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Issues Affecting e-Learning Practices at North-West University, Mafikeng Campus

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Abstract: The assumptions that electronic learning (e-Learning) is a recent initiative is a common misunderstanding. It can be argued that e-Learning came into existence in the 1950's. This fact has to be taken into consideration when we think through the recent exciting innovation trends that take advantage of internet technologies particularly in the environment of open distance learning. This study investigated issues that affect e-Learning practices at the North-West University, Mafikeng Campus. Quantitative research methodology and descriptive statistics were used in this study. The activity theory was used as a theory guiding the study. The study investigated the issues affecting the use of e-Learning at the NWU.

Key words: e-Learning, information and communication technology, virtual learning environment, open distance learning, theory, activity

INTRODUCTION

e-Learning has drawn an important degree of attention to educational institutions, educational systems, software developers and business organizations because of the educational benefits and the cost benefits (Lee *et al*., 2009). e-Learning is an idea resulting from the usage of Information and Communication Technologies (ICTs) to review and improve traditional teaching and learning models and practices that have grown in the past years. This development was led by the increase in development of the information society and this had a serious impact on the global economic and socio-cultural development. Researchers in the field still debate that, the emergence of e-Learning needs to be tested periodically because it is still in the early stages (Lee *et al*., 2009).

e-Learning can be used to transform education where it provides opportunities to individuals to learn anytime at any place. e-Learning provides access to resources and also the other way of communication and virtual communities (Khan, 2005). e-Learning technology is used for a framework warehouse and managerial purposes (Conole, 2004; Morrison and Khan, 2003).

According to Conole (2004), there is a wealth of digital resources and it has also been identified that Information and Technology Communication tools can support the e-Learning and teaching. The e-Learning environment comprises of teaching-learning arrangements in which the student (learner) and instructor (teacher) are normally separated geographically and to focus on the special nature of course design, learning and instruction under such circumstances. The most important characteristic of all e-Learning is that communication between students (learners) and instructors (teachers) is done by sending of e-Mails or writing documents and by electronic media. A second important characteristic of distance education arises from the first.

The methods of classes or lessons being broken down into its essential parts, some or all of these are organized away from the student and communicated to the learner by the means of communications technology, with the probability of interaction between the student and an instructor so being done through communications technology (Liaw *et al*., 2007).

Background and context: The study investigated the issues that affect the e-Learning practices at NWU (Mafikeng Campus) because the university was willing to go through introducing the open distance learning. Open distance learning is a unique way of distance learning which is also called supported open learning. This means individuals can study on their own, either at home or any place by reading watching or listening to material provided, undertaking activities and doing assignments with the regular support of the instructor/facilitator.

Open Distance Learning (ODL) is highly dependent on the e-Learning. e-Learning is studied thoroughly by looking to all the elements and the components of e-Learning and identifying the NWU ODL requirements which fit in with the e-Learning

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requirements. The study was done with academic staff members and student from various faculties across the campus.

Overview of e-Learning

Definition of e-Learning: The term e-Learning has been used in education since, from the middle of 1990's. There is no one definition that is clearly identified to be an agreed definition (Lee *et al*., 2009). e-Learning is the use of Internet in education even though it does not describe the other most important essential features of e-Learning. The methods on how programmes are being offered is very important and e-Learning is referring to as online learning (Ellaway and Masters, 2008).

e-Learning builds up progressively more work as the most essential infrastructural characteristics of universities that allow instructors to deliver the course content to students with diverse representation or illustrations of knowledge and to improve communication between instructors and students and amongst students themselves (Mahdizadeh *et al*., 2008).

Some researcher's outlook e-Learning as the enhanced delivery mode of teaching and study material through the use of electronic media such as the internet, intranets, extranets, satellite transmissions, video or audio recordings (Lee *et al*., 2009). Examples of definitions include: guidelines provided through the electronic media including the internet, intranet, extranet, satellite broadcasts, audio/video, interactive TV and CD-ROM (Kahiigi *et al*., 2008).

Education in this mode is enabled by internet and www technologies, provided through end-user computing that provides connection between people and information and generates chances for societal learning (Kahiigi *et al*., 2008).

