

# Adaptive and Blended Learning \_ the Panacea for the Challenges of E-Learning

Dr Jayashree Premkumar Shet

Department of English, Qassim University, Buraidha, Kingdom of Saudi Arabia.

## Abstract

In spite of increased use of information and communication technologies in many areas, E-learning is not widely used in Higher Education as it is still considered as an inferior way of education and also due to the fact it carries its own barriers. In this article the advantages as well as the disadvantages of E-learning are listed. Then the solutions such as Blended Learning and Adaptive Learning embedded with Gamification, Group Dynamics and Graphic Organizers and Multimedia packages to solve the impediments are dealt with, in detail. The population of the study included the teaching staff and undergraduate students of An Nabhanya College of Science and Arts. About 60 Questionnaires are distributed amongst them. Questionnaires are designed consisting three parts. The first part deals with the number of courses where e-learning is implemented and the second part lists the benefits availed by the teachers and students by E-Learning. The third part enlists the problems faced by the students and the instructors during E-Learning. The study indicates that there is a poor milieu as far as educational environment is concerned due to the boredom of e-learning, there is also the lack of proper resources, PCs, Wi-Fi's and study materials and also, procrastination, lack of motivation, lack of serious Assignments. Moreover, there is also a dearth of well trained and experienced Instructors and technical staff in the campus. Thereby this paper insists that concentration is to be bestowed on Blended Learning and adaptive E-learning as tools to overcome the disadvantages. Also this article suggests that the teaching staff should be provided with many professional Development Sessions and Workshops in E-Learning, Blended -Learning Adaptive E-Learning. It also suggests that there can be availability of a technical staff for each programme in the colleges.

Key Terms: E-Learning - Challenges, Blended Learning , Adaptive Learning, Professional Development Sessions, Provision of Technical Assistants.

## 1. Background of the study

Both globalization and the innovations in information and communication technology brought in a sea-change in learning. One of the such born e-children, e-learning, the new changing face of learning, is learning eased by electronic technology with the objective of better the learners' knowledge, skills and productive capabilities. It comprises of an extensive array of digitalization approaches, components and delivery methods in education through internet. Distance education, online instruction, e-learning, online training, asynchronous/synchronous learning, distant education, and web-based education programs are some of the most popular terms recently being used in instructional and technological contexts (Moore, Dickson-Deane & Galyen, 2011)<sup>20</sup>. E-learning is utilized by all walks of people.

This paper presents a brief overview the concept of e-learning, the history of e-learning, the benefits of e-learning, unfortunately there are many a drawback to eLearning which makes the education community ponder on the question of 'To be E or Not to be E'. Fortunately, adaptive e-learning and blended Learning can help to overcome the disadvantages of e-learning.

The current research study will certainly play an important role in providing valuable insights about the attitudes of students and the staff at An Nabhanya College of Science and Arts Girls' College towards e-learning activities. The research study will therefore suggest the deployment of instructors and staff who are professionally well trained in Blended Learning and adaptive learning.

## 2. E-learning

### 2.1 What is E-learning

Millions and millions of millennials have already knocked at the Gateways of E-Learning, as it has become the 'summum bonum' of educational setting. It is internet-enabled or web-based (LaRose et al, 1998)<sup>16</sup> learning. There are live instructions where specialized instructors can remain in their own places and deliver lessons to students in different locations. Video content delivery can be viewed and re-viewed whenever students need. The e-learning concept means all the computer based educational tools or systems will allow the learners to receive their lessons anytime and anywhere. The transition from the usage of just the CD-ROM to the delivery of e-learning lessons [2] that bridges the geographical gap and conducts online virtual classes and that leads the students roam in a new landscape and lets them actively participate [1] is beyond one's imagination.

### 2.2 The History of E-learning

The term "e-learning" came into existence in 1999, though words used to describe e-learning such as "online learning" and "virtual learning" were in existence earlier in the 19th century [1]. Isaac Pitman taught his pupils shorthand via correspondence in the 1840s paving the road to e-learning. Then, in 1954, BF Skinner invented the "teaching machine" - a big achievement to help the schools to administer programmed instruction to their students. In 1960, the first computer-based training program was introduced to the world. This computer-based training program (CBT) was also termed as Programmed Logic for Automated Teaching Operations (PLATO). It was originally designed for students attending the University of Illinois.<sup>[1]</sup> In the second half of the 20th century, e-learning tools and delivery methods have become very much in vogue. Then, the advent of Virtual learning began and thrived.

### 2.3 E Learning in KSA

The e-learning milieu in KSA is a shining like a star embedded sky as every University tries to board the e-learning bandwagon. The Custodian of the Two Holy Mosques King Abdullah launching the first phase of the university and higher education city projects on an iPad in a ceremony in the first week of May, 2012 speaks volumes of the nation's interest and efforts in promoting e learning. The ministry of Higher education in the kingdom has already set up a National centre that caters for both E learning and distance learning. In 2007, KSA established a new university, the Knowledge International University (KIU), dedicated to the use of e-learning resources. The MOHE has set up a repository for e-learning material to help universities adopt e-learning and e-books for engineering, medical, computer science and humanities courses, these are either planned or available and academics are able to receive training. <sup>[Al-Kahtani SA. 2001]<sup>3</sup></sup>

### 2.4 Benefits of E-Learning

It is an All in One Learning by linking the various resources in several varying formats at the same time. It promotes active and independent learning. Liberty is at one's Door as no dependence on anyone for anything and at one's own pace. E-Learning can be done on laptops, tablets and phone. It eradicates boundaries of place and time. (Holmes and Gardner, 2006)<sup>13</sup>. The Good News is the teachers no longer worry about the class room management. E Learning is available at minimum cost.

