

Electronic Learning Management System: Relevance, Challenges and Preparedness

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Abstract :

Corona pandemic (COVID-19) opened up new room for academic discussion in the pedagogic perspectives. It was so abrupt that many institutions were even not aware of the minor or major effect of the disease worldwide. The result was a complete standstill for a couple of days. On the other hand, institutions who have been utilizing blended learning techniques for regular education or distance learning mode gradually shifted to complete virtual classrooms. King Abdulaziz university (KAU), being the most high-tech institution in the entire Middle East/Gulf easily coped with the saddest time for education in the recent history. This research is a case study of a government university in Saudi Arabia (King Abdulaziz university, Jeddah). The university administered each of its faculty in the same way without any exception, however policies at the department level(s) were formulated locally. The data and observations used in the study were based on the teaching-learning practices occurring at the faculty of applied studies of KAU. It was found the e-learning/distance learning is very important as a tool of education, however, there are many challenges on the way to successful implementations of educational principles in order to attain pre-determined aims and objectives. It was concluded that distance learning is the only way we can continue education in the time of COVID-19 that has disrupted global education scenario. But, proper training for human resource and institutional preparedness is inevitable. It is recommended that an extended empirical and in-depth study be carried out for better inputs and interventions.

IndexTerms - COVID-19, pedagogic, blended learning, distance mode, virtual classroom.

I. INTRODUCTION

Learning management system (LMS) is a [software application](#) for teaching, learning, tracking, reporting, delivery of learning material and the overall management/administration. The learning management system concept is closely related to [e-Learning](#) in general and distance learning in particular, however it is up to the institutions as to how they utilize the resource and facility. Such a system became popular in the late 1990s. Since then, it has been used in various ways.

1.1. Distance Learning

Distance learning is a mode of learning in which interactions between the instructors and students are done via distance mode. In other words, the teaching-learning does not take place face to face except via videos and online interactions. Distance learning can be utilized as a blended learning technique in some situations if the instructors and managers agree. Mahlangu (2018) explained both advantages and pitfalls of the distance learning, however keeping the current lockdown scenario in view, distance learning seems to be the only learning support system.

1.2. Importance of Distance learning in the time of COVID-19 pandemic

Most LMS systems are being utilized as distance learning tool in order to cope with the Corona virus impact of the society and learning environment. All of a sudden, distance education became crucially importance when social distancing was required to deal with the spread of corona virus at the global level. Most institutions were shut down, however some altered their teaching mode from face to face to distance education provided they had the facility and resources.

1.3. Issues related to shifting to the distance learning mode

There are a lot of academic, pedagogic and technical issues involved in making a shift to distance learning especially when students are not used to a virtual classroom. Challenges become more crucial when teachers and learners are not equipped with the tools and unaware of the use. But, something strange happened, and Corona exposed many institutions, administrators, electronic system and the consumers (teachers and learners). The issue is not related to utilization of a certain modes, means and tools, but doing justice to the system of education and claiming satisfaction on teachers and students' parts. In addition, it is a matter of great concern as to how one can make distance learning accessible and equitable for all students.

1.4. Face to face VS online

An academician or a pedagogue may not deny that face to face mode is better than online system, however, online resources can further boost the learning performance if incorporated appropriately. In other words, distance learning as an alternative to one to one education may raise many issues and difference of opinions.

In addition, distance learning may not be a suitable approach for those students who are not mature and sensible about their education and career. It can further be elaborated that distance learning can be utilized initially as a self learning mode which may not be conducive to many types of learners.

1.5. Importance of blackboard

Blackboard is a platform/tool of teaching/learning which includes almost all the facilities. It has three levels: Blackboard basic, collaborate and Ultra. Each one has distinguished features. The link is: <https://www.blackboard.com/teaching-learning/learning-management/blackboard-learn>



Figure.1.Blackboard Ultra image

II. RESEARCH CONTEXT: DIFFERENT PERSPECTIVES

Online learning has become an integral component of modern education system. Therefore, saying something negative without a logic will raise further doubts. However, researchers always look at a problem in different ways sometime by formulating null hypotheses. In the case on utility and pitfall many attempts have been made in different locations by researchers of different fields. In an e-learning environment, learners are found more engaged in their learning and the assessment process (Chandra & Lloyd, 2008).