Importance of e-Learning: Today IT is regarded as a solution to help universities save costs and deal with quality problems. In terms of teaching and learning information technology is giving the universities an opportunity to transform how the university students can improve their learning by making use of more present, well-organized and active alternative such as e-Learning (Selim, 2007). Students who are making use of Information and Communication Technologies (ICTs) are using e-Learning and this collaborative technology maintains few of listed capabilities (Al-Harbi, 2011):

- Gives students the right to use electronic versions of study materials which are difficult to get locally
- Internet access allows students to search for information and to receive transactional services
- Access to organized information and directions to the other support learning materials representations of scientific systems can be attained
- Provides a communication platform for students to interaction with other students and instructors
- Electronic devices also support disabled students

For being able to put this in use there must be a learning application that should be brokered into higher education. Each one is made up of different kinds of interactions there should be a connection to internet for access to services for example in order to access news, blog, online auctions, self-testing websites and tutorials. This would also be achieved by means of combining applications (Al-Harbi, 2011). A learning environment can be embedded with a webcam for astronomy students or a computer-aided device can be installed in a role-play environment for students. The unlimited benefits of e-Learning consist of improving the communication between students and instructors and students among themselves despite of time and space (Sun *et al*., 2008).

The study reviews the general characteristics of e-Learning environment, issues and some of the challenges faced by the institutions concerning the e-Learning. The study identifies and explores whether, the university is ready for e-Learning by looking at the status of their IT infrastructure for e-Learning whereby, it should be identified whether the university can have a successful e-Learning implementation.

The main purpose of this study is to identify all the components and elements of e-Learning systems to identify the principal stages for e-Learning in the organization or different universities and at the end the study aim at identifying through the investigation this issues affecting the e-Learning practices in the university. The study focuses on the following two objectives:

- To identify the benefits of using e-Learning
- To identify issues affecting the use of e-Learning at NWU-Mafikeng

Critical Success Factor (CSF) of e-Learning: These words were initially used in the literature during the years of 1980's when there was a concern about why some of the organizations were failing and some were more successful (Selim, 2007). According to Freund (1988), the critical success factors are described to be activities or actions that must be executed by the company to be successful and it was identified that the CSFs should be measureable and should also be counted and be controlled.

Distance learning was studied from the macro viewpoint and proposed some CSFs that can help faculties and universities in learning development. The critical success factors include the intellectual property, relevancy of the course for e-Learning, content for e-Learning course, maintenance of e-Leaning course, the e-Learning setting and a way of evaluating the success of the course offered on the e-Learning systems. According to Papp, the CSFs should be studied individually and also as a combination in order to determine the factors that influence and has impact on the success of e-Learning.

Benigno and Trentin (2000) proposed a framework that can be used to assess the courses offered through e-Learning systems by concentrating on two sides: firstly is to assess the learning and secondly to assess the performance of the students. They were taking into consideration factors such as how the students interact with each other, the operative support, course material, learning environment and information technology.

Theoretical framework: Theories are well-defined to be the descriptions of a natural or social behavior, the occurrence or phenomenon (Bhattacherjee, 2012). Theories are there to be responsible for a clear observation why certain events or certain things happen, by describing or predictions and it was highlighted that, it is possible to predict the events or the behavior using a set of predictions without even explaining the reason why such events are taking place (Punch, 2005).

This study is driven by the Activity Theory (AT). The AT discloses the boundaries amongst e-Learning at the macro-organizational level (plan, guiding principle, campus-wide solutions) and micro-organization (daily functioning practice, collaborative transformation, specific adaptation) (Benson *et al*., 2008). Murphy and Rodriguez-Manzanares (2008) have defined Activity Theory (AT) as "the best kept secret in academia". It is a framework that offers the most integrated explanation of plans on the nature and the development of human behavior.

For technological use AT permits individuals to move from computers as an attention of concern but by also understanding technology as part of scope of human activities. Activity theory is a conceptual framework that permits bridging the gap between motivation and action by proving with a clear interpretation for procedures at different ranks of acting in the world (Blin and Munro, 2008).