### 2.5 Barriers to E-learning:

All-time favourite is still face-to face learning. Lack of self-discipline is the biggest threat to e-learning. Though gadget-friendly people are gratified with e-learning immensely, there are many with Gadget-Phobia. E-Learning is not feasible to all courses for instance, science courses. There will be cheating and plagiarism. There is also a dearth of resources like technologies and infrastructure for the communication, security, personal relations and motivation.

According to [Judahil et al \(2007\)](#)<sup>15</sup>, it demands a variety of skills in Information and Communication Technology (ICT). The most noticeable condemnation of e-Learning is poor ICT infrastructure. Most importantly, the void of vital personal interactions between learners and instructors, and also among co-learners ([Young, 1997](#);[Burdman, 1998](#))<sup>36</sup> is the biggest criticism on eLearning.

### 3. Advanced E Learning Methods

#### 3.1 Blended Learning

Blended Learning and Adaptive Learning embedded with Gamification, Group Dynamics and Graphic Organizers and Multimedia packages to solve the impediments of e learning.

Blended learning, a mix of direct face-to-face interactions and technology-mediated interactions between students, teachers and learning resources. The adoption of blended education is increasingly seen in higher education institutions, and researchers expect that blended learning will become the new "traditional model" ([Ross & Gage, 2006](#))<sup>28</sup> or the "new norm" in the introduction of higher education courses ([Norberg, 2011](#))<sup>24</sup>

According to [Stacey & Gerbic \[2007\]](#)<sup>30</sup> learning experience and performance improve when traditional course delivery is paired with online learning. A study by [Marriot, Marriot, and Selwyn \[2004\]](#)<sup>18</sup> showed learners expressing their preference for face-to-face due to its facilitation of social interaction and communication skills acquired from classroom environment.

Blackboard network platform Developed by Blackboard Company (the United States), a curriculum-oriented digital teaching platform can display teaching contents and implement the comprehensive strategy of teaching activities conducive to represent the teaching contents efficiently and improve the use of teaching resources. [\[14 &36\]](#)

#### An Example for Blended Learning Structure

In class: Students select an historical event to research, such as., Indo –China War, Kargil War, Indian Independence, World War I, World War II. Students brainstorm what they know about each of the events.

Outside of class: Students access one of the interactive sites and complete a graphic organizer.

In class: Students collaborate to create a timeline of Indian history (on poster board or chart paper posted around the classroom).

#### 3.2 Addressing Potential Impediments to Learning

The educators should address the students' educational, cultural, and health and mental health along with learning difficulties since they make an indelible impact on learning processes and outcomes. Educators should find out exactly what learners know and start instruction from there. Also, specific, easy-to-understand, attainable, quantifiable and meaningful goals for each learner is obligatory.

#### 3.3 Learning Styles and Adaptive System

According to [Sarasin \[1999\]](#)<sup>29</sup>, most learners can be categorized as Visual, Auditory or Kinaesthetic learners depending on how they prefer to receive and process information. Visual learners can learn effectively when they see the materials, Auditory learners like to hear the material, while Kinaesthetic learners are those who learn best by doing. These three categories are known as VAK learning styles. An adaptive e-learning system that is designed presents learning materials that match students' learning styles i.e. visual, auditory and kinaesthetic.

### 3.4 Adaptive learning.

Adaptive learning works on a simple concept: the coursework should progress in coherence with a student's learning capabilities. It's an evidence-based approach that has benefitted millions of learners. By eradicating e-learning fatigue.

In 1970 the adaptive learning or what was called Intelligent tutoring was founded after the Artificial Intelligence field became popular, as the learning tools adjust to the learners' learning method. Student centered and online learning are in high demand, and adaptive learning is the best way to utilize these methods. Researchers found adaptive learning tools help students learn at a faster rate. Millennials, the tech savvy generation, is likely to get engaged with online activities. Adaptive learning doesn't throw the instructors from the equation. These methods free up instructor time for students but, they can keep track of students' progress.

Many technologies have been used in the e-learning field. Synchronous learning may use technologies such as virtual classrooms or chat rooms, Skype conversations, online real-time live teacher instruction and feedback. On the other hand, the technologies used by Asynchronous learning are blogs, discussion boards, email, wikis, textbooks, hypertext documents, audio, video courses, social networking using we2.0, Podcasts, and simulation [4].

Traditionally, the systems of adaptive learning have been divided into separate models or components, usually it includes the Expert model, Student model, Instructional model, and Instructional environment. The Popular development tools for the Adaptive e learning includes: Adobe Captivate, Articulate Storyline, and the advance ones are: Skilitics Interact, and Domoscio. The first adaptive learning system was "SCHOLAR system that offered adaptive learning for the topic of geography of South America" [5]. One of the good examples for the Adaptive implementation is "Maple engine of WebLearn", developed by the University of RMIT in Australia [2].

### 3.5 Gamification:

The implementation of game elements in non-game contexts is adopted in different contexts and education is one such. The objective of Gamification in e-learning systems is to increase users' motivation and engagement. Various types of learners are to be kept in mind before designing and developing the games. Progress tracking and reward mechanisms can be used in e-learning to increase user's motivation and engagement. [Glover, 2013]11. Proposed models for introducing gamification in e-learning agree that it is a project that can be related to software design.

### 3.6 Group Dynamics and E Learning

Mercedes Fisher, Gregory. Thompson and David A Silverberg [2005]9 present an exploratory study of computer-mediated groups that used collaborative model to participate in an online MA program in Educational Technology. These participants were organized into groups and collaboratively built knowledge through synchronous and asynchronous online dialogue while leveraging technology as a tool for individual and collaborative learning. These findings indicate a high index of collaboration and completion compared to homogenous classes where students work on their own. Don't you think students want to see others, need to see the reactions of others and need to see others as Role-models?

