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# Task 8: Cloud computing and e-learning

According to Bosamia and Patel (2016) e-learning is an instrument that is associated to the virtualized distance learning by means of electronic communication mechanisms, specially the internet to improve the traditional learning system therefore e-learning system require a lot of software and hardware resources, because of the demand on these software and hardware majority of institutions are unable to cope with these investments and environments that is why cloud computing will be the best solution for them. Cloud computing can provide support to e-learning systems because education plays an important role to our personal growth. Cloud computing and e-learning offers the model of virtual teaching and learning method. E-learning together with cloud computing provides an environment where users only require a computer or a cell in order to learn and users can access the data on cloud anytime and anywhere, and they can also interact with each other (Bosamia and Patel 2016). Furthermore Bosamia and Patel (2016) mentioned that the other important information about e-learning using cloud computing is that you don’t require premises and there is also no duration for teaching. Bosamia and Patel (2016) stated the following benefits for using cloud computing for e-learning.

* The cost and time are reduced
* There is a wide participation
* It also accommodate different learning styles and levels
* It also has a positive impact on both learners and tutors and also on educational system
* The technology is effective in other words the feedback is received immediately.

## The benefits of cloud computing for e-learning to the learner

* You learn 24/7 anywhere as long as there is access to computer and internet connection and also the cost and time for travelling is reduces.
* You learn at your own pace, and that will reduce the level of stress.
* It gives student confidence and also motivate them
* It is also easy to access study material that is provided by the tutor
* There is also an option for students to select learning materials that meet their interest and also level of interest.
* Opportunity to skip a topic that you already have an understanding on it.
* Able to take on line exams and courses
* Learner can submit the assignment or projects to the tutor anywhere.

## Benefits of cloud computing for e-learning to the tutor

* It is easy to distribute the course material.
* Able to track results of a learner
* Various resources are accessible easily.
* Communication with learners is easy.

## Benefit of cloud computing for e-learning to the institution

* There is no cost for building institutions or rent because learning is online
* It is easy to track and also prove the progress for tutors and learners
* The data is centralized.

Bosamia, M. and Patel, A. (2016). AN OVERVIEW OF CLOUD COMPUTING FOR E-LEARNING WITH ITS KEY BENEFITS. *International Journal of Information Sciences and Techniques (IJIST) Vol*, *6*. From <https://scholar.google.co.za/scholar?as_ylo=2016&q=cloud+computing+and+e-learning&hl=en&as_sdt=0,5> downloaded on 10/11/2017.

According to Bora and Ahmed (2013) education is the most important part of life and it is almost difficult for human beings to survive without education. Bora and Ahmed (2013) stated that the growth of e-learning is increasing access to ICT and cloud computing to deliver the services and offers appropriate network access, data resource environment and flexibility. Cloud computing support education institutions by ensuring that some of the challenges such as cost, security, privacy, accessibility, effective and quick communication and flexibility are resolved Bora and Ahmed (2013). The interesting application of cloud computing is educational cloud that is able to focus on thousands of computers on one problem and also allows researchers to search and find models and make discoveries faster Bora and Ahmed (2013). Cloud computing can also assist universities to open their technology infrastructure to private, public sectors in order to do their research advancements. Cloud computing is efficient in a way that it can help universities to keep pace with the growing resource requirements and energy costs. Bora and Ahmed (2013) states that cloud computing can provide important gains by offering access to a wide range of different academic resources, research applications and educational tools.

Bora and Ahmed (2013) stated that when e-learning is used with cloud computing this is what will be experienced.

* The cost will be low; there will be no need to have high end configured computers to run the e-learning applications. The applications can run from cloud through their PC, Mobile phones, table PC by having minimum configuration with internet connectivity. Because the data is produced and accessed in the cloud the user does not need to use a lot of money by buying a large memory for storing of data in the local machine.
* Performance will be improved because most e-learning applications will be in cloud.
* Software updates the software updates will be done automatically because the cloud based application for e-learning runs with the cloud power.
* Students can take online courses, attend online exams and also get feedback about the course from instructors.
* Teachers are able to prepare online test for students and also assess the test send feedback and also communicate with students through online forums.