Usually studies are carried to assess the effectiveness of e-Learning compared to traditional teaching methods (Lahti, Hatonen, & Valimaki, 2014; McCutcheon et al, 2015). In general, most research findings indicate that e-Learning seems to be at least as effective as conventional teaching methods in relation to gaining knowledge, however the sub domains may vary. E-learning/blended learning's effectiveness was studied in the Saudi learning context (Khan, 2014, 2016). In some professional courses such as medicine, nursing, engineering, e-learning can play an additional but fruitful role in the process of knowledge sharing. On the other hand, development of skills may not be attained if the system is solely based on distance mode. (Bloomfield et al, 2008; McCutcheon et al., 2015). E-Learning's actual effect can not easily be assessed in a short term teaching module. Terry et al (2016) found that there was no significant difference between a conventional teaching group and an e-Learning group, but a conventional teaching group with additional access to e-Learning showed the best results in terms of skill acquisition. Hence, no significant difference was noticed by Gega et al (2007). Training of teachers for e-pedagogy is also significant. In this connection, Jimoyiannis et al (2013) contended the need of Preparing teachers to integrate Web 2.0 pedagogy. It emphasizes the need to on the job training for those whose e-training skills are not updated and up to the required level.

'Blackboard learn' may offer teachers and students huge benefit of almost all the features of e-learning. (Bradford et al., 2007). Users always access blackboard learn through the internet anytime and anywhere at home, on the way or at college campus (DeNeui & Dodge, 2006). Some past studies reported that blackboard learn's features normally appeal to most students. Ellis et al (2009) observed that blackboard has mainly three types of interactivity: student to content, student to instructor and student to student which proves that learning is a tri-polar activity.

Moreover, one has to remember that these studies have been carried out as blending learning aid or distance learning mode rather than teaching/learning in an emergency situation like COVID-19 effect on life and education.

III. KING ABDULAZIZ UNIVERSITY: PREPAREDNESS, CHALLENGES AND MANAGEMENT

King Abdulaziz university (KAU), Jeddah, KSA is one of the top ranked institutions in the entire middle East/Gulf especially in the area of technology and its application. KAU has been using electronic system for not less than 11-12 years, however, the role of the online/distance learning system was little different from the current scenario.

3.1. Central electronic system

KAU-electronic system has been actively operation for more than a decade. Each and every information on a student or employee of KAU is available online.



Figure.2. University online system

The university has been using the 'blackboard platform' through the deanship of distance learning for distance courses as well as technology integration for better teaching and learning.

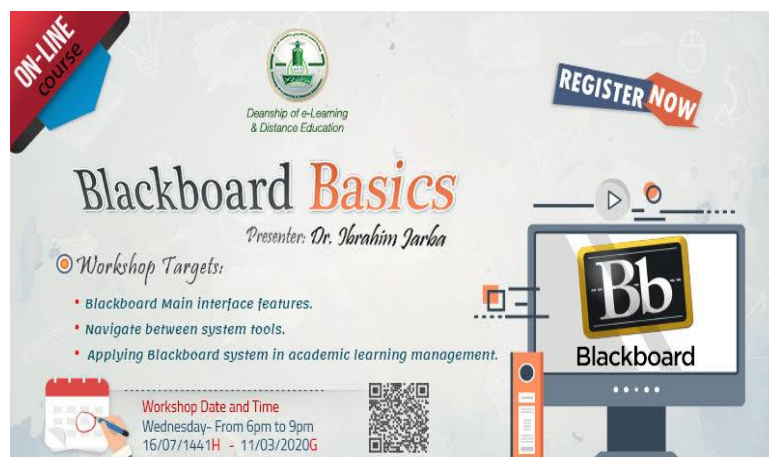


Figure:3.blackboard basic tool

In order to refresh the academic staff with the techniques and technicalities, the deanship of distance learning (DDL) has been conducting training programmes from time to time. Keeping the adverse effect of CORONA and other technology related issues, DDL notified about many training sessions rather on daily basis for different groups categorized faculty and specialty wise.



Figure: 4. University notification for training session

As the whole teaching could not be controlled by the blackboard basic, the university administration switched over to the 'blackboard collaborate'. Finally, when virtual classroom was found inevitable, the university hired the highest level of tool 'blackboard collaborate Ultra' which is quite compatible for all kind of online teaching and virtual learning. The ultra version has a great facility of recording the sessions. So, instructors can be made more professional and accountable. In addition, participants' attendance can be recorded too.

