

## Use of Educational Technologies to assist Academics in their Teaching at the University of Mauritius

**V Ramnarain-Seetohul\***  
*Faculty of Engineering  
University of Mauritius  
Réduit  
E-mail: v.seetohul@uom.ac.mu*

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### **Abstract**

In the ever changing world of technology, traditional ways of doing classes have been greatly overtaken by the integration of educational technologies in the curriculum. In this digital era, with rapid technological innovations, the learning and teaching process is also changing rapidly at tertiary level. The use of educational technologies is becoming more interwoven in the fabric of academic life. Student management is becoming difficult and lecturers are facing various challenges every day. This study reflects the challenges that educators at the University of Mauritius face in their day to day lecture and investigate whether the integration of educational technologies in their curriculum can assist them in their teaching. Data was gathered through a survey where 169 students participated. Preliminary data suggests that educators cannot cope with too many students at a time and alternative methods to suppress this problem need to be catered. This study also elaborates on whether the introduction of eLearning technologies will be helpful to educators and will provide a solution to all their problems.

**Keywords:** educational technologies, technological innovations, academic, eLearning

*\*For correspondences and reprints*

### **1. INTRODUCTION**

In the ever changing world of technology, traditional ways of doing classes have been greatly overtaken by the integration of educational technologies in the

curriculum. Mauritius has invested massively in the ICT sector over the past few years. According to the statistics obtained from the University of Mauritius website (2012), the actual student population is about 10 000 and the intake will continue rising as the Mauritian Government's vision is to have one graduate per household. Consequently, the number of students is increasing yearly at the University of Mauritius and the cohorts are growing in size. Student management is becoming difficult and lecturers are facing various challenges every day in their class. According to Laferriere et al (2001), the use educational technology helps to stimulates development of intellectual skills including problem solving, learning how to learn and creativity. Furthermore, the use of educational technology increases interest in learning and attention span as it stimulates search for more information on a subject, promotes cooperation and contributes to more thorough assimilation of ideas. Laferriere et al (2001) research also shows that integrating educational technology in the curriculum, promotes use of diverse instructional resources, facilitates cooperation among colleagues, promotes examination of learning styles and outcomes, encourages teacher-student interaction, fosters view of learning as a continuous research process and finally highlights student learning strengths and difficulties. ACOT 2012 study confirms that students become re-energized and much more excited about learning, resulting in significantly improved grades while dropout and absentee rates decrease dramatically when integrating educational technologies in their curriculum. This paper focuses on assessing the various challenges that UOM lecturers faced in their day to day class and evaluates whether the use of educational technology can assist academics in their teaching.

## **2. RESEARCH PROBLEMS AND QUESTIONS**

There are several challenges that exist in teaching. In addressing the main question of this work, which is, to identify the challenges faced by educators at UoM, the learning environment of UoM students will be examined thoroughly. Additionally, the teaching and learning methods usually adopted by the educators will be analyzed. The main questions include the following:

1. What are the best teaching strategies for teaching students at the UoM?  
Are students satisfied with the current teaching strategies?

2. What are the main problems educators at UoM faced with the current situation at UoM?
3. Do they adapt their teaching skills with the aid of technologies? Does UoM infrastructure allow these teaching to be carried out successfully?

### **3. RESEARCH METHODS**

#### **3.1 SURVEY DESIGN**

A survey was designed which consisted of ten questions. The questions set were oriented towards the problems that students faced in classes and how could these problems be alleviated. Some of the questions include their views about working in large cohorts, the feedback they receive in class from educators concerning their course work, marking scheme, do they prefer face to face or online lecture, their preferences to work in groups, satisfaction with the Quality/Use of the infrastructure at the University, satisfaction with mode of delivery of modules and evaluation of student shyness. Survey was put online using survey monkey and students were given the link to fill in the questionnaire.