Bora, U.J., and Ahmed, M. (2013). E-learning using cloud computing. *International Journal of Science and Modern Engineering*, *1*(2), pp.9-12.From [https://pdfs.semanticscholar.org/c585/9727cf8118b25eb09c9466954968566b7fed.pdf 09/11/2017 downloaded on 09/11/2017](https://pdfs.semanticscholar.org/c585/9727cf8118b25eb09c9466954968566b7fed.pdf%2009/11/2017%20downloaded%20on%2009/11/2017)

Pocatilu, Alecu and Vetrici (2009), Education needs is increasing and it is necessary that e-learning solutions is improved in order to keep up with the pace of technology by introducing cloud computing. According to Pocatilu, Alecu and Vetrici (2009) Cloud computing consists of three layers and these layers are:

* Infrastructure as a service (IaaS) they use an e-learning solution on the providers infrastructure.
* Platform as a service (PaaS) they use and develop an e-learning solution based on the providers development interface.
* Software as a service (SaaS) they use e-learning solution given by the provider.

Pocatilu, Alecu and Vetrici (2009) cloud computing can move the processing efforts from the local devices to the data center facilities and that makes it easy for any device that is connected to the internet to be able to solve complex equations. Pocatilu, Alecu and Vetrici (2009) stated that what is important about cloud computing is that the cost of using it is low and sometimes free on other cases. Some applications such as spread sheet it is possible to use it in the offline mode then when the client goes back online the synchronization process will refresh the data (Pocatilu, Alecu and Vetrici 2009). It is possible to use devices that have minimal hardware requirements like mobile phone can be successfully used as cloud client. A client is able to reach the same results by using any internet connected device while the software requirements are minimum.

Pocatilu, Alecu and Vetrici (2009), stated that the other important thing about cloud computing is that for a person to become part of the cloud you do not have to download or install a specific software all is needed is the internet connection and that will allow students to be able to learn while they are at home or offices. Furthermore Pocatilu, Alecu and Vetrici (2009) stated that the most important thing about cloud computing using e-learning is that you do not have to worry about computer crashes because everything is stored into the cloud so no assignments or projects that can be lost.

According to Pocatilu, Alecu and Vetrici (2009) there is at least two entities that are involved in an e-learning system and these are students and trainers and they are doing different activities and these different activities are:

* They do courses online.
* They also write their exams online.
* They also receive the feedback online.
* They also submit their assignments or projects online.

The responsibility for the trainers is that:

* They make sure that the tests are prepared for the students when they are ready to write.
* They are responsible for the content management
* They ensure that there is a communication with students.
* Feedback is sent on all the work that was done by students to them.

Pocatilu, Alecu and Vetrici (2009) mentioned that cloud computing is also proving some security benefits for individuals and companies that are using e-learning solution and these benefits are:

* Improbability is improved because it is not easy for any person to know the location of the machine that stores some data or to know which physical component to steal in order to get digital asset.
* Virtualization it is possible to replace a compromised cloud located server without any major costs or damages.
* Data storage is centralized it is easy to connect a new client because everything is stored centrally unlike before where if a lap top is stolen then the whole information will gone.
* Monitoring of data is easy because only one place that needs to be supervised unlike before where a lot of computers were supervised and that was costing a lot of money and time because of the need for employing a lot of personnel.

It is advisable that upon development of e-learning we should not ignore the cloud computing trends.

Pocatilu, P., Alecu, F. and Vetrici, M.,( 2009), November. Using cloud computing for E-learning systems. In *Proceedings of the 8th WSEAS international conference on Data networks, communications, computers* (pp. 54-59). World Scientific and Engineering Academy and Society (WSEAS).From [https://pdfs.semanticscholar.org/032b/c59fa9016404484cf31eccabc2f0aef9372e.pdf downloaded on 09/11/2017](https://pdfs.semanticscholar.org/032b/c59fa9016404484cf31eccabc2f0aef9372e.pdf%20downloaded%20on%2009/11/2017).