IV. VIRTUAL CLASSROOM

KAU is using BB-Ultra for interactive virtual classes.

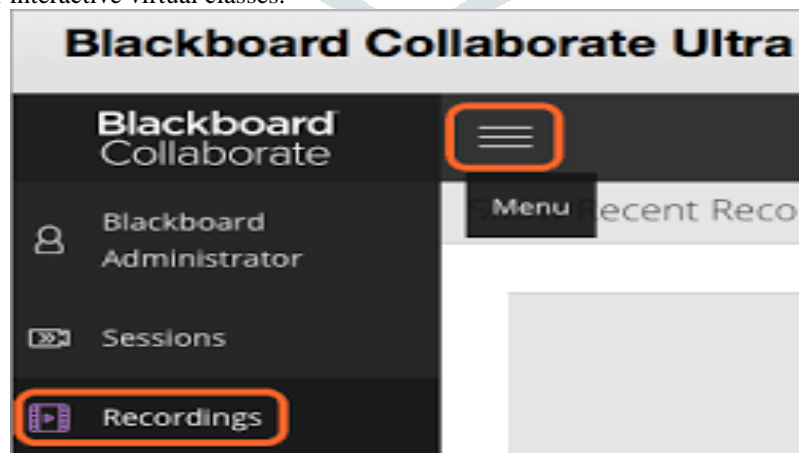


Figure:5.Classes (with recording)

4.1. Activities recorded

A detailed record of different activities can be made such as number of attendees, the time one stayed in the class and so on. Besides, video/audio participation can also be recorded for better management.

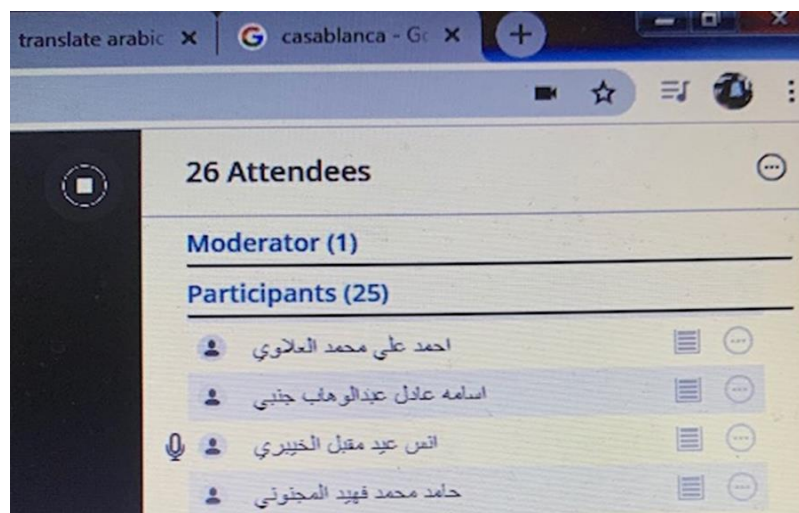


Figure: 6.online record of attendance

The teachers can share screen through PPTs and discuss via video or audio chat. In addition, they can discuss doubts initially in the chat box and later by raising hands so the teacher can take up one by one. The system indicates who has raised the hand.

4.2. Grading related

The teacher/system can explain everything about the grading components or parts with marks against each components or sub components if any.

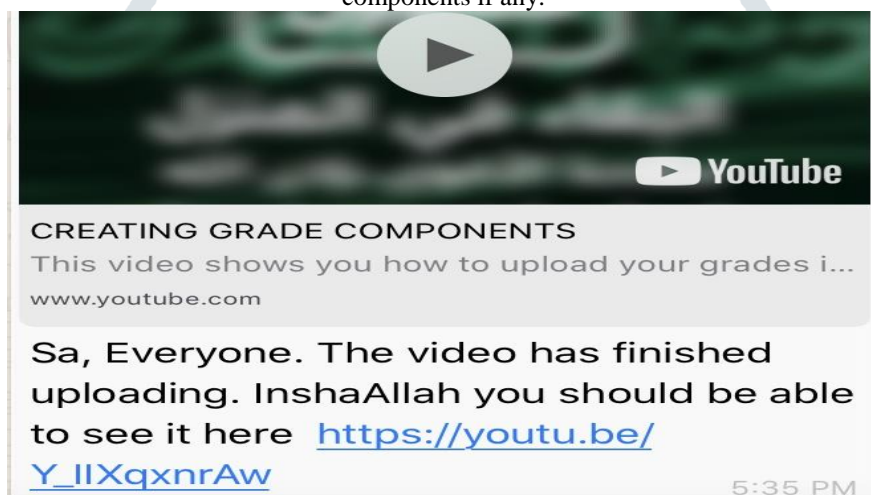


Figure:7. grading centre

4.3. How to conduct exams

The system has a nice auto system of giving/taking exams, however a few technicalities are needed. The exams/quizzes will be ready in the system and the teacher makes them available for a specific group of students as per the need at a specific time and for a limited period.



