mode of delivering courses in Mauritius still remains the traditional class based teaching from pre-primary to tertiary level. Since the advent of free education in 1976, Mauritian government has invested massively in education. Today education budget stands at 11.4 % of the government expenditure amounting to around Rs8 billion rupees [9]. This is spent on infrastructure, administration and personnel. Education is free from pre-primary to tertiary levels in Mauritius. However, there are private-owned and paid schools and universities. The education system in Mauritius is closely modeled on the British system. Pre-primary schools accept students as from the age of three. Children from the age of five to eleven go to primary school. They are admitted in standard I and gradually moves on to standard 6. Primary

education ends with a national examination which is the Certificate of Primary education (CPE). Students passing CPE gains admittance to secondary schools, those with excellent results are admitted in star secondary schools. Secondary education is normally a 7-year study, starting from Form I to Form VI. Varied subjects are taught and as from Form IV, students are streamlined according to subjects they choose. At the end of the 5<sup>th</sup> year of study at secondary level, students sit for the School Certificate (SC) examination. Passing the SC exam, allows them to continue another 2 year study ending with the Higher School Certificate (HSC) exam. University access has been enlarged nowadays and the government aims at providing University seat to most of the students passing HSC exam. The table below shows the number of enrolment, schools and teachers for each of the levels in education for the year 2008 [8].

2008	Pre-primary	Primary	Secondary	Tertiary
<b>Enrolment</b>	36242	119022	124998	38623
<b>Schools</b>	1070	299	187	9 public or public funded institutions and other private providers
<b>Number of teachers</b>	2541	5495	8053	NA

Based on the TEC participation in the Tertiary Education 2009 Report (June 2009), Tertiary education in Mauritius is dominated by mainly 9 public funded institutions. They account for nearly 45% of students' enrolment in Mauritius. The rest is provided by overseas universities, private providers and distance education mode. The table below shows the distribution of tertiary enrolment in 2008.



According to the same report, it is interesting to note that 12% of tertiary students study on Distance Education (DE) representing 10141 students. Hence, one way of improving this distant mode delivery can be through the use of E-Learning technologies, hence improving communication and ease of access to resources and materials.

With the advent of e-educational platform, we firmly believe that training capacity will definitely increase, in Mauritius, widening access to education. E-learning presents numerous advantages which can help in making our country a knowledge hub without investing massively in infrastructure. During the past few years, several attempts have been made to promote web-based learning in Mauritius either as a supplement to traditional teaching methods or as a collaborative tool for distance education. In this paper, we will survey some of these websites analyzing their pros and cons.

#### **4. Major e-Learning Players in Mauritius**

##### **4.1 Moodle Websites**

According to [Moodle.org](http://Moodle.org), there are 15 public moodle sites in Mauritius and two private moodle sites [16]. The registered ones are Computer Mediated Communications Programmes @ VCILT, Computer Science & Engineering Courses, Constance Hospitality Academy Learning Portal, Continuous Professional Development and Lifelong Learning, Ebene SSS Boys E-learning Portal, FZKS ACADEMY (2 sites), iLearn Mauritius @ VCILT, Incubateur Virtuel de la Francophonie pour l'Entrepreneuriat, MIE Online – Elearn, New Educational College, NPCC eLearning Platform, Sagittarius Virtual Learning Environment, UniMauritius and University of Mauritius Moodle.

Four of these moodle sites are from the University of Mauritius which makes it the key player in e-learning in Mauritius. Three of them are managed by the VCILT and one by the Computer Science and Engineering. The UoM Moodle is for general use by any staff or department/faculty of the University. Except from the Engineering faculty (which is itself a poor user), it seems that the other faculties do not really use this free online service. As can be seen from the front page of the website, only a few courses are listed from the hundreds that are run at UoM and even for those courses which are listed, only few modules are listed. The UoM website (including all sub-websites and pages) receives about 2000 visits daily (source: [statbrain.com](http://statbrain.com)).

Incubateur Virtuel de la Francophonie pour l'Entrepreneuriat, MIE Online – Elearn and NPCC eLearning Platform have been deployed mainly to cater for students of each institution respectively.

Two of these sites are secondary school websites. New Educational College is a private institution while Ebene SSS is a government school. Both are quite similar educational portal and they are trying to provide much content for SC and HSC students. However, currently there are very few content which are available freely on these platforms.