Pocatilu,(2010)stated that cloud computing can allow the movement of processing effort from the local device to the data center facilities. Majority of education institutions does not have infrastructure and resources that are required to run top e-learning solutions and because of that an introduction of versions of the base applications that are cloud oriented were introduced (Pocatilu, 2010). According to Pocatilu, (2010) one of the benefits is that the client hardware can be a mobile device or a desktop computer while the client application can be a web browser or any dedicated application. Even with the limitations of the current software and hardware, mobile device are supporting multimedia based applications (Pocatilu, 2010). Due to the face that the data processing is on the server side makes the use of mobile devices for learning to grow faster. As we are aware that e-learning is an internet based learning process that uses internet technology to design, select, implement, and support but it cannot replace the traditional education methods it can only improve the efficiency of education. With a lot of advantages such as flexibility, diversity, measurement it can become the primary way for learning in the new century (Pocatilu, 2010).

Pocatilu, P., (2010). Cloud computing benefits for e-learning solutions. *Oeconomics of Knowledge*, *2*(1), p.9.from <https://pdfs.semanticscholar.org/7afe/135f078d560d5aa1aa6f93c330eb1f2dd4ce.pdf> downloaded on 09/11/2017.

Cloud computing offers low cost solutions to institutions when doing their research, this also gives benefits because browser based applications can also be accessed via mobile devices and is also available to a variety of laptop and desk top computers as long as the access to internet is available (Nasr,. and Ouf., 2011). Cloud computing supports the creation of new generation of e-learning that is able to run on different hardware devices while storing data on the cloud (Nasr. and Ouf., 2011). The demand of e-learning is increasing and that is putting a lot of pressure in educational institution so that they can keep the pace with technology. According to Nasr and Ouf (2011) cloud computing is an internet based computing whereby resources, software and information that is shared is provided to PCs and other devices. Cloud computing using e-learning allow users to access their personal information anytime, anywhere as long as there is access to the internet, when using cloud you are able to save your assignment or project in a computer in Gauteng and leave the computer there and when you need the information and by that time you are in Limpopo you will still be able to access that information as it was. It also allows people to study while they are in rural areas and still be able to submit their work for marking. Nasr, M. and Ouf, S.,( 2011) listed the following values for cloud computing for education.

* There is absolutely no need to back up everything a different drive in order to transfer it from one device to another.
* You do not have to stress about copying the data from one PC to another when obtaining a new PC.
* It is also a tool that is convenient to engage in the scholarship of learning and teaching.
* When you compare it with supercomputer level cloud provides a larger amount of processing power.
* There is no need of crash recovery because even if the computer crashes the data will be safe because it is stored in the cloud.
* Students are able to work from different places even when they are looking for the files it is easy to find them as long they have access to an internet and laptop.
* Majority of the software is free and ready to be used.
* Accessibility: it helps to ensure that data and services are available anytime they are needed.

Nasr, M. and Ouf, S., (2011). An Ecosystem in e-learning using cloud computing as platform and Web2. 0. *The Research Bulletin of Jordan ACM*, *2*, pp.134-140.From [http://ijj.acm.org/volumes/volume2/no4/ijjvol2no4p3.pdf downloaded on 09/11/2017](http://ijj.acm.org/volumes/volume2/no4/ijjvol2no4p3.pdf%20downloaded%20on%2009/11/2017).

**Task 9: E-learning readiness**

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| **Article (full reference)** | **Purpose of the research** | **Research method** | **Research setting/context** | **Findings** | **Conclusion/s** |
| So, T. and Swatman, P.M., 2006. e-Learning readiness of Hong Kong teachers. *University of South Australia*. | The purpose of the research is to determine the readiness of Hong Kong primary and secondary school teachers based on using new technology in the classroom, incorporate e-learning into their teaching and find what factors are influencing their readiness. | A survey, a questionnaire with 29 questions will be sent to 200 teachers of primary and secondary schools between December 2004 to January 2005. Items will be measured on a five-point Likert scale, with 5 indicating “strongly agree” and 1 indicating “strongly disagree”. About 148 questionnaires completed and returned and it was 131 that were valid. | The data was collected in University of South Australia. | Primary school teachers differ from secondary school teachers to this matter of e-learning readiness. Though the amount of time in terms of IT training in relation to time and opportunity is given to both primary and secondary school teachers by the EMB is the same, the primary teachers believe that there no less about what e-learning is compared to the secondary colleagues. They believe that students from primary do not have the required IT skills so that they can use e-learning technologies. | It was noted that EMB need to think about providing extra help to principals and primary school teachers. Because of lack of experience of acquaintance with PC’s, they should have more technical support and in-service training in order build confidence in incorporate IT into their regular teaching. It was also mentioned that the discussion of using IT in education should be stressed in school principal training platforms to ensure that they the leadership role is adopted so that the new curriculum and promoting the use of IT in teaching and learning is developed.it also appeared that when there is a suggestion about the development of teacher, the gender for professional development should be taken into account, in order to provide for the particular needs of female teachers in computer education. Training for teachers should be made available everyday than to have it once after sometime, in order to increase IT knowledge. Ya’acob, Nor & Azman (2005).advised that more resources should be in place so that individuals are able to receive support from parents when using e-learning at their home and also ensure the training programs for parents is in place. Internet access and the need to overcome the digital divide are the two critical issues to that we need to pay attention to before e-learning can be completed and efficiently applied in Hong Kong schools. |