### 3.7 Graphic Organizers and e learning

Graphic organizers are visual and graphic displays that spatially depict the relationships between facts, terms, concepts and ideas within a learning task (Ellis, 2004)8. Ritchie and Gimenez [1996]27 tried to figure out the impact of graphic organizers used by fourth grade students who received their instruction in a computer-based environment. The students engaged in a 20 to 30-minute science lesson using IBM's Link Way software. They discovered graphic organizer's role in the curriculum increased both

short-term and long-term memory. [George K Conley \[2008\]<sup>10</sup>](#) also noted similar results among the high school students, who received instruction through e learning.

### 3.8 Multimedia learning

It is the delivery of information in a computer-based presentation by integrating several mediums of communication such as text, graphics, video, animation, and sound. Studies highlight the importance of design and integration of multimedia in online courses since continuous enrolments into e-learning make them crucial to provide for high quality interactive e-learning. Researches also show that multimedia-based learning modules can entice learners to pay full attention through the vividness of presentation, sound, and hands-on activity to maximize the learner's ability to retain information and learning [29].

Adaptive Learning and Blended Learning implemented in the higher education system in the Kingdom of Saudi Arabia will make the system reach its zenith

## 4.Literature Review

### 4.1. Empirical Studies on E-Learning

The worldwide e-learning industry is estimated to be worth over US\$48b, with much of it spent in the developed world where a large number of students are taking courses online [[Tavangarian et al., 2004](#)]<sup>32</sup>. African countries have not fully embraced e-learning yet. Mpofu et al. (2012) 40, revealed the adoption of e-learning in Africa is slow, as evidenced by the low number of African scholars who are familiar with teaching in an online environment. According to [Walimbwa's \[2008\]](#)<sup>34</sup> study focused on the University of Dar es Salaam (Tanzania), Makerere University (Uganda), and the University of Nairobi (Kenya), revealed a lack of requisite skills and sufficient human resources in these universities for the failure.

According to a study done by Mpofu in 2010[24] in Zimbabwe most of the lecturers (90.0%) have 1-3 years university conventional teaching and 97.5% have no experience in distance education. Seventy-five percent of those who lectured educational foundation courses have no science-related background. Insufficient university conventional teaching experience, limited pedagogical knowledge, and limited science qualification promoted the use of traditional classroom practices which are not appropriate for quality learning in the programme

[Piskurich GM \[2003\]](#)<sup>25</sup> ascertains 'E-LEARNERS FAIL! Not one or two, here and there, but large numbers of them. Some studies suggest more than half of would-be e-learners either never take advantage of e-learning possibilities or never finish their first program.'

[Lynch and Dembo \[2004\]](#)<sup>17</sup> point out that blended learning, as distributed education, represents an eclectic blend of technologies and modalities to enable both synchronous (real time) and asynchronous (anytime) teacher-learner and learner-learner interactions in a single course or programme. However, [Driscoll \[2002\]](#)<sup>7</sup> reports that blended learning solutions are a great way to introduce an organisation to e-learning.

The success of the e-learning environments and systems depend a lot on the adaptive management system.

[Verdu et al. \[2008\]](#)<sup>33</sup> conducted a study and examined the evidence for the adaptive e-learning. The study showed that the analyses of the different classification existing in literature, had focused later on Intelligent Tutoring System (ITS) and the Adaptive Hypermedia Systems (AHS). The Effect Size (ES) was used to analyze the effectiveness of the system.

[Surjono's \[2009\]](#)<sup>31</sup> study was based on the use of the open source learning management system of Moodle.

Dekson & Suresh [2010]<sup>6</sup> both worked together and their study was, making a survey of the various means of offering the adaptive content in an e-learning environment and exploring any possible ways to achieve adaptability in learning systems.

A study conducted by Y. Mustafa [2010]<sup>22</sup> presented a new approach to integrate learning styles into an adaptive e learning Hypermedia. Developing an adaptive e-learning system was the main objective of the study. It also aimed to assess the effect of adapting educational materials individualized to the student's learning style.

## 4.2 Empirical Studies on E-Learning in KSA

Harvey [2003]<sup>12</sup> examined the students' attitude towards using computers and effects of E-learning in their overall performance at the King Fahd University of Petroleum & Minerals (KFUPM), Dhahran in Saudi Arabia. His findings indicate that the students had positive attitudes towards computer-based learning and that there was an increase in the performance of the students due to the use of flexible E-learning methods.

Naif Jabli and Adel Qahmash [2013]<sup>23</sup> in 'The Benefits and Barriers of E-learning in Higher Education in Saudi Arabia' opine E-learning if properly implemented has the potential of making higher education available to millions via internet and other digital technologies at cheaper costs.

In Al-Asmari AM, Khan MSR's [2011]<sup>1</sup> opinion the undue fear among foreign teachers that computers could finish their jobs leads to indifferent responses and a lacklustre approach towards e-learning.

With proper organization and management, technical support and infrastructure, required by different organizations, would be easier to identify and thereby improve the efficiency and effectiveness of the pursuit of the national objective appropriate in e-learning in KSA. [Al-Shehri AM, 2010 ]<sup>4</sup>

## 5. Significance of the Study

This study enlists the importance and advantages of e learning but, it also enlists the potential impediments the university community faces. Also, it highlights how Blended and Adapted Learning will lend a big hand to solve e-learning issues.