One interesting moodle site is UniMauritius. This appears to be created by a university student to make access to the contents of this course freely accessible to all his/her classmates.

The remaining five websites were deployed but were unsuccessful in attracting potential learners as no contents were provided and hence have been abandoned as they receive fewer than 10 visits per day.

The contents of these moodle sites are generally protected by a key which are known only to students following courses at these institutions. Many courses seem to be created for one-time use only but they are not removed once the courses are completed.

ATutor, an Open Source Web-based Learning Content Management System, has been deployed at [www.education.mu/colleges](http://www.education.mu/colleges). The site is available freely to any teacher who wants to make use of it facility to deliver online courses. Currently both secondary and tertiary courses are available. Tertiary courses are usually protected using a password.

#### **4.2 Government Portal of Mauritius**

The [ministry-education.gov.mu](http://ministry-education.gov.mu) website, although not entirely an e-learning platform, provides many facilities and information which are used by most educational institutions in Mauritius. This website is a sub-portal of the Portal of the Republic of Mauritius ([www.gov.mu](http://www.gov.mu)). The aim of this initiative is to develop Mauritius into a cyber island and ICT-literate nation. It offers efficient delivery of government services online on a 24/7 basis and several application forms can be either filled online or downloaded from this website.

Many educational services are offered for all levels of education. For pre-primary education, a link to the [www.tipti.org](http://www.tipti.org) website is provided which gives information on 'Early Childhood Care and Education Authority (ECCEA)'. Moreover, the 'List of Pre-Primary Schools in the Government Primary Schools, year 2007 for zone 1, 2, 3 and 4' is given. For primary education, it provides useful information to the students such as the School Calendar 2010, National Curriculum Framework, List of ZEP Schools, ICT Syllabus for Standard 1 to VI and List of Primary Schools. Information available under the secondary education section are: School Calendar 2010, School Management Manual for Rectors of State Secondary Schools, Standardisation – List of Secondary Schools textbooks Year 2010-2011, Co-Curricular Activities, School and List of

Subject Combination for Lower IV 2009. As regards pre-vocational education, information on Pre-Vocational Education Policy, Philosophy underlying Pre-Vocational Education, Curriculum content for the first 2 years and Training Scheme is given. Furthermore, the website provides supports and guidelines to pre-vocational teachers. Links to relevant websites such as Tertiary Education Commission (TEC) Website and Human Resource, Knowledge and Arts Development Fund Website are available. Moreover, details about Special Education Needs, Co & Extra Curriculum Activities, Scholarship and E-training are also provided for the benefit of the student population of Mauritius.

#### **4.3 Sir Seewoosagar Ramgoolam Educational Platform**

The main aim of this educational website is to provide free teaching methods to the primary students aged from nine to eleven years. 121 members are actually registered on [ssr.mu](http://ssr.mu). The site is online since mid 2009. As it is a free website, anyone can sign up to use it. The site is equipped with an online forum where users can post their questions. It also provides materials for standard IV, V and VI for the following subjects: English, French, Mathematics, Science and History & Geography.

Interesting resources, from the different subjects, varying from one standard to another are also available. The resources include online interactive exercises, custom test papers, mock exams, past examination papers from over 50 years until the most recent, community forums for interactive group work and personalised teacher response from student questions.

##### *Advantages*

This site has been recently updated (in 2010), therefore we can expect to have more learning areas for the primary students in the future. As we know, different children learn at different pace, so this very site encourages students with varying intelligence level to learn on their own at the rate they are capable of. As a result, students will become independent at an early age with various technological skills. Moreover, audio visual materials are provided for better learning skills.

##### *Suggested Improvements*

Since Mauritius is beneficiary from such an e-learning tool, more students must sign up to access the resources available. Additionally, students will practice more, and as it is said "Practice makes perfect", the grades of the pupils will be improved. At the same time, the child can enjoy his/her childhood days.

Moreover, the videos take time to load as Mauritius is supported with low bandwidth. In some subjects, some more materials can be added, for example, in English and French some verbs operations can be implemented. Students must be encouraged to use the forum more often in order to share their views and for interactive group work.