So, T. and Swatman, P.M., (2006). E-Learning readiness of Hong Kong teachers. *University of South Australia*. From <https://scholar.google.co.za/scholar?hl=en&as_sdt=0%2C5&q=e-Learning+Readiness+of+Hong+kong+teachers&oq=e-Learning+Readiness+of+Hong+Kong+Tea> downloaded on 10/11/2017.

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| **Article (full reference)** | **Purpose of the research** | **Research method** | **Research setting/context** | **Findings** | **Conclusion/s** |
| Lopez, C., 2007. “Evaluating E-Learning Readiness In A Health Sciences Higher Education. | The purpose of the study is to assess the readiness of Higher Education Institution and reports the results of its application in ESTSP, a Porto’s Allied Health Sciences Higher Education Institution in terms e-learning readiness . | Observation and Surveys through questionnaires.273 students responded the questionnaire and that resulted in 17% rate response | The data was collected in ESTSP, Instituto Polite’cnico do Porto Praca Coronel Pacheco, 154050-453 PORTO | Students frequently complained about the lack of computers to use when they are out of classes In terms of ICT infrastructures.  ESTSP has only 3 classrooms with a total number of 58 computers, and the access is only limited to classes. Students that are not in classes will only have access to a small number of computers (around 8) that live in ESTSP’s library. | For e-learning strategy to be successful the institution requires more than choose/develop and implement. Technology must be used in its fullness by all that benefit from it In order be successful. There should be a strategy to reduce change’s resistance in the organization leading to full ICT integration is needed in order to do so. Evaluation of an e-learning readiness can assist to find important features that can be used to achieve its goals and to know where it should invest .The study allowed to attenuate the fear about the lack of student’s access to computers and to the internet; discover the need to the improvement of the technological infrastructure; detect the need of professors’ ICT training and technological support and recognize professors interest and openness towards e-learning. This instrument could influence the top-level administration of an e-learning strategy the importance and also collect its approval. |

Lopez, C., (2007). “Evaluating E-Learning Readiness In A Health Sciences Higher Education. From <https://scholar.google.co.za/scholar?hl=en&as_sdt=0%2C5&q=Evaluating+E-Learning+readiness+in+a+health+sciences+high+education+institution&btnG>= downloaded on 10/11/2017.

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| **Article (full reference)** | **Purpose of the research** | **Research method** | **Research setting/context** | **Findings** | **Conclusion/s** |
| Parkes, M., Stein, S. and Reading, C., 2015. Student preparedness for university e-learning environments. *The Internet and Higher Education*, *25*, pp.1-10. | The purpose of the research is to discover whether the students within the context of the university of e-learning environment are prepared. | A web based survey was used with 58 e-learning skills based to their student preparedness using a process known as Hybrid BARS. | A.  The study was conducted in School of Education, University of New England, Armidale 2351, NSW, Australia  B.  Distance Learning Of  fice, University of Otago, Dunedin 9054, New Zealand | It was identified that when checking the the e-learning skills according to “Very Prepared’,Prepared’, and ‘Poorly Prepared’, showed an overall low level of perceived student preparedness with no e-learning skills for which students were identified to be ‘Prepared’ and 35 skills for which students were identified to be ‘Poorly Prepared’. For the 23 skills for which students were identified to be ‘Prepared’, skills to both ‘management of learning’ and the ‘e-learning environment’ and the ‘interaction with the e-learning community’ classes were well represented with 11 and 10 skills in the class respectively. | It was found that the study provided proof that learning in the e-learning environments established in accordance with social constructivist principles can be challenging. The study showed that there are four issues that have significant implications to the broader e-learning context. In an e-learning environment the  Students considered themselves not prepared in terms of balancing work, social, family and study lives. The preparedness level of students that were recognized for a range of e-learning competencies related with interactions with content was low.  It was proven that students were generally considered to have comparatively high levels of preparedness for skills related with the use of technology and the internet such as using search engines or uploading and downloading resources. |