The model structure of activity system is composed of the interacting components of subject, object tools, division of labor, community, rules and outcomes (Murphy and Rodriguez-Manzanares, 2008) (Fig. 1).

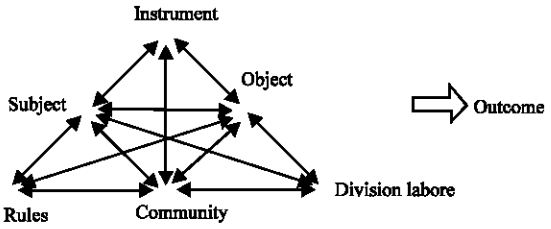

Fig. 1: Components of activity system (Murphy and Rodriguez-Manzanares, 2008; Benson *et al*., 2008)

Activity is regarded as a collective system that is determined by an object and an intention that a subject is following. Activity is performed by a series of actions to accomplish an object. Subject of an activity system is the individual or group whose perspective is accepted this answer a question of who is involved throughout the activity. Object talk about the raw material at which the activity is directed and which is shaped or changed into results with the help of physical and symbolic, external and internal tool. It precedes and motivates activity by answering the question of why is the activity being taking place.

Tools assist the object of activity. They can be external, material (e.g., a textbook, a computer) or internal, symbolic (e.g., language). Tools take a share in the change of the object into an outcome which can be preferred or unexpected. They can allow or force activity, this answer a question of by what means are the subjects going to perform the activity.

Community talk about the members of an activity system who share the same object and it also, refers to the environment on which the activity is going to be carried out, e.g., students and staff members.

Division of labor consist of the separation of tasks and roles among members of the community and the separations of control and status and this addresses what needs to be done when is it to be done and who is responsible for that activity, e.g., lecturer, programme manager and rector.

Rules are clear and understandable standards that order activities and interactions within the system, this is simply addressing the norms, rules, regulations that might be governing the use and performance of the activity. Outcome refers to the expected results of the activity that has been performed, it answers the question of what are the anticipated results of the activity being carried out.

MATERIALS AND METHODS

For this study, a quantitative method was used. Quantitative data can be arranged in numbers in a recognized, objective organized procedure to attain information and to describe variables and their

associations (Creswell, 2008). A quantitative approach is the one in which the researcher primarily uses post positivist entitlements for development of knowledge (i.e., use of measurement and observation and the test of theories), engage strategies of investigation such as experiments and surveys and collects data on predetermined instruments that yield statistical data (Creswell, 2008).

The sample data for this study was collected at the North West University (Mafikeng Campus) in the area of South Africa, data was gathered from students and academic staff across different faculties. Every student and the academic staff member of the Mafikeng Campus, North West University who was willing to participate received a questionnaire.

Simple random sampling technique was used, 375 questionnaires were distributed to the campus reading lab which is composed of first to fourth year undergraduate students. From 375 questionnaires which were distributed 96% (361) were returned. The electronic questionnaire was distributed via. e-Mail to the academic staff members and 83 participated on the survey. It should be taken into consideration that this study is an example of descriptive statistic application.

Research is conducted with the aim of "knowing more" from the "less know" (Payne and Payne, 2004), data is not collected without prior information to reflect on. Hypotheses permit us to define if our theory is correct by conducting a research (Payne and Payne, 2004) descriptive hypotheses mean statements about events e.g., something is happening and rational Hypothesis describe the prediction that two or more variables are related in a particular way. This study used the descriptive hypotheses for a simple exploration and gathering of facts.

- Null hypothesis (H_0): using e-Learning systems has no effect on the improvement of teaching and learning
- Alternative hypothesis (H_A): the use of e-Learning systems improves teaching and learning

Even though research hypotheses are never articulated in the question form, research questions are transformable to research hypotheses. A hypothesis normally directs one to an imaginable influence of the problem variable by another variable (Nenty, 2009).

RESULTS AND DISCUSSION

Responses: Table 1 and 2 represent the majority of responded were female for both students and academic staff members. In Table 2, one respondent did not identify the gender.