## 6. Objectives of the Study

The study aims to

- 1) To find out the satisfaction of students and staff on e-learning courses offered by QU, KSA.
- 2) To evaluate the feasibility of E-learning in the present milieu.
- 3) To find out the reasons behind the respondents' preferences towards E-learning.

## 7. Methodology

### 7.1 Choice of Methods

Exploratory research methodology or qualitative research method as well as quantitative research methodology have been used for the current research study.

Quantitative analysis has been used to analyse the data collected.

The research involves primary as well as secondary data analysis. The secondary data analysis through literature review helped in understanding how far the research question was answered and gave guide lines from the limitations and strengths of past research work

### 7.2 Research Process

Primary data for the current research has been collected through questionnaires method where 50 students and 12 lecturers from An Nabhanya Science and Arts College For Girls were surveyed through structured questionnaires that required answers to specific questions related to e-learning methods.

Stratified Random Sampling was used to select the instructors from the various departments and to choose students from most of the levels of the students of English department. Snowball random sampling technique was used to select respondents for data collection from Math, Physics and Islamic

Departments. 22/27 students selected from English department selected a student from another department.

### 7.3 Data Collection and Source

Distributed and obtained 60 questionnaires. 12 Instructors: Eight from English Department, Two from Physics Department, Two from Math Department and Forty-Eight students (27 from English, 8 from Islamic Studies, 8 from Physics, 5 from Maths) from different departments of An Nabhanya Science and Arts College were the respondents of the questionnaire.

The researcher met face to face with the lecturers and the students and made sure they understand the questions since the questionnaire was in English and there was the possibility of the respondents not understanding the questions. ICQs and CCQs were asked before they completed the questionnaires. Lecturers and the students who participated in the interview have been informed about the research. Also, the research ethics have been approved.

### 7.4 Data Analysis

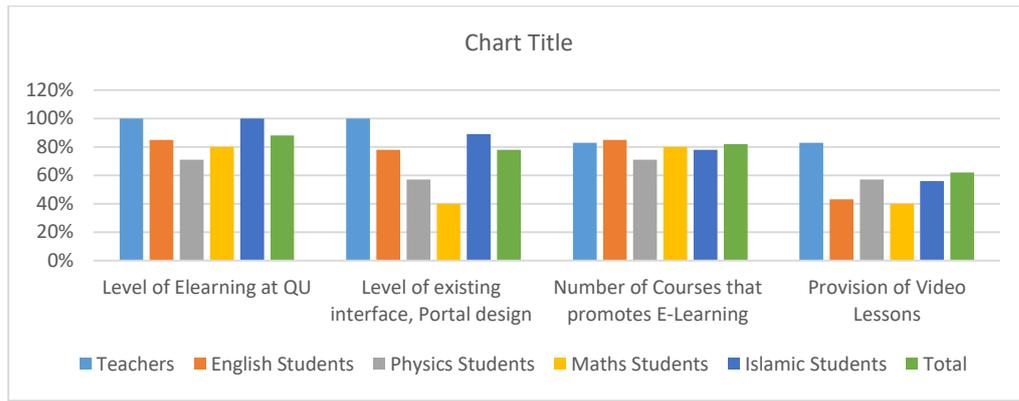
The collected data was analysed using statistical techniques and the results were discussed in detail with recommendations and conclusion provided for the research study. The first part deals with the Respondents' satisfaction, knowledge and judgement of e-learning in Qassim University.

**Table 1. E-Learning at Qassim University**

QUESTIONS	Teachers	English Under graduates	Physics Under graduates	Maths Under graduates	Islamic Under graduates	Total
Q1 The level of E-Learning at Qassim University	12/12	23/27	5/7	4/5	9/9	53/60
	100%	85%	71%	80%	100%	88%
Q5. The Level of existing interface, Portal design <a href="http://www.qu.edu.sa">www.qu.edu.sa</a>	12/12	21/27	4/7	2/5	8/9	47/60
	100%	78%	57%	40%	89%	78%
Q 6 Number of Courses that promotes E-Learning	10/12	23/27	5/7	4/5	7/9	49/60
	83%	85%	71%	80%	78%	82%
Q.7 Provision of Video Lessons	10/12	16/27	4/7	2/5	5/9	37/60
	83%	43%	57%	40%	56%	62%

Almost 80% of the participants agreed that the E-Learning programmes at Qassim University is functioning well, satisfied with its portal and with the number of e learning courses and 62% of them agreed that it provides video lessons.

**Fig.1 E-Learning at Qassim University**

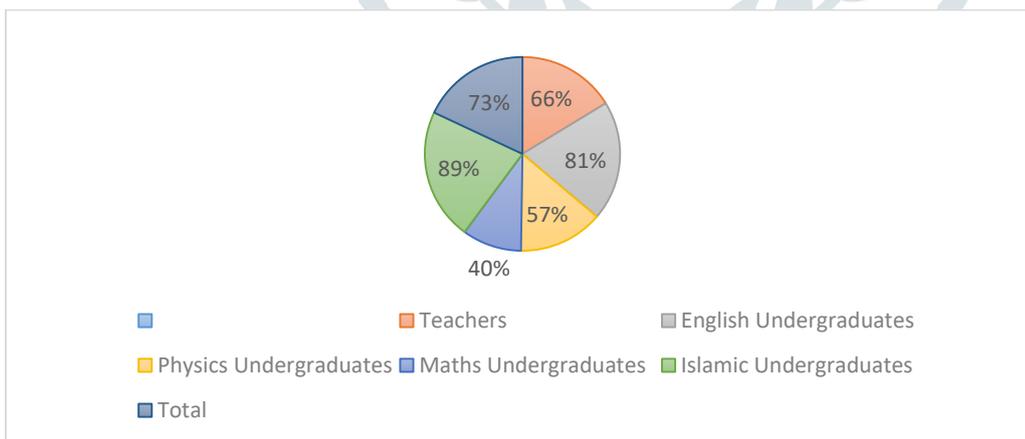


And the second part deals with the teachers and students of their success in E-Learning.