Parkes, M., Stein, S. and Reading, C., (2015). Student preparedness for university e-learning environments. *The Internet and Higher Education*, *25*, pp.1-10. From <https://scholar.google.co.za/scholar?hl=en&as_sdt=0%2C5&q=student+preparedness+for+university+e-learning+environments&btnG>= downloaded on 21/11/2017.

**Task 10: Micro-learning**

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| **Article (full reference)** | **Purpose of the research** | **Research method** | **Research setting/context** | **Findings** | **Conclusion/s** |
| Jomah, O., Masoud, A.K., Kishore, X.P. and Aurelia, S., 2016. Micro learning: A modernized education system. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, *7*(1), pp.103-110. | The purpose of the study is to make a universal awareness between the students, in order to be aware of the need of micro learning, and to ensure that the usability of learning through electronic devices is increased. The significance of micro learning on daily bases should be known and increased, and that is one of our goals. | Research method used were interviews over the telephone, emails, face-to-face meetings | The study was conducted from the Faculty of Education, Azzaytuna University, Baniwalid, Libya | It was noted that micro learning concepts, based on mobile web learning, lead to modernized education system. The study identifies that there is a gap in terms of using electronic devices with the micro learning. ,A lack of awareness of micro learning was identified in early stages, even though more preferences were given to learning systems based on electronic devices. | After creating awareness, it was identified that regardless of diverse subjects the later part of the study clearly stated that micro learning is highly useful, and can be used for knowledge acquisition as well as for skill growth. |

Jomah, O., Masoud, A.K., Kishore, X.P. and Aurelia, S., (2016). Micro learning: A modernized education system. BRAIN. Broad Research in Artificial Intelligence and Neuroscience, 7(1), pp.103-110. From <https://scholar.google.co.za/scholar?hl=en&as_sdt=0%2C5&as_ylo=2013&q=micro+learning%3A+A+Modernized+education+system&btnG>= downloaded on 10/11/2017**.**

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| **Article (full**  **reference)** | **Purpose of the research** | **Research method** | **Research setting/context** | **Findings** | **Conclusion/s** |
| Liu, X. and Feng, L., 2017. The Application of Micro–learning in Integrated Teaching of Single Chip Microcomputer. *DEStech Transactions on Social Science, Education and Human Science*, (eemt). | The aim of the study is to solve the practical problems of single-chip microcomputer (SCM) teaching in colleges and universities. | The research method is quantitative research. | The study was conducted at Tianjin University of Technology and Education, Tianjin 300222, China | Micro learning offers high quality teaching services and reference for learners, and also offers solid support for the innovative use of learning designs. Micro learning provides students with learning resources that are easy to use, easy to access, practical and practical. | The application of micro learning in the integrated course of SCM teaching makes the SCM course more intuitive, vivid and interesting. As a new way of teaching, micro learning makes up for the shortcomings of the outdated teaching courses in class and after class. |

Liu, X. and Feng, L., (2017). The Application of Micro–learning in Integrated Teaching of Single Chip Microcomputer. *DEStech Transactions on Social Science, Education and Human Science*, (eemt). From <https://scholar.google.co.za/scholar?hl=en&as_sdt=0%2C5&as_ylo=2013&q=The+Application+of+Micro%E2%80%93learning+in+Integrated+Teaching+of+Single+Chip+Microcomputer+&btnG>= on 10/11/2017.