Table 1: Gender of participants (students)

Gender	Frequency	Percent	Valid (%)	Cumulative (%)
Male	168	46.5	46.5	46.5
Female	193	53.5	53.5	100.0
Total	361	100.0	100.0	

Table 2: Gender of participants (academic staff)

Gender	Frequency	Percent	Valid (%)	Cumulative (%)
Male	37	45.1	45.1	45.1
Female	45	54.9	54.8	100.0
Total	82	100.0	100.0	

Table 3: Age of participants (students)

Age	Frequency	Percent	Valid (%)	Cumulative (%)
17-31	354	98.1	98.1	98.1
32-41	7	1.9	1.9	100.0
Total	361	100.0	100.0	

Table 4: Age of participants (Academic staff)

Age	Frequency	Percent	Valid (%)	Cumulative (%)
18-29	15	18.1	18.1	18.1
30-44	39	46.9	46.9	65.0
45-59	20	24.1	24.1	89.1
60+	9	10.8	10.8	100.0
Total	83	100.0	100.0	

Table 5: Faculty of respondents (student)

Faculty	Frequency	Percent	Valid (%)	Cumulative (%)
Law	20	5.5	5.5	5.5
Human Social Sciences	87	24.1	24.1	29.6
Agriculture Science and Technology	106	29.4	29.4	59.0
Education	52	14.4	14.4	73.4
Commerce	96	26.6	26.6	100.0
Total	361	100.0	100.0	

Table 6: Faculty of respondents (Academic staff)

Faculty	Frequency	Percent	Valid (%)	Cumulative(%)
Law	3	3	3	3
Human Social Sciences	18	21	24	27
Agriculture Science and Technology	21	25	25	52
Education	13	15	15	67
Commerce	28	33	33	100.0
Total	83	100.0	100.0	

Table 3 and 4 represent the age of responded. In Table 3 majority of the respondents are between 18 and 31. In Table 4 majority of the respondents are between 30 and 44 age group.

Table 5 and 6 represent the faulty of the respondents were majority of students participated are from the Faculty Agriculture Science and Technology. The majority of academic staff members who participated on the survey are from the faculty of commerce and administration.

The objective of the table above was to determine the benefits of using e-Learning at NWU. The far right column shows the majority of the respondents for each

Table 7: Benefits of using e-Learning (students)

Question Statement	Strongly agree	Agree	Neutral	Disagree	Strongly agree	Majority response
Adopting e-Learning benefits the students financially	14.4	24.1	39.1	10.0	12.5	39.1 neutral
Adopting e-Learning benefits the university financially	19.9	30.2	38.8	5.5	5.5	50.1 agree
Adopting e-Learning benefits the university operational/operations	24.4	34.6	38.5	2.2	2.2	57.1 agree
Adopting e-Learning improves the communication among the students and the instructors (lecturers)	37.1	39.9	17.5	4.2	1.4	77.0 agree
e-Learning benefits the community by giving people an opportunity to further their studies	24.9	31.9	32.1	5.3	5.5	56.9 agree
Adopting e-Learning helps the university to manage its resources	27.1	41.0	27.1	2.2	2.5	68.1 agree
Adopting e-Learning helps the university to share resources	24.9	34.3	36.3	1.9	2.5	59.3 agree
Adopting of e-Learning enhances public education	17.7	41.6	34.6	2.8	3.3	59.3 agree
Adopting e-Learning helps the university to reduce the printing costs	29.4	33.5	27.4	4.2	5.5	62.9 agree
Instructors frequently update information on eFundi	23.8	25.5	33.0	8.6	9.1	49.3 agree
Information on eFundi is provided in different formats, e.g., excel, word, PDF, etc.	53.2	29.9	12.2	3.0	1.7	83.1 agree

Table 8: Benefits of using e-Learning (Academic staff)