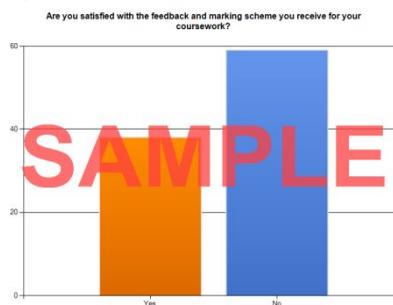
#### **3.2 ANALYSIS OF SURVEY AND RESULTS**

The total number of respondents was one hundred and sixty nine students. The results are as follows:

1. Do you like to work in large cohorts?
2. Are you satisfied with the feedback and marking scheme you get for your course work?

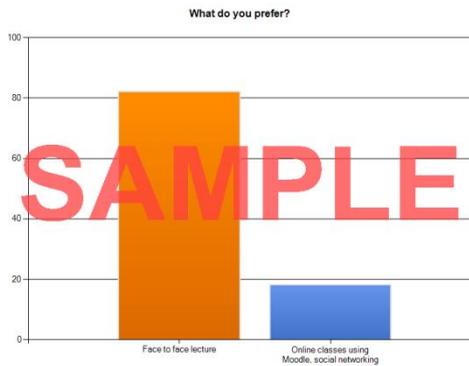


**Fig 1: Large Cohorts**



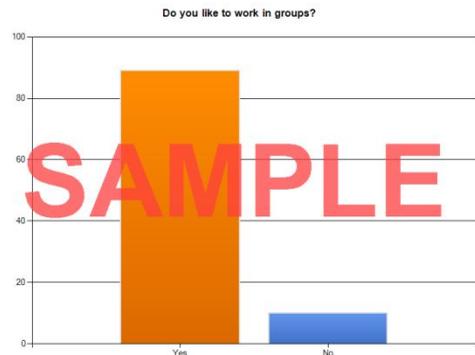
**Fig 2: Feedback on Assignment/Coursework**

3. Face to face or online lecture



**Fig 3: Face to Face or Online**

4. Do you like to work in groups?



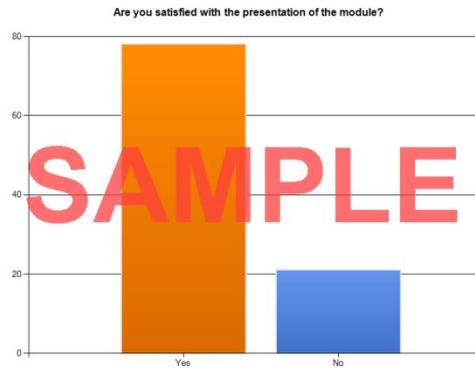
**Fig 4: Group Work**

5. Are you satisfied with the Quality/Use of Infrastructure and other Learner Support Facilities?



**Fig 5: Infrastructure**

6. Are you satisfied with the presentation of the module?



**Fig 6: Presentation of Module**

7. Whenever you do not understand a concept, what do you do?



**Fig 7: Student Shyness**

Results show that 64 % of the respondents do not like to work in large cohorts, some 60 % are not satisfied with feedback or marking scheme for their assignment, 18% prefer online teaching mode, 85 % prefer to do group work, 48% are not satisfied with current infrastructure at the University of Mauritius, 22% are not satisfied with presentation of module and 47 % are too shy to ask about a concept that they have not understood. Hence it can be concluded that that students do have problems to work in large cohorts. They are not satisfied with the current correction schemes and feedback for assignment and they prefer to work in groups. The survey also carries a question about how lecture can be enhanced and most respondents believe that making use of whiteboards, video clips (Multimedia tools), group collaboration and automated assessment can help enormously. In addition to that, most students respond that the main challenges that they face in class are no motivation, no individual attention by lecturers, too many students in cohorts which lead to much noise and disturbance, thus resulting in low concentration. Furthermore, there is lack of communication between lecturer and shy students. Students who are slow learners cannot keep in pace with fast learners.