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| **Article (full reference)** | **Purpose of the research** | **Research method** | **Research setting/context** | **Findings** | **Conclusion/s** |
| Job, M.A. and Ogalo, H.S., 2012. Micro learning as innovative process of knowledge strategy. *International journal of scientific & technology research*, *1*(11), pp.92-96. | The purpose of the study is to generate information awareness among the readers on the significance of micro learning as strategic process for creating, harvesting, acquiring, retaining and applying knowledge learning and how that knowledge helps achieve planned outcomes, benefits or results. | The research method used is Quantitative research methodology based on a questionnaire survey. | The study was conducted from the Faculty of IT, Arab Open University, and Kingdom of Bahrain. | For business to survive these days it is widely depended on harvesting, acquiring, retaining and applying fifth or sixth generation knowledge skills and capabilities. In order to provide strategic solution Micro learning relied upon which could help enterprise growth through sustained maintenance of knowledge assets by evaluating current and future knowledge gaps.  The study found that the different aspects over which micro learning dimensions can strengthen knowledge inputs include – process, curriculum,form,time,mediality and learning type. The study identified that micro learning involves a set of specialized activities which ensure successful knowledge transformation. | The study has recognized that micro learning is based on micro content of learning and delivery materials, systems and applications etc. definitely transforms knowledge. Micro learning is highly useful and could be applied for securing knowledge and skill growth in diverse subjects such as healthcare, engineering, aerospace, production, services, safety, and defense etc. active involvement of the learners would lead to the growth of learning materials which would suit most appropriately to the design, transfer and retention of skills. |

Job, M.A. and Ogalo, H.S., (2012). Micro learning as innovative process of knowledge strategy. *International journal of scientific & technology research*, *1*(11), pp.92-96. From <https://scholar.google.co.za/scholar?q=Micro+Learning+As+Innovative+Process+of+Knowledge+Strategy&hl=en&as_sdt=0,5> downloaded on 10/11/2017.

**Task 11: E-learning environment a review of the literature**

**Abstract**

E-learning is widely used in different educational institutions and because of its flexibility and low cost majority of institutions have adopted the e-learning. The focus of Institutions is now on the implementation of e-learning and it was identified that most issues that are concerning students are given less attention.

**Introduction**

There is a high increase of internet usage, online instruction that is largely used in universities and as results we have institutions that are offering online courses. An e-learning environment offers low cost and flexibility for students to be able to learn at anytime and anywhere with their own pace. Some of the students are finding it difficult to adapt easily to the learning environment and that is why it is necessary that we evaluate the learning environment in order to assess the performance of e-learning. This evaluation will determine whether online learning is suitable for all students and already there are studies that were done for e-learning environment in relation to online courses. Huang, Lin, and Huang, (2012) stated that there are basic computer application software that are essential for conducting business these days and are these: word processing, spreadsheet, presentation, graphics and webpage creation packages. Huang, Lin, and Huang, (2012). mentioned that because the internet is an attractive supplement for classroom teaching, still most studies that are based on e-learning are still focused on online environment and it is only few studies that investigated learning performance in a mixed-mode setting.

This study will collect data from online/classroom mixed –mode learning environment so that the attendance and also the effects of online participation can be investigated. When we talk about online we are basically referring to the time that students use when reading the study material online using online functions that is computers, tablet, and phones and so on. What we also need to put to account is that when we refer to e-learning we also mean that the course material or the instructions are only available online that is why we also need to investigate if the online environment is also suitable for other learners.

The study will focus on different online environment.

# Literature review

The use of information and communication technologies to allow the access to online learning/teaching resources is called e-learning (Arkorful, and Abaidoo, 2015).

The e-learning research has largely focus on the e-leaning implementation and also evaluation of online learning platforms but it was identified that some issues that involve students regarding e-learning environment were given less attention. It is very important that whenever there is a proposal to design a new curriculum whether it is for e-learning or traditional learning it is important that students should be given an opportunity to have their voice heard because they also prefer their own learning environment. The attention on e-learning that was done by most researchers was more on the advantages of e-learning than the challenges (Islam, Beer. and Slack, 2015).

**Challenges of e-learning in an academic environment**

* Learning style: it is always important to have an understanding of students learning style in order to get the best outcomes because some students through visual presentations some prefer to listen to instructions and some by using notes that are written.
* Pedagogical e-learning: teachers should be able to know how students prefer to learn so that they can design and also deliver course material accordingly so that it will be easy to transfer skills.
* Technological: there are still problems with the quality of e-learning system that is being used such as some institutions are still unable to customise it according to their requirements.
* Technical training: it is advisable that instructors have a good understanding of technology and they should be properly trained so that they are able to troubleshoot basic challenges of e-learning.
* Time management: some issues are that instructors should at least visit the online discussion forum at list once in three hours in order to give immediate feedback to questions that are asked by students.

