

# E-Education in an Open Distance University

Zenghui Wang<sup>1,1</sup>, Yanxia Sun<sup>2</sup>

<sup>1</sup>Department of Electrical and Mining Engineering, University of South Africa,  
Florida 1710, South Africa.

<sup>2</sup>Department of Electrical Engineering, Tshwane University of Technology,  
Pretoria 0001, South Africa.  
{wangzengh, sunyanxia}@gmail.com

**Abstract.** With the development of internet, software and the relevant techniques, the e-education becomes more and more attractive. As one of most famous open distance universities, the University of South Africa (UNISA) has partly realized e-education. This paper describes and investigates the existing e-education system of UNISA. There are many advantages, such as realizing paperless office, lower cost, high efficiency, and so on, using this e-education system for teaching and learning. Moreover, the challenges and solving methods are also studied and discussed.

**Keywords:** E-Education, Open distance university, University of South Africa, e-system

## 1 Introduction

Most universities have adopted e-education (the e-education refers to the use of electronic media and information and communication technologies in education) to facilitate academic student support. While other institutions across South Africa implement systems such as ClickUP (University of Pretoria) and eFundi (North-West University), ITS System (Tshwane University of Technology), the Learning Management System (LMS) used at the University of South Africa (UNISA) is known as myUNISA. However, from academics' perspectives, technology-enhanced learning is not always implemented equally throughout various colleges, schools and departments [1][4]. As an open distance university, the e-education plays more essential role in UNISA since the electronic media and information and communication technologies (ICT) are more important than the residential universities or institutes. In this paper, UNISA is taken as a representative of open distance universities/institutes to investigate the model of e-education.

UNISA is the largest open distance learning institution in Africa and the longest standing dedicated distance education university in the world with a history of 140 years. It enrolls nearly one-third of all South African students. It offers an unparalleled range of study choices, ranging from short courses and certificate programs to three- and four-year degrees and diplomas, to over 350000 current students. Founded in

---

<sup>1</sup>Corresponding author.

1873 as the University of the Cape of Good Hope, the institution became the first public university in the world to teach exclusively by means of distance education in 1946. Throughout the years, UNISA was perhaps the only university in South Africa to have provided all people with access to education, irrespective of race, colour or creed. UNISA has claimed that ‘one of our main aims is to harness the new and emerging potential in information and communication technology to catapult the university into a truly digital future’. [2] To realize the digital era of open distance education, UNISA has designed and developed a good learning and management system for teaching and learning.

The rest of this paper is arranged as follows: In Section 2, the e-education system of UNISA is described. Section 3 describes the challenges of the current e-education system. Finally, the concluding remarks appear in Section 4.

## **2 E-Education**

The e-system of UNISA includes e-education system and e-management system. Here e-education system is the focus of this paper. The e-education system is known as myUNISA system. Moreover, there is a new subsystem of myUNISA is the onscreen marking system which is used to mark the assignments of the students. In this section, the myUNISA system is described firstly and then the onscreen marking system is presented.

### **2.1 myUNISA System**

The myUNISA system is the core system which can be accessed by the students and the staff. It can be looked as an important interactive media between the students and the lecturers. This system includes many parts.

Using the myUNISA system, the student can buy download the electronic study materials, submit the assignments, apply bursaries, buy the prescribed books, find the important time schedules, and so on.

It should be noted that the myUNISA system also includes several subsystems except the onscreen marking system which will be described in next subsection. For example, there are forums for different modules and the students can use the forum to communicate with their classmates and lecturers.

### **2.2 Onscreen Marking System**

Assessing and marking student work is an essential part of the University of South Africa’s Open Distance Learning tuition model. Assessment can be a time-consuming activity especially when faced with the large numbers of students enrolled at UNISA. Assessing student work, providing meaningful feedback and comments is an invaluable contribution to students’ learning. Unfortunately, meaningful assessment is often neglected due to the burden of administrative tasks like adding

marks, completing class lists and distributing marked assignments to external markers and others. [7]

To address this challenge, UNISA ICT tasked Aesir, a South African software company, to assist the university in the development of an online toolset that makes digital marking, commenting and processing of assignments possible. [7]

Several tools were developed that allow for the following assessment functions:

- 1) Onscreen marking (inserting & counting tick marks or adding impression scores)
- 2) Adding comments (with a re-usable list of comments or individual comments, as required)
- 3) Rubric type marking (with pre-configured rubrics)

The first user interface is shown in Fig. 1 which gives the user some statistical data related to the current user. After clicking a certain module, the main user interface can be found as shown in Fig. 2 and the lecturers can operate the assignments. For example, the lecturer can put the assignments to the USB flash and go back home to mark them; and the lecturers can also directly send the marked assignments to the students without the help of support staff and the students can get their marked assignments without delay.

It is also very easy to mark the assignment after the toolset adds additional marking and commenting toolbars to the Adobe Professional 9 software, and the assignment can be marked with the Adobe Professional 9 and Adobe Air V1.5 products. For example, Fig. 3 showed the marking user interface and it could be found that the marking procedure is similar with marking the hard copies of assignments. Moreover, it is convenient to calculate the final mark as the calculation can be done by the software and there is no marking calculation mistake at all.