#### **4. THEORETICALLY DRIVEN DESIGN**

One of the most difficult challenges is to teach large cohorts at University of Mauritius. In large cohorts the number of students varies from sixty to hundred and twenty. Students cannot have individual attention as compared to when they are in small cohorts. Students who sit on the back bench most of the time do not follow class, they prefer to talk and joke among themselves. Whenever students do not understand a concept, they feel shy to ask because they can become the laughing stock of the class. Also, queries from students cannot be answered in lecture as time is limited. Furthermore, since there are lots of students, teachers cannot take into consideration the different learning styles of students. Class is not homogenous, and there are students with different abilities. Hence in such situations the use of discussion forums can be helpful. Discussion forums promote students and teachers interaction and students can be encouraged to participate in discussions. Teachers can answer queries that they cannot handle during lecture. One of the strengths that the discussion forum provides to the

online learning community is the ability to allow learners from a variety of time zones to interact at a time that suits the individual learner. According to Kearsley (2000), the most significant applications of computer-mediated communication in E-learning environments are discussion forums. Web discussion forums provide a way for students to extend the classroom discussions.

Motivation is another factor which is difficult to establish in large cohorts. Staying awake and interested in class can be difficult. But what is even more difficult is being responsible for keeping students awake and interested. In addition to teaching, teachers need to inspire and empower. The goal is to excite the students about learning, speaking, reading, writing, and comprehending the topic. And this is very difficult to establish in large cohorts. However, according to Prensky M. (2001), teachers can motivate students by varying their lecture notes. Instead of using PowerPoint slides to explain difficult concept, they can simulate the concept by using simulation software in class. Students will see the concept differently and will be motivated in class. According to researchers, learner motivation is linked to achievement. Students that are intrinsically motivated are more engaged in learning and “[tend] to have higher success rates” (Simonson, Smaldino, Albright, and Zvacek, 2009). Studies have shown that technology can “influence student academic performance” and “improve student motivation, attitude, and interest in learning” (Roblyer, & Doering, 2010). According to the study carried out by Swan et al (2005), several teachers involved in the study “agreed that their students’ motivation to learn and engagement in learning activities was improved by their use of mobile computing.” This resulted in increased student productivity and improved work.

Another challenge is to keep track whether students are really doing their tutorials or they are copying tutorial from their friends and they never try to attempt the tutorials by themselves. By designing automated assessment, teachers can be relieved from the tedious task of correcting tutorials in class and at the same time, discourage students from copying from their friends. According to Dreher et al (2010), the immediate feedback that is provided on well-designed automated assessments can enhance the learning process and can also activate

intrinsic motivation for students within their learning setting.

Students usually complain after correction of assignment as results are lower than expected. Hence it is of utmost importance to design rubrics and give to students along with the assignment. This will prevent students from losing marks as they know what they have to do in the assignment.

At times a particular topic or concept is difficult to understand and students want to relate it to practical and it becomes difficult to make the students see it in reality. Traditional tests tend to reveal only whether the student can recognize, recall or "plug in" what was learned out of context. Authentic assessment is very helpful as they foster students to better relate theoretical concepts to applied situations. According to researchers, authentic assessment experiences can improve student learning (Darling-Hammond, Ancess Falk 1995). Arguments have also been made that authentic assessment experiences encourage multiple modes of expression and support collaboration with others (California Assessment Collaborative 1993). Simon and Gregg (1993) also opine that authentic assessment can "increase interest" and "improve attitudes".

In addition to that, when students are given group work, only a few participate while others get credit without doing anything. This problem can be solved by using collaborative learning tools for team work. These tools allow students to interact and to learn more quickly.

## **5. EXPECTED OUTCOMES**

Prensky M. (2001) characterizes today's students as digital natives who want to receive information at light speed, like to parallel process and multi-task, prefer their graphics before their text, prefer random access through hypertext, function best when networked, thrive on instant gratification and frequent rewards and expect information systems to work like Google. Hence, students are no longer keen to sit and listen to boring lecturers. What they really want is to have various ways to help them to learn. Designing online interactive tutorial can be very helpful to students as they can see same concepts but in a different style. Also

with multimedia software, educator can target students with different learning styles.