**Table 2 Self- Satisfaction on E-Learning**

QUESTION	Teachers	English Under graduates	Physics Under graduates	Maths Under graduates	Islamic Under graduates	Total
Q2. The participants were asked to express their success in e learning at Qassim University.	8/12 66%	22/27 81%	4/7 57%	2/5 40%	8/9 89%	44/60 73%

**Fig 2 Self- Satisfaction on E-Learning**



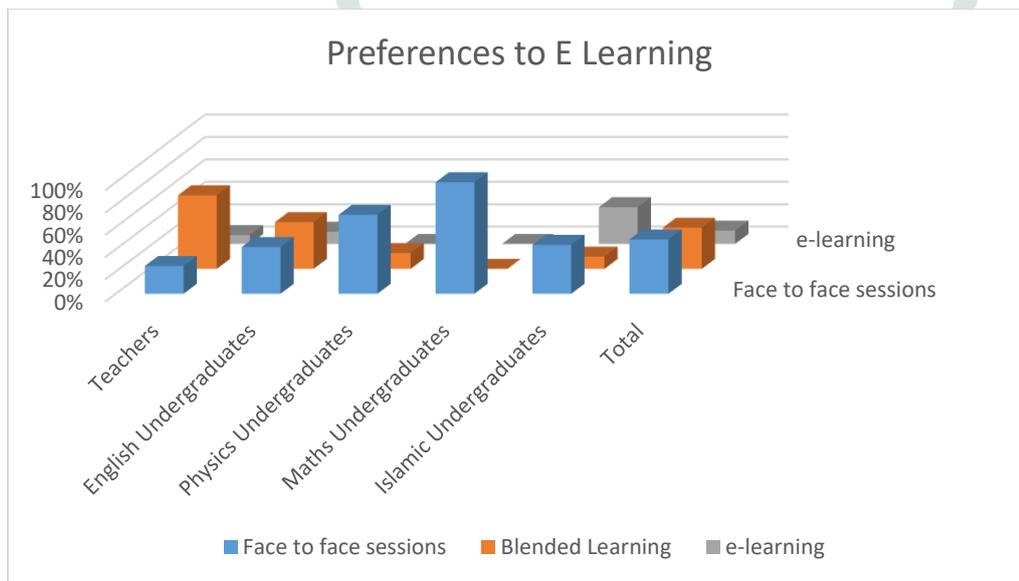
It is noteworthy that 73% of An Nabhanya College Staff and Students are satisfied with their experience at Qaaim University’s E Learning Courses and Materials.

The third issue the questionnaire dealt with was the students’ and the staff’s preference to e learning or blended learning or face to face learning and the background that led to the preferences.

**Table 3 Q.11.The Respondents’ preference to face to face sessions, Blended Learning and only e-learning**

QUESTIONS	Teachers (12)		English Undergraduates (27)		Physics Undergraduates (7)		Maths Undergraduates (5)		Islamic Undergraduates (9)		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Face to face sessions	3	25%	12	42%	5	71%	5	100%	4	44%	29/60	48.8%
Blended Learning	8	66%	12	42%	1	14.2%	0	0%	1	11%	22/60	37%
e-learning	1	8%	3	11%	0	0%	0	0%	3	33%	7/60	12%

**Fig 3 Preference to face to face sessions, Blended Learning and only e-learning**



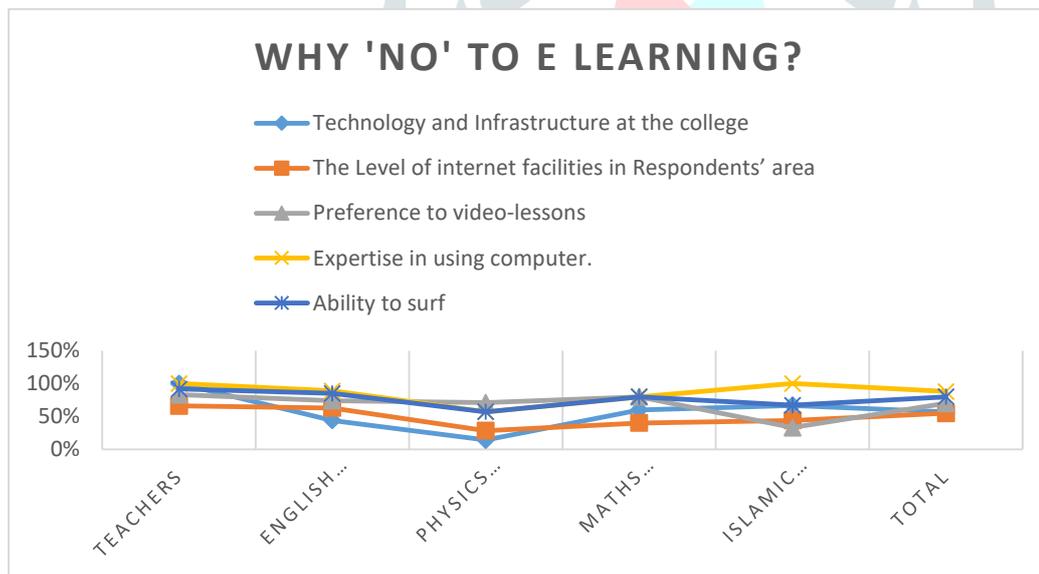
Almost 49% of the Respondents preferred Face to Face sessions only and nearly 37% of them showed their preference to blended learning and it’s really a serious concern that only a few preferred eLearning only.