ACADPER	MODULE	Assign	my role	OUTSTAN.	MAXDAYS	LATE
20130	CAN4701	2	PRIML	4	na	na
20130	CAN4701	3	PRIML	49	na	na
20130	CANPRA4	1	PRIML	1	na	na
20130	CANPRA4	2	PRIML	0	na	na
20130	DCS401E	2	PRIML	3	na	na
20130	DCS401E	3	PRIML	32	na	na
20130	DPJ391U	1	SECDL	0	na	na
20130	DPJ391U	2	SECDL	7	na	na
20130	DPJ391U	3	SECDL	61	na	na
20130	DPJ391U	4	SECDL	1	na	na

Fig.1. Onscreen marking user interface with statistical data

STUDNO	SURNAME	PROGRESS	RKR	ALLOCATED	FILE_TYPE	MARK	Select Assig.
35025492	DLAMINI	In Progress	8330	20130905	pdf		
36907197	HLUGGIN	In Progress	8330	20130903	doc		
37645302	VENHIER	Sent to students	8330	20130904	pdf		
37384775	MATHEB	flashdrive	8330	20130904	pdf		
39083616	DE CAR	Cancelled	8330	20130906	pdf		
39245633	MINGA	Archive for submitted document	8330	20130905	pdf		
46746933	AGBUBGE		8330	20130904	pdf		
46083553	PASIPAMIRE	20130906 9342570	90170830	20130906	pdf		
48484111	KOETER	20130905 9306259	90170830	20130905	pdf		
47221143	WHLITSEWANE	20130905 9315733	90170830	20130905	pdf		
47781106	NTOMBELA	20130909 9365734	90170830	20130909	pdf		
48039330	CHITSUNGO	20130905 9316762	90170830	20130905	pdf		

Fig.2. Main Onscreen marking user interface

Based on this onscreen marking system, the managers can also easily get the reports about the marking statistics of individual module or a certain department, school or college.

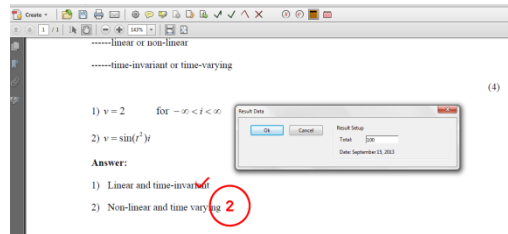


Fig. 3. Marking User interface

### 3 Challenges of E-education

#### 3.1 New Student Problems

For the academic year 2012, there were 5171 first year students registered for the Diploma in Information Technology, School of Computing in UNISA. Of the 5171, 151 were under 19, 1255 between the age 30 to 39, 21 between the age 50 to 59 and 3 that were over the age of 60. Students belonging to a particular age group have different expectations and needs. One of the greatest challenges facing UNISA is how to deal with such a variety of 'new' students [5][6]. The similar problems also happened in other schools. To solve this kind of problems, we must find the different requirements of different students. Hence some surveys should be done based on the website and the university should prepare to solve the general requirements using generic methods. For some specific requirements, some specific channels should be published on the website so the students are not blinded.

#### 3.2 Experiment Based E-education

Students can pass the subjects which do not require experiments. However, some subjects require the student to do experiments or practical works. It is difficult for the students to successful reach the outcomes for certain modules without going to laboratories or spend little time in laboratories to do experiments. The pass rates can be an evidence to show the effects is some lower than no experiment based e-education. There are six colleges in UNISA and the College of Science, Engineering and Technology (CSET) is the college with the lowest pass rate[3]. What is the reason for this result? This college has three schools: School of Science, School of Computing and School of Engineering. Most of the subjects of CSET need do more practical works and require higher science background than the subjects of other college such as college of law. This could be reason of lower pass rate.

To solve this problem, some experiments can be replaced by simulation based on computer and some important experiments should be done by the students in laboratories. Hence, UNISA built many laboratories in the Florida Science campus and UNISA contracted several universities or institutes for UNISA students to do experiments in other universities or institutes. Moreover, some experiment kits are sent to student to do experiments and the finalized kits with the reports are sent back to be marked. As can be seen from Fig. 5, the pass rate of CSET has increased from the year of 2011 as more efforts had been done to improve effect of e-education such as encourage the lecturers to give video or venue based classes, develop more learning materials, be more active to contact the students, and so forth.

Besides the mentioned two challenges, there are still many challenges for e-education such as postgraduate study, how to making sure the students can achieve high study efficiency and son on, and they need to be deeply investigated.

#### 4 Conclusion

This paper described the current system of e-education of UNISA. It can be found that there are many advantages using this system although there are still some flaws. Moreover, the e-education system can make the management easy as managers can easily get the reports about the marking statistics. It is also shown that there are trends in higher education universities or institutes that the e-education also learns a lot from residential universities to achieve good teaching and learning effect especially for the experiments based e-education.

**Acknowledgements.** This work was supported by China/South Africa Research Cooperation Program (No. 78673), South African National Research Foundation Incentive Grant (No. 81705).

#### References

1. Goosen L., Naidoo L., The Changing Role of Academics in ODL with regard to Academic Student Support using Technology-Enhanced Learning, Book of Abstracts of the CSET ODL Conference, Magaliesburg, South Africa, 5-6 Sept. 2013: 16-17.
2. The leading ODL university, <http://www.unisa.ac.za/>
3. Barnes G., Towards Setting Targets for Module Success: Phase 1 – Trend Analysis, <http://tinyurl.com/pd3h8z4>
4. Cant, M. C. & Bothma, C. H. 2010. The learning technology conundrum: Lecturers' perspectives. *Progressio*, 32(1):55-73.
5. Naidoo, L., First year UNISA students: Who are they? What are their expectations? Where are they from? Why UNISA?, Book of Abstracts of the CSET ODL Conference, Magaliesburg, South Africa, 5-6 Sept. 2013: 30-31.
6. Oblinger, D., Understanding the new students. *Educause*, July/August 2003, 37-45.
7. The Unisa Tool for Onscreen Marking (UTOM), <http://www.unisa.ac.za/Default.asp?Cmd=ViewContent&ContentID=23049>