Figure:8. Conducting exams

4.4. Grades in the grade space

The system shows how much marks one has scored through online mode (blackboard in this context).

المكونات							
المكونات الفرعية	تضمن في منتصف الفصل الدراسي أو نهاية الفصل الدراسي	الأهمية	يجب الإجتياز	الدرجة بالأحرف	النسبة المئوية	النتيجة/ من	الاسم
لا يوجد	النهائي	20	N	A	90	18/20	GRC 111 - Mid term
لا يوجد	النهائي	30	N	+A	96.67	29/30	GRC 111 - Quizzes
لا يوجد	النهائي	20	N	A	90	18/20	GRC 111 - Assignments/Homework
لا يوجد	النهائي	10	N	+A	100	10/10	GRC 111 - Oral participation

عودة إلى السابق

اختر رقم مرجعي آخر للمقرر

Figure:9.details of the grades

4.5. Technical challenges

Installation of tools is not difficult, but maintenance is really crucial. Else the whole system will collapse. Like any other places, my university also faced some hitches due to heavy academic load at the same time especially from 10.m. to 2pm, however it was not unmanageable. The second day experience was much better. And, finally one day almost everything was settled nicely. The credit goes to the technical expertise of the university which kept on repairing faults and issues if any.

4.5.1. Maintenance of the system

Dear Faculty Members

We want to notify you all that the Blackboard system will be under maintenance and will be stopped Friday **24th April 2020** starting from **2:00 am** to **6:00 am**. The system will be back to work after the maintenance is done InshaAllah

We are working for you all
We appreciate your understanding
Deanship of E-learning Distance Education

Figure:10. Regular maintenance

V. OTHER ALTERNATIVE TOOLS

As mentioned, main teaching activities took place via the blackboard, but the university has also utilized other alternatives for emergencies. Following are some of them.

5.1. Microsoft teams

Microsoft Teams استخدام للإجتماعات

الدخول على <https://teams.microsoft.com/downloads> أو عن طريق تحميل التطبيق عن الهاتف المحمول

تسجيل الدخول عن طريق الرقم الوظيفي الخاص بك (xxxxxx)@kau.edu.sa
لسهولة الوصول إلى جهات الإتصال

انشاء فريق

- دعوة الأعضاء عن طريق البريد الإلكتروني
- إمكانية مشاركة الشاشة من أحد أعضاء الاجتماع
- مشاركة الملفات والموارد باستخدام تطبيقات Microsoft 365

لتنزيل البرنامج

الانضمام إلى فريق أو إنشاؤه ومشاركة الرابط

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عمادة تقنية المعلومات
Deanship of Information Technology

Figure:11. Microsoft teams collaborated with the university online system

5.2. Google Hangouts

Many people use 'google hangouts; for socialization, video chatting, sharing information. The university exploited this opportunity and advised the consumers to make legal use of the App as per the need.



Figure 12. google hangouts as a tool

5.3. Zoom: mainly used for meetings

Not only google, even Zoom was used to interact. Most staff meeting were conducted via the 'Zoom'.



Figure 13. Use of the 'Zoom'

5.4. Other significant issues

As mentioned above, online teaching is not beyond challenges. The foremost issue one can encounter is the availability of the tool (for different reasons). University administration has given an official laptop to all its employees (teaching staff in particular). Hence, important to note that the university offers free wi-fi service 24x7 in the campus for all the students and the staff. Next is the internet access, then comes the issue of good signal reception. In addition to these technical issues, the client may not be aware of the use of the technology or the Apps.

In other words, Despite the fact that the whole world is digital and nearly all the youngsters are addicted to technology usage. Some of the users and consumers utilize technology for communication and entertainment, but many researchers and pedagogues have been of the opinion that technology can equally be relevant for teaching-learning because it keeps the users motivated and engaged.