The study sought to find the reasons behind the respondents’ preferences.

Table 4 Why ‘No’ to E Learning

QUESTIONS	Teachers	English Under graduates	Physics Under graduates	Maths Under graduates	Islamic Under graduates	Total
Q.3 Technology and Infrastructure at the college	12/12	12/27	1/7	3/5	6/9	34/60
	100%	44%	14%	60%	66.7%	57%
Q.4 The Level of internet facilities in Respondents’ area	8/12	17/27	2/7	2/5	4/9	33/60
	66%	63%	28.5%	40%	44%	55%
Q. 8. Preference to video-lessons	10/12	20/27	5/7	4/5	3/9	42/60
	83%	74%	71%	80%	33%	70%
Q9. Expertise in using computer.	12/12	24/27	4/7	4/5	9/9	53/60
	100%	89%	57%	80%	100%	88%
Q10. Ability to surf	11/12	23/27	4/7	4/5	6/9	48/60
	91.7%	85%	57%	80%	67%	80%

Fig 4 Why ‘No’ to E Learning



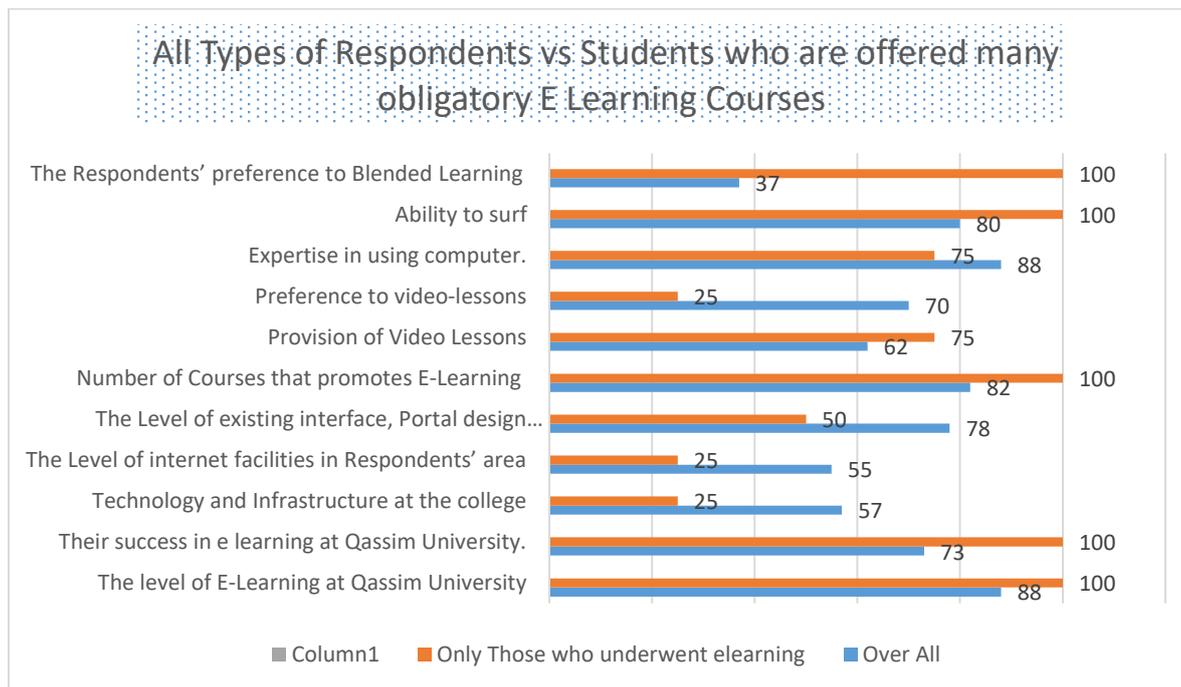
The third part enlists the problems faced by the students and the instructors during E-Learning. The study indicates that there is a poor milieu as far as educational environment is concerned, there is also the lack of proper resources, PCs, Wi-Fi’s.

The students of level Two for who virtual classrooms were offered were not fully in favour of e learning though, their opinions differ from the rest in many aspects.

**Tab.5 Respondents VS Freshman Students**

	E-learn ing At Qassi m Unive rsity 1	Experien ce with E- learning At Qassim Universi ty 2	Technol ogy and Infra structure at the college 3	Level of Internet in your area to access to Blackboard and URLs 4	The level of of Qassi m Unive rsity's Portal 5	Course s that post e- learnin g materia ls 6	Vide o Conf eren ce Less ons 7	Prefer ence to Video Confe rences 8	Co mp ete nce in IT Skil ls 9	Abili ty to surf 10	Pre fern ce 11
<b>Level 2 6.1</b>	<b>G</b>	<b>G</b>	<b>G</b>	<b>B</b>	<b>VG</b>	<b>VG</b>	<b>G</b>	<b>G</b>	<b>VG</b>	<b>VG</b>	<b>b</b>
<b>6.2</b>	<b>VG</b>	<b>VG</b>	<b>B</b>	<b>G</b>	<b>G</b>	<b>VG</b>	<b>NA</b>	<b>G</b>	<b>VG</b>	<b>VG</b>	<b>b</b>
<b>6.3</b>	<b>G</b>	<b>G</b>	<b>B</b>	<b>VB</b>	<b>NA</b>	<b>G</b>	<b>VB</b>	<b>VG</b>	<b>G</b>	<b>VG</b>	<b>b</b>
<b>6.4</b>	<b>G</b>	<b>G</b>	<b>VB</b>	<b>VB</b>	<b>NA</b>	<b>G</b>	<b>B</b>	<b>B</b>	<b>G</b>	<b>G</b>	<b>b</b>

**ig.5  
Res  
pon  
dents VS Freshman Students**



Three out of four Freshmen for who courses such as IC101, IC103, MGT103, PSYCH103, CS101, CS102 ae offered through virtual classrooms preferred video lessons. It’s really remarkable to note that they are 100% satisfied with the level of e-learning at QU, with the number of e- courses it offers, with their success in e-learning at QU. All preferred blended learning. No one preferred only face to face sessions.