Question Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Majority response
Adopting e-Learning benefits the students financially	33.33	44.44	13.89	6.94	1.39	77.78 agree
Adopting e-Learning benefits the university financially	43.66	30.99	18.31	4.23	2.82	74.65 agree
Adopting e-Learning benefits the university operational/operations	40.85	40.85	14.08	4.23	0.00	81.69 agree
Adopting e-Learning improves communication among the students and the instructors (lecturers)	56.94	26.39	9.72	6.94	0.00	83.33 agree
E-learning benefits the community by giving people an opportunity to further their studies	36.11	41.67	15.28	2.78	4.17	77.78 agree
Adopting e-Learning helps the university to manage its resources	41.67	38.89	13.89	4.17	1.39	80.56 agree
Adopting e-Learning helps the university to share resources	45.83	41.67	9.72	2.78	0.00	87.50 agree
Adopting of e-Learning enhances public education	35.21	32.39	25.35	7.04	0.00	67.61 agree
Adopting e-Learning helps the university to reduce the printing costs	54.17	29.17	9.72	2.78	4.17	83.33 agree
Instructors frequently update information on eFundi	14.29	35.71	27.14	11.43	11.43	50.00 agree
Information on eFundi is provided in different formats, e.g., excel, word, PDF, etc.	31.43	40.00	20.00	7.14	1.43	71.43 agree

Table 9: Issues affecting e-Learning (students)

Question/Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Majority response
Lack of IT personnel skills	7.8	18.0	31.3	18.8	24.1	42.9 disagree
Lack of skilled academic personnel	6.1	16.6	33.2	21.9	22.2	44.1 disagree
Implementation cost	10.2	21.3	47.6	8.6	12.2	47.6 neutral
Lack of support from the academic staff to students	10.8	18.6	30.5	19.1	21.1	40.2 disagree
No e-Learning system's training is offered to students and staff	7.2	11.9	25.8	27.1	28.0	55.1 disagree
Lack of internet access	5.3	8.6	18.6	32.1	35.5	67.6 disagree
Lack of skilled personnel to compile e-Learning study material	5.3	8.6	33.0	25.2	25.8	51 disagree
No learning material in local languages, e.g., Zulu, Afrikaans	25.8	17.2	22.2	17.5	17.5	43 agree
Lack of technological infrastructure/resources	10.5	10.2	32.7	22.7	23.8	46.5 disagree

question or statement. With this results it shows that, implementing e-Learning would be a good idea as it will benefits both the university and students in different ways (Table 7).

The objective of the table results above was to determine the benefits of e-Learning. The far right column shows the majority of the respondents for each question or statement. From the 83 respondents the overall results shows that academic staff members agrees that e-Learning is a good idea can be practiced as it will benefit the university, students and the community (Table 8).

The objective of the table results above was to determine issues affecting e-Learning practices at NWU-Mafikeng Campus. The far right column shows the majority of the respondents for each question or statement. The results shows only few of the identified factors are affecting the practice of using. According to students implementation cost and unavailability of study material in local languages might be the factor to affect the practice e-Learning. The results shows that, all the identified factors are not preventing North West University-Mafikeng Campus to use e-Learning (Table 9). The objective of the table results above was to determine issues affecting e-Learning practices at NWU-Mafikeng Campus. The far right column shows the majority of the respondents for each question or statement. The results shows only few of the identified factors are affecting the practice of using. According to the Mafikeng campus academic staff no enough training on e-Learning management is offered to the students and there is also a

Table 10: Issues affecting e-Learning (academic staff)

Question/statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Majority response
Lack of IT personnel skills	12.86	10.00	21.43	37.14	18.57	55.71 disagree
Lack of skilled academic personnel	14.29	14.29	20.00	31.43	20.00	51.4 disagree
Implementation cost	4.35	5.80	31.88	39.13	18.84	57.97 disagree
Lack of support from the academic staff to students	14.29	21.43	21.43	31.43	11.43	42.86 disagree
No e-Learning system's training is offered to students and staff	21.43	34.29	18.57	21.43	4.29	55.71 agree
Lack of internet access	27.14	28.57	15.71	14.29	14.29	55.71 agree
Lack of skilled personnel to compile e-Learning study material	18.57	18.57	18.57	30.00	14.29	44.29 disagree
No learning material in local languages, e.g., Zulu, Afrikaans, Tswana, etc.	11.43	14.29	24.29	24.29	25.71	50.00 disagree
Lack of technological infrastructure/resources	20.00	18.57	21.43	28.57	11.43	40.00 disagree

lack of internet access factor. According to the overall factors analyzed above are not preventing university to practice e-Learning (Table 10).