VI. NEED OF TRAINING FOR STUDENTS AND TEACHERS

6.1. Local training and orientation

Keeping the need of online training in general and blackboard in particular, continuous professional development sessions were organized. It started with the theoretical and research perspectives. Some workshops were conducted in this direction to acquaint the teaching staff with the theory as well as practice. Regarding new enrolments, class teachers oriented them with the blackboard in particular because blackboard as online teaching tool has already been integrated with the ODUS (on demand university system) for both the staff and students. The university is already technologically equipped and some of the colleges are exactly paperless. Old students are already aware of the blackboard system and its utilization, therefore only freshmen were oriented however some old students also required refresher training.

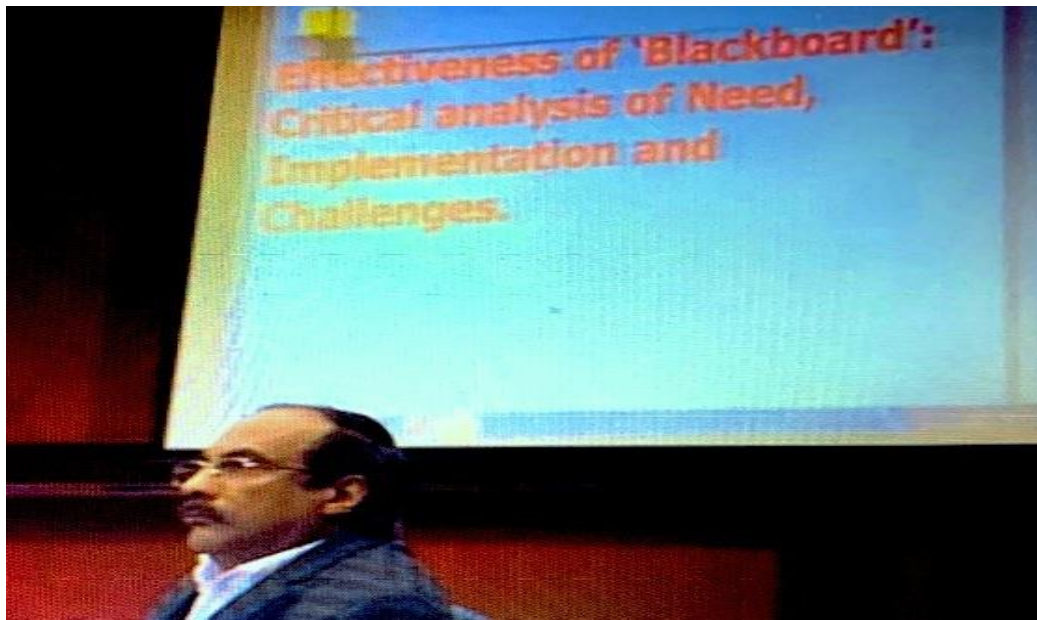


Figure:14. a lecture on Blackboard utilisation

6.1.1. Distance learning /online training sessions

As referred earlier, King Abdulziz university has a deanship for distance learning. It conducts online training sessions as well as face to face workshop for utilization of online/distance mode of education. In addition, the university has a centre of training and development which conducts general training as well as sessions in collaboration with distance learning deanship. The training unit sometimes conducts programmes/sessions in collaboration with the departments to deal with specific issues.

6.1.2. Local coordinator(s)

Keeping the current COVID-19 scenario in view, almost each college has appointed (from the existing staff) a coordinator of online/distance learning especially to sort out the issues of virtual classrooms. These coordinators are either from computer-technology field or one who has experience in educational technology. They issue notices and guidelines based on the urgent needs from time to time.

6.1.3. Course coverage monitoring

Outline of the courses/syllabuses and weekly coverage are uploaded on the system which is monitored from time to time. In case, it is needed, a meeting via zoom is conducted to discuss the issues of urgent type. In addition, email/WhatsApp and a specific workplace is also utilized to deal with teaching related issues.



Figure:15. A meeting held via the Zoom

Zoom has been successfully used as an alternate tool for communication, holding staff meetings etc. It has a wonderful facility of recording the sessions in part or full.

6.2. Alternative tools/machines

Sometimes a single tool or App can't be trusted especially when a teacher is instructing. There is always a likelihood of losing a connection or encountering internet or technical issues. My personal experience enriched me further therefore I usually keep 2 desktops around (one active and the other operational but not active). In addition, in order to communicate alternatively, I use my smart phone for connecting the learners via social networking or instant messaging like the WhatsApp.