**Mixed –mode e-learning**

Mixed-mode e-learning can be both face-to-face learning as well as the use of online methods and this can help in many ways because when the course is starting the instructor will have an opportunity to ensure that the students have a better understanding of the course during class time. In other words students will get an opportunity to have a better understanding about e-learning strategies while the instructor is still with them and that will automatically give them a better understanding of the online portion of the course. The other important matter about mixed-mode e-learning is that instructors get an opportunity to motivate learner and also make them aware of about the effective communication tools that are available for them to use when there are important information. It is also believed that some of the students if they can be given an opportunity to choose they will definitely choose face face-to-face than online discussions because they absolutely do not have or have limited resources to access online courses (Tiene’s, 2000).

**E-Learning environment**

E-learning environment allows students to learn in different ways such as outside of school. Huang, Lin, and Huang,( 2012) stated that e-learning environment will involve lectures notes, PowerPoint slides, and also videos from the lecture and that the designers of e-learning environment believe that students will do the online material by clicking and also read the material and comment on their understanding about the design of mixed-mode e-learning. There are several e-learning advantages and Arkorful, and Abaidoo, (2015) specified the following advantages:

* The flexibility of e-learning that allows students to choose time and a place that is good for them.
* It gives opportunity between learners by using a forum called discussion forum.
* It is very cost effective as a result students do not have to travel in order to learn.
* It allows a self- pace studying.

**Components of learning environment**

* Activities that supports learning
* The goals that involve learning and teaching
* How learning will be measured
* Different types of learners
* Functions that will support learning

**Online participation and learning performance**

Studies indicated that there are differences between learning performance and online participation in terms of the relationship (Huang, Lin, and Huang,( 2012). One study suggested that online participation improves engagement by students and also improves learning efficiency (Zhang,Zhou,Briggs, and Nunamaker,2006). There is also a different opinion that most students who fail their courses it is because they do not interact often. Lu et al. (2003) thought that students learnt well on online courses irrespective of their level of online participation. Raitman, Augar, and Zhou, (2005) felt that when students are lost or confused there are high chances that their learning performance will definitely drop.

**Conclusion**

I have acquired knowledge on how to gather information from different sources and that e-learning does not only have advantages there are also challenges as well. I had an opportunity to have an in depth understanding of e-learning and how it is used. Knowing how people think about e-learning and also how they understand it was very important to me. Knowing that most universities are using e-learning and also how they use it was my highlight. I have also learnt that instructors should be very good in time management so that whenever there is a question asked he/she is able to give feedback immediately because in some situation you will find out that when a question is asked it takes days before it is being answered and that results in students having questions that are not answered.

The other part was that it is important that when designing e-learning facility instructors should also involve students so that they are able to know what the key things that should be considered. I have also learnt that even if teaching can be done in or out of schools computer and internet play a big role in e-learning. Having to know that when e-learning is used it is possible to work anytime, anywhere and that you can have your documents saved in Pretoria but still be able to access them when you are in Cape Town using a different computer. I really had good time in writing about e-learning and also learning different methods and how to use them. I still have mixed feeling though because I believe that not everyone have a privilege to have access to a computer and internet especially people who are in rural areas where the access to any internet is a big challenge I mean places where even a phone is struggling to connect to internet. I believe that we also need to do a study on how to reach to those people because honestly technology is changing and we need to adapt with the changes that are being introduced and I am worried about those people.

I got to understand that instructors should be given training in terms of troubleshooting in case there is something that does not go well and students need serious help. The other part I like about e-learning is that you are able to work at your own pace and the course material is available when you need it. I have learnt that knowledge and skills are very important in using computers because most of the things are done online and if we lack the skills and knowledge we will definitely find it difficult to cope with some of the things in life.

I am now in a position to understand why e-learning is so popular in educational institutions and what is required for it to be successful for both instructors as well as the learners. Even the challenges of e-learning can be sorted as long as there is a proper understanding and communication on the design of e-learning, I have learnt so much in this course things that I was not aware that they are possible about e-learning and I believe moving forward I will know a lot more.

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# Appendix