From a pedagogical perspective, assessment needs to be an accurate and informative indicator of students' learning. Assessment depends on the educational learning theory employed; it is linked to the educational objectives. In order to cope with increased marking loads, teachers prefer to work smart and efficiently by using automated assessment technologies. Working more efficiently will also benefit the institution via a good reputation resulting from student satisfaction and competent graduates performing well in the industry. In this regard, automated assessment can provide quick, reliable, cost-effective means of assessing large numbers of students and has the added benefit of freeing the educator to teach students and to provide them with formative feedback for both directive and facilitative purposes. Hence, by working smart through using various state-of-the-art automated assessment technologies, both the pedagogical and economic goals of the university can be met.

Rubrics have proved to be extremely useful to students. The rubrics help students to understand the teachers' expectation and help them at the same time to know how to get an outstanding performance. When students get their rubrics, they can identify their weaknesses and at the same time this prevents teachers from being impartial or bias toward students. Students immediately understand where they did well and where they went wrong, reducing arguments and debates over grades. Hence, students know what are expected from them and this is transparency for marking (Suskie 2004). Rubrics are especially useful when more than one person will be grading a student's performance, to ensure that all graders are evaluating the performance by the same criteria.

Discussion forum has been very helpful to shy students who cannot express their concerns. Introducing technology into the learning environment (Koszalka T. and Wang X., 2002) has shown to make learning more student-centered, to encourage cooperative learning, and to stimulate increased teacher/student interaction. Discussion forum provides better cognitive and exploratory learning (Haggerty et al., 2001), increased student-to-student discussion and cooperation (Kassop,

2003; Stodel et al. 2006), superior learner empowerment (Kassop, 2003), and upgraded critical thinking skills (Shapley, 2000; Collison et al., 2000). Many students who seldom participate in face-to-face class discussion become more active participants online. Discussion forum is known to support 'knowledge sharing' goals. However, a discussion forum will only be a success if the facilitator managing the discussion forum encourages discussion.

The introduction of simulations and software can help students to understand a given concept in a different perspective. An alternative solution to this can be the use of authentic assessment where students are given real life scenarios to investigate and give feedback. This helps student to relate the gap between theory and practical.

Collaborative learning can be very efficient for team work. Students can learn collectively using this tool. However, the monitoring of collaborative learning is of utmost importance to make it a successful team work. Evaluation of the team work should be based on student self-evaluation and peer evaluation. This will be fairer as not only group will be evaluated but all members in the group. Collaborative learning can promote critical thinking and students learn more things in a shorter lapse of time.

At the University of Mauritius, students rely a lot on their email for any notification. However, they have to check their email regularly so as not to miss any meeting or change in time table. Nowadays, Bluetooth is widely used and this technology can be exploited to get important information at the right time, thus enhancing students and instructor communication. Also, sharing of information using Google docs and social networks allow students to be in constant communication with each other and help encourage them to work together on projects.

Experts agree that utilizing technology not only builds students' confidence with using technology, but also enhances learning, saves paper and time, and keeps students engaged (Chin P, 2004). Technology is an absolute buzzword in

education, as grants and proposals for more technology in the classroom are written and approved every day.

## 6. CONCLUSION

Use of educational technologies to enhance students learning has proved to be quite useful as they stimulate student discussions, increase student motivation, and help students and teachers be more creative. However, to make use of these technologies in classroom, the current infrastructure has to be upgraded and it is at the expense of the University to provide these facilities. In addition to that, not all educators are willing to make use of the technologies in classes; some of them have to learn how to use these technologies before they can integrate them in the curriculum. Furthermore, new technologies are emerging and educators have to adapt their teaching methods to these emerging technologies and should they focus more on these changes or on their teaching, this is an important question which arises. According to the Interactive Educational Systems Design (1997) it can be concluded that not every lesson needs technology. While there may be opportunities to attach technology to many activities, teachers must consider lesson goals before deciding to use technology. If computers enrich, extend or facilitate learning, they should be used else, they should not. Finally Technology by itself does not guarantee learning. Rather, it is in how teachers and students use available technologies that determines whether transformative learning happens.

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