**7.5 Validity and Reliability**

Data was collected from reliable and valid sources and thus the validity and reliability of data was been ensured. Tried to eliminate major type of response error by conducting face to face meetings with the respondents who were mostly consisted of whom the researcher met on a daily basis.

**8. Critical Reflections**

The existing interface, portal design [www.qu.edu.sa](http://www.qu.edu.sa). is evaluated as good enough and at a comfortable work level.

Only twelve percent of the participants said that they preferred e-learning, though 88% of them said that they are good at computer literacy and 80% of respondents said that they are good at surfing skills and 70% preferred to have Video lessons. The reasons are explicit as 57% only asserted that they are satisfied with the infrastructure provided in the college premises and only 55% are happy with the

internet facilities at their place. Since the population of the study includes people from Ar Rass, which is enjoying a good internet facility, we have got such results. If the study was limited to the students, who hail from An Nabhanya and the villages surrounding it and for whose sake the college was open, the results would have been very much worrying. The internet services from both STC and Mobily are comparatively very low and slow than the nearby towns like Ar Rass .

Forty- eight percent of the respondents still prefers face to face sessions and thirty seven percent prefers Blended Learning. This tells it all. The fear of facing technological problems or dreading the milieu of staying indoors for a life time.

All the four freshman students preferred blended learning. Even these students related their untold suffering due to lack of full-speed internet facilities and their attitude is much worse towards infrastructure and availability of internet.

The results of the survey insist on most precisely two things:

- i.) the implementation of Blended and especially Adaptive Learning, which in turn, points a finger on training the instructors. The researcher as well as her colleagues are well aware of e learning sessions that have become part and parcel of the professional development programmes of QU but not in Blended Learning Environment. It is obligatory that there is a separate IT help department in every college to assist the instructors, as we know to borrow William Shakespeare's (1602) words, 'Frailty, thy name is...' Technology.
- ii.)ensuring smooth and uninterrupted internet facilities to the students, by setting up a full-fledged 24hour LRC centers with supporting staff, especially in remote places like AN Nabhanya, as E-learning becomes an irritating learning experience due to the lack of high-speed broadband access.

## 9. Conclusion

The response for first objective of the research 'To find out the satisfaction of students and staff on e-learning courses offered by QU, KSA' was well answered. The respondents have high awareness of the values of e-learning, and this is due to the fact that e-learning has been applied in Qassim University very effectively like any other Saudi Universities.

The second objective of evaluating the feasibility of E-learning in the present milieu reflected the obstacles in e learning and the third objective of finding out the reasons behind the respondents' preferences towards E-learning clamours the implementation of Adaptive Learning.

E-learning is a pillar of strength. But the research showed the overall neutrally-positive attitude of students towards Blended Learning and not to e-learning since, as (Means et al, 2009)<sup>19</sup> in his empirical study from 1996 and 2008 sums it up students using e-learning performed better than students who did not use e-learning. The students who performed best were those who received blended learning.

Adaptive Learning will develop the ability of learning. QU if it builds the adaptive learning tools in blended environment with highly skilled technicians, we can see the light at the end of the tunnel.

## 10. Limitations of Study

One of the limitations of the current research study is that it is restricted to the students in College for Science and Arts for Girls, at Nabhanya. Therefore, it does not cover the perception of students from other colleges such as College of Business Administration at Al Rass, College of Science at Unnaisa., etc. in relation to e-learning.

## 11. Recommendations

Further research areas worth pursuing may concern with revised questionnaires and larger groups of respondents. It's also proposed that the study can be only on students and teachers from colleges who avail prevalent e-learning systems.