#### **4.4 The First Educational Portal of Mauritius**

It is an educational website ([education.mu](http://education.mu)) for secondary and tertiary students. It was setup in early 2009. With 2140 members who are currently registered on this website, 882 posts and 550 topics, education.mu seems to be the leader in Mauritius in providing educational content freely to upper secondary students. Many subjects for secondary students of Form IV, Form V and HSC (LVI and UVI) with different topics are available. Some tertiary courses with some discussions about specific topics are also provided. Moreover, there are some posts about professional courses like ACCA. In addition, there is an educational forum where notes on many subjects are posted. Registered users can ask questions and/or reply to any questions. The General Paper board with 100 posts covering 44 topics is the most popular amongst Mauritian students. Education.mu is the only educational portal which uses the ATutor [17] e-learning platform instead of Moodle.

##### *Advantages*

Topics discussed in the forum are of great use to the students. Many students expressed their views freely on the different topics. Students are also sharing resources that can benefit anyone using this educational website. As a result, they can develop their own way of learning, i.e. self-learning.

##### *Suggested Improvements*

For students to learn much better using [education.mu](http://education.mu), more topics about a particular subject may be added so as to complete the whole syllabus. It can also be made interesting by implementing some exercises which students can work online and be corrected on the spot.

#### **4.5 Computer Science and Engineering Moodle Platform**

The content of this educational website ([cse.uom.ac.mu/courses](http://cse.uom.ac.mu/courses)) is meant only for tertiary students from the Computer Science & Engineering department studying at the University of It was setup quite recently in 2007. Mauritius. However, anyone can use the content by selecting the “view as guest” button. It does not provide privacy as such, i.e. there is no need to sign up

to access the content. There exist different course categories namely: undergraduate courses with yearly modules, undergraduate courses with semester-based modules, new undergraduate programmes, old postgraduate programmes and new postgraduate programmes. For each category, the contents are different per modules. Each module has its own forum where students can ask questions and either the lecturer or any other students can answer or comment.

Most students of this department use this site to download lecture notes. In general, interesting learning materials are provided here. Students can download them whenever they want and learn at their own pace, since in class time is limited to note down everything. Every lecture notes are up to date in this educational website. However, although there is a forum available for discussion purposes, almost no one uses it.

#### **4.6 Ebene SSS E-Learning Portal**

An educational website ([www.ebs3.org/elearning](http://www.ebs3.org/elearning)) developed at Ebene State Secondary School Boys. It was setup in 2008 by four students of this school. Anyone can view it but when someone wants to access the e-learning portal for notes, it asks for a username and password. This means that only students from that very institution can access the notes and homework. This site uses the moodle application which is easy and simple for students to use. The forum is used for posting questions where anyone from the community can reply. The e-learning portal provides homework and notes for various subjects, studied in that particular school, for Form I, Form II, Form III, Form IV and Form V. An interesting feature is the parent area, where the responsible party is aware of what is happening in the school.

##### *Advantages*

The forum and the e-learning portal enhance the learning and teaching qualities in order to motivate students and teachers. Both the forum and the e-learning portal are meant to develop a new and modern approach to learning and communication strategies. This initiative encourages self-learning and evaluates development and progress in the school. The e-learning portal helps to improve students' performance.

##### *Suggested Improvements*

More exercises may be added and more course categories may be implemented. Regular updates of the e-learning portal must be provided since last update was in 2008. The forum must be opened again to improve communication between the student and the community.

#### **4.7. i-Le@rn: Lifelong Learning Cluster**

An educational website ([www.elearning.uom.ac.mu/moodle](http://www.elearning.uom.ac.mu/moodle)) from the Virtual Centre for Innovative Learning Technologies. It provides the following features: different categories of courses, interesting topic discussions in the site news, programmes offered in that particular department and an online forum.

#### **4.8 Private Secondary Schools Authority (PSSA)**

The PSSA has a website ([www.pssawebsite.net](http://www.pssawebsite.net)) which provides information about all private schools in Mauritius. Moreover, it provides the following facilities: the names of all private colleges in Mauritius, lists of books for the various subjects studied in these colleges and list of combinations of subjects offered in these colleges in Lower VI.

#### **4.9 Mauritius College of the Air (MCA)**

The Mauritius College of the Air is a tertiary education institution which promotes education, arts, science and culture mainly through mass media and distance education methods. It has a free learning website, ([www.mca.ac.mu](http://www.mca.ac.mu)), which is meant mainly for secondary students. Many educational resources are available on the website.