The aim of the first proposed question was to identify the benefits of e-Learning. There were eleven sub-questions that were asked to address the proposed question. The results shows that, form 361 student's respondents 39.1% are not sure whether adopting e-Learning at Campus University would benefit students financially. The other ten questions that were asked of students show that students agree that all e-Learning would benefit the university financially, operationally and it would also improve communication between students and instructors.

Out of 83 of academic staff respondents the results shows that they agree e-Learning will benefit the students financially and the university financially and operationally. They also agree that e-Learning would benefit the students and instructors by improving communication. e-Learning will benefit the university by allowing the sharing and managing of resources by reducing the printing costs. It would also be beneficial to the community by giving people an opportunity to further their studies.

Based on the results both the students and academic staff members respondents agree that e-Learning would benefit community, students, university, academic staff and the public in different ways by implementing it.

The aim of the second proposed question was to identify issues affecting e-Learning practices. There were nine sub-questions that were asked to address the proposed question. Out of 361 students respondent 47.6% were not sure whether, implementation costs were one of the issues affecting the practice of e-Learning. The results also show that, according to the students all other identified factors are not affecting the use of e-Learning practices. The respondents (43%) agree that there is no learning material in local languages, e.g., Zulu, Afrikaans, etc.

From 83 academic staff respondents 55.71% agreed that the university was not offering training to students and staff members on e-Learning systems and also 55.71% agree that there is lack of internet. This means both the identified factors might be having impact on e-Learning practices. The results further show that, according to academic staff members, the other identified factors may not have effect on the e-Learning practices. Testing the hypothesis: out of the population sample of 444 majority of students and academic staff respondents have indicated that they are using e-Learning, they find it helpful and information they are looking for is always available on the e-Learning management system of the university (eFundi).

The majority of the respondents indicated that e-Learning improves communication among the students and instructors, e-Learning can benefit the community by allowing people to further their studies and help the university to share resources. It also enhances public education and with the e-Learning systems information or learning material is available in different formats. This means the null hypothesis is not accepted and the alternative hypothesis is accepted because the respondents agreed that using e-Learning it does improve the teaching and learning.

Activity theory in consideration of NWU e-Learning environment: The activity theory consist of six components which build up the e-Learning environment. As the paper determines the issues affecting e-Learning practices, the components were tested by formulating specific questions to address each component. Tools that assist the object of activity, these may include external and internal material (textbooks and computer, language). Tools lead to the change of the object into an outcome. Rules are clear and understandable standards that command activities and interactions within the system by addressing the norms, rules, regulations that might be governing the use and performance of the activity.

eFundi is regarded as an object which is used by academic staff members and students, to perform activities and this activities should be determined by an

object and the subject, e.g., announcement, sharing of study material, assignments, test, etc. Community talk about the members of an activity system who share the same object and it also, refers to the environment on which the activity is going to be carried out, e.g., students and instructors. Division of labor consist of the separation of tasks and roles among members of the community and the separations of control and status, this answer addresses what needs to be done when is it to be done and who is responsible for that activity, e.g., lecturer, programme manager, director and rector.

CONCLUSION

This research study was an attempt to determine the issues or factors affecting e-Learning practices at the university campus. The university should consider increasing their computers because according to student respondents the university does not have enough computer resources. The university should also consider buying computer resources that consumes less power.

RECOMMENDATIONS

It would be recommended that the university should encourage the academic staff members to use the e-Learning platforms available which would enhance their teaching and learning, same as the student need to alert about the available resources that would improve their learning.

Overall the university should also consider having study material in other local languages which will give student an option to choose which language they would prefer for their study material. According to the academic staff, there is no training provided to staff and students, this recommend that the university would ensure that, it offers more training to the users on how to use the available e-Learning management system and inform the users about other available e-Learning platforms.

Based on the results the majority of the respondents agree that e-Learning is helpful, it can benefit the community, student, academic staff and the university as a whole. Information Communication Technology (ICT) is used to provide course material for education and training, e-Learning tool or technologies which also consist of a number of technologies which can be used which determines the way in which learning is delivered regardless of the environment in which they are adopted (Kahiigi *et al*., 2008).

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