## References

- [1] Al-Asmari AM, Khan MSR. E-learning experiences at King Khalid University. A Case Study. Unpublished Paper, 2011.
- [2] Al-Draiby O. E-learning and Its Effectiveness in Saudi Arabia. Faculty of Computer and Information Technology. KAU, Jeddah. 13-1-2010. 2010.
- [3] Al-Kahtani SA. Computer-assisted language learning in EFL, instruction at selected Saudi Arabian Universities. PhD Dissertation, Indian University of Pennsylvania, USA, 2001.
- [4] Al-Shehri AM. E-learning in Saudi Arabia: To E or not to E, that is the question. *J Family Community Med.* 2010;17(3):147–150.
- [5] Deborah K. Reed, Emily Jemison, Jessica Sidler-Folsom & Ashley Weber (2019) Electronic Graphic Organizers for Learning Science Vocabulary and Concepts: The Effects of Online Synchronous Discussion, *The Journal of Experimental Education*, 87:4, 552-574, DOI:10.1080/00220973.2018.1496061.
- [6] Dekson D. E. and Suresh E. S. M. 2010. Adaptive E-Learning techniques in the development of teaching electronic portfolio – A survey. *International Journal of Engineering Science and Technology* Vol. 2(9), 4175-4181.
- [7] Driscoll M., “Blended learning: Let’s get beyond the hype”, *eLearning*, vol.1, no. 4, pp. 1-4, April 2002.
- [8] Ellis, E. (2004). What’s the big deal about graphic organizers? Retrieved from <http://www.GraphicOrganizers.com>
- [9] Fisher, M., Thompson, G. S., & Silverberg, D. A. (2005). Effective Group Dynamics in E-Learning: Case Study. *Journal of Educational Technology Systems*, 33(3), 205–222.
- [10] George K. Conley. The Effect of Graphic Organizers on the Academic Achievement of High School Students in United States History Who Receive Instruction in A Blended, Computerized learning Environment. (Under the direction of Dr. Samuel Smith) School of Education, November, 2008.
- [11] Glover, I., 2013. Play as you learn: Gamification as a technique for motivating learners. *Proceedings of the World Conference on Educational Multimedia, Hypermedia and Telecommunications, (MHT’ 13)*, AACE, pp: 1999-2008.
- [12] Harvey, S. (2003). Building Effective Blended Learning Programs, *Educational Technology*, 43 (6), 51-54.
- [13] Holmes, B. & Gardner, J. (2006). *E-Learning: Concepts and Practice*, London: SAGE Publications.
- [14] Huang T.E., & Li L.G., “A probe into blended teaching mode of college English based on Blackboard network teaching platform,” *Theory and Practice of Education*, vol. 34, no. 6, pp. 55-57, June 2014.
- [15] JuhadiI, N., Samah, A & Sarah, H. (2007). Use of Technology, Job Characteristics and work out- comes: A case of Unitary Instructors. *International Review of business Research papers*, 3 (2)184-203.
- [16] LaRose, R., Gregg, J., & Eastin, M. (1998). Audio graphic tele-courses for the Web: An experiment. *Journal of Computer Mediated Communications*, 4(2).
- [17] Lynch, R., & C Dembo, M. (2004). The relationship between self-regulation and online learning in a blended learning context. *The International Review of Research in Open and Distance Learning*. 5(2).
- [18] Marriot, N., Marriot, P., & Selwyn. (2004). Accounting undergraduates’ changing use of ICT and their views on using the internet in higher education-A Research note. *Accounting Education*, 13(4), 117–130.
- [19] Means, B., Toyama, Y., Murphy, R. F. and Baki, M. (2013) 'The effectiveness of online and blended learning: A meta-analysis of the empirical literature', *Teachers College Record*, vol. 115, no. 3, p. 1.
- [20] Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). Internet and higher education e-learning, online learning, and distance learning environments: Are they the same? *The Internet and Higher Education*, 14(2), 129–135.
- [21] Mpofo V, Samukange T, Kusure LM, et al. (2012) Challenges of virtual and open distance science teacher education in Zimbabwe. *International Review of Research in Open and Distance Learning* 13(1): 207–219.
- [22] Mustafa Y. and Sharif M. 2010. An Approach to Adaptive E-Learning Hypermedia System based on Learning Styles (AEHS-LS): Implementation and Evaluation. *International Journal of Library and Information Science*, 3(1): 15-28.
- [23] Naif Jabli, Adel Qahmash ‘The Benefits and Barriers of E-learning in Higher Education in Saudi Arabia’ *Journal of Emerging Trends in Computing and Information Sciences* ©2009-2013 CIS Journal.pp. 877-880
- [24] Norberg, A., Dziuban, C. D., & Moskal, P. D. (2011). A time-based blended learning model. *On the Horizon*, 19(3), 207–216.

- [25] Piskurich GM. Preparing Learners for e-Learning. San Francisco: Wiley and Sons; 2003.
- [26] R. C. Clark and R. E. Mayer, E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning: John Wiley & Sons, 2016.
- [27] Richie, D., & Gimenez, F. (1995-96). Effectiveness of graphic organizers in computer-based instruction with dominant Spanish and dominant English-speaking students. *Journal of Research on computing in Education*, 28(2), 221-233.
- [28] Ross, B., & Gage, K. (2006). Global perspectives on blended learning: Insight from WebCT and our customers in higher education. In C. J. Bonk, & C. R. Graham (Eds.), *Handbook of blended learning: Global perspectives, local designs*, (pp. 155–168). San Francisco: Pfeiffer.
- [29] Sarasin, Lynne Celli. (1999) *Learning Style Perspectives, Impact in the Classroom*. Madison, WI: Atwood Publishing.
- [30] Stacey, E., & Gerbic, P. (2007). Teaching for blended learning: research perspectives from on-campus and distance students. *Education and Information Technologies*, 12, 165–174.
- [31] Surjono H. D. 2009. The Implementation of an Adaptive Elearning Using the Learning Management Systems of Moodle. In the International Symposium on Open, Distance, and e-Learning (ISODEL'09), 8 -11 December, Yogyakarta, Indonesia.
- [32] Tavangarian D, Leypold M, No" lting K, et al. (2004) Is e-learning the solution for individual learning? *Electronic Journal of e-Learning* 2(2): 273–280.
- [33] Verdú, E., Regueras, L.M., Verdú, M. J., De Castro, J.P. and Pérez, M.A. 2008. Is Adaptive Learning Effective? A Review of the Research. 7th WSEAS Int. Conf. on Applied Computer & Applied Computational Science (ACACOS '08), Hangzhou, China, April 6-8, pp. 710-715.
- [34] Walimbwa M (2008) Integrating e learning in teaching and research in upcoming East African regional Universities. Paper presented at the meeting CNIE Banff, Alberta.
- [35] Wang L., Wang C.C., Lin W.B., & Xu F., "Exploration on blended –teaching model under support of Blackboard network platform," *Experimental Technology and Management*, vol. 31, no. 11, pp. 195-197, November 2014.
- [36] Young, J. R. (1997). "Rethinking the Role of the Professor in an Age of High-Tech Tools," *The Chronicle of Higher Education*, 44 (6).