The website shares high quality learning resources from the 'Common Wealth of Learning' under the 'Open Learning Resources' feature for the following subjects, English, Biology, Chemistry and Physics. These learning resources are organised into a definite number of modules, in PDF file format. Furthermore, Tutor Guides for each module are provided to the teachers, for proper teaching. They contain test papers, assignments and other information meant to the teachers only, in other words, information which does not concern the students. Secondly, the 'Audio Visual Materials' feature is an extensive library containing more than 500 video titles and descriptions available at MCA, for Mathematics, Science, Geography, English and French. The latest feature added to this website is the 'Computing Projects in VB at HSC/GCE 'A' Level'.

#### *Suggested Improvements*

The website can be updated on a regular basis, say once a fortnight for example. The website can organise its learning resources by indicating which learning resource is for which class of students. The 'Audio Visual Materials' can be made available for viewing and/or download online. A login can be created for teachers to prevent students from accessing the Tutor Guide,

as it contains information which are not meant for students, for example, the answers to the test.

#### **4.10 The Virtual Centre for Innovative Learning Technologies (VCILT) iLearn Platform**

The VCILT is a unit which supports the University of Mauritius (UoM) to become a leading institution by developing on-line web-based applications. The VCILT has developed several Learning Platforms (LP) like i-Learn, Learning Objects Repository (LOR), Online Test Centre, IT Proficiency and History & Geography at Primary Level. In this paper, we will have an overview of the i-Learn LP.

i-Learn LP was developed to deliver online modules, provide support to conventional classes and host training programmes enabling life-long learning. i-Learn provides a complete collection of pedagogical tools as shown in the main features below. The main features of i-Learn LP are: accessing module through the platform, discussion forum for collaborative work, managing bookmarks for accessing URL at a later point in time, online assessment, managing private storage/space for file storage, submission of assignments by students, etc.

#### **4.11 Mauritius Institute of Education (MIE) – Elearn Platform**

The MIE Online Elearn platform (<http://www.mieonline.org/elearn>) uses Moodle as its Learning Management System (LMS). Currently, there are 8 categories of courses with a total of 28 courses being run online. For each course, there is an administrator and a teacher. Some courses are accessible to everyone with or without a Moodle account while some courses can only be accessed by students who got an enrollment key for the module.

### **5. Conclusion**

Slowly but surely, education providers and students are realising the potential of ICT in delivering courses. An overview of the different websites discussed in the paper demonstrates the increasing interest of Mauritians in using e-learning platforms as an integral part of their education. These websites presents numerous advantages and offers lots of facilities to its users. Education.mu is one such website which has carved a niche place in Mauritius in disseminating freely online content to students. Nevertheless, still there are improvements which can be made on these websites to make full use of these online educational platform technologies.

One biggest misconception noticed while analysing these websites is that these providers often misunderstand E-Learning to merely web-based delivery of lecture notes and tutorials. What is usually to be seen is that the same traditional lecture notes and tutorials are available in soft copy on these portals. Hence, they are usually used only for uploading and downloading of educational materials. E-learning is not only the mere delivery of online educational materials, but also includes all the pedagogical aspect in the preparation and delivery of materials. It also implies well-formed and trained teachers since doing a course in distant online mode is completely different from classroom teaching.

With E-learning, the whole concept of teaching is to be reviewed. Dispensing traditional educational materials online, as it is currently in Mauritius, does not necessary mean education has been achieved. The current situation as overviewed in this paper shows a very passive form of online education without taking into account student comprehension. Focus should be student oriented and care should be taken that these students do really understand what is being delivered through proper feedback mechanisms such as forums, chat services, online assessment, and video conferences. New pedagogical strategies are to be adopted in fostering E-Learning with a focus on instructional design, academics training and availability, technical support and expertise.

Mauritius stands at the cross-road of a new educational era. In line with being a knowledge based economy, we firmly believe that E-learning is part of the solution in converting our island into a knowledge hub, complementing educational infrastructure needs, widening access and eliminating distance barriers. If properly implemented, our country can emerge as an educational haven for the region or even the world. Seeing the different online educational platforms mushrooming in the country, a major step has already been achieved, and slowly online education is anchoring in the Mauritian habits. Nevertheless, we strongly recommend the setup of a regulatory body monitor, facilitate and empower quality education on a distant online mode.

As a future work, we intend to survey students who use e-learning platforms in Mauritius to determine whether this new medium of instruction is meeting their educational needs. In addition, similar work will be carried out in the Mauritius business environments to survey how e-learning tools are used in meeting an organisation's training needs.

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