The question regarding having one tool is sometimes crucial and not feasible, so how can one have alternative devices. Well, in some countries, the whole family uses a separate tool. In that case, one can utilize one other tool as a backup. Most of the families are equipped with many computers(mobiles/tabs/desktops etc). Similarly, one family has 2-4 TVs in different rooms. In sum, it depends on the environment one is living. Moreover, nearly all the higher institutions in Saudi Arabia have gifted a laptop to its employees to work for the institution/teaching/research.

6.3. Quiz/exam preparation, administration and grading records

It has been mentioned that the university has shared videos regarding making of exams, administration and grading as mentioned above. The local /unit coordinators facilitate the staff by offering inputs on various issues from time to time. Having conducted quizzes or exam(s), the marks can be graded in an Excel sheet or google spreadsheet which is compatible with the online system of the university for registration, approval and declaration of marks. The sheet may have as many columns required.

Assessment (30)				Final
1 & 2 (10)			Midterm (20)	
er.2	paper.3			
Quiz.2(1.25)	Quiz.1(1.25)	Qui.z(1.25)	paper.1	
0	0	0	0	
0	0	0	0	

Figure:16. Google spread sheet

6.4. Template of the online grading system

The registration of the students' grades appear on the system like the image below. It has required components in which grades are filled and the auto results are ready. The enrolled students can access their results without the final exam grades or as a total at any stage they like.

1 تعريف مكونات الدرجة لكل شعبة دراسية

2 ادخال تفاصيل ومكونات الدرجات

تعريف المكون الخاص للتقييم

الوصف	رمز الاختبار	الوزن	ممنوع	مكونات	تفاصيل المكونات الفرعية
MidTerm Exam	GRC112	20	<input type="checkbox"/>	No	التفاصيل
Quizzes	GRC112	30	<input type="checkbox"/>	No	التفاصيل
Assignments/Homework	GRC112	20	<input type="checkbox"/>	No	التفاصيل
Oral Participation	GRC112	10	<input type="checkbox"/>	No	التفاصيل
Final Exam	GRC112	20	<input type="checkbox"/>	No	التفاصيل

3

4 تنفيذ الاختبارات حذف المكونات المختارة تحديث الطالب المسجلين نقل الدرجات المركبة للدرجات النهائية

Image:17. Students' grades on blackboard system

After filling up the required columns for each registered students the online result will look like the image below.

الأهمية	الوصف
20/20	GRC112 - MidTerm Exam
30/30	GRC112 - Quizzes
20/20	GRC112 - Assignments/Homework
10/10	GRC112 - Oral Participation
20/20	GRC112 - Final Exam

Image:18. Components and distribution of the grades

6.5. Management of online exam

6.5.1. Management of cheating

Management of cheating is a serious concern these days while learners can use multi media and multiple sources for getting helps and assistance. Keeping such issues in view, the exam designers may give multiple sets of questions to different students provided there is a ready question bank. The software itself chooses some specific questions on random basis. In addition, the learners may be asked to switch on their audio and video device so that the instructor(s) may check any unwanted activities. Moreover, it is not a foolproof technique in digital era.

6.5.2. Time management

Time management is very simple in online testing and assessment. The examinee can not access the exam or test/quiz after the time/date is over. It is machine and system controlled.

6.5.3. Social networking: WhatsApp as a follow up tool

In order to interact with the learners beyond the online university system, teachers usually create a WhatsApp group to offer instant help and assistance if required.



Figure:19. Whatsapp use for communication

VII. CONCLUSIONS AND RECOMMENDATIONS

7.1. Conclusions

Online learning is always interesting as a motivating tool. It can be further useful if there are resources: both physical and human. Equipped labs and trained staff are as important as e-learning in any modern institution. The blackboard-learn system in particular enhances learning opportunities for the regular or distance students. However, it is quite expensive if copyrighted. A huge amount of money is invested which all institutions can't bear. Training of staff and orientation of students is also important prior to trying virtual classroom or an online mode.

7.2. Recommendations

University Managements should ensure required equipments and resources in order to make distance learning a success. There is also a need for faculties and institutions to have their own online system along with a tool like the blackboard learn. A train the trainer course should be attended by a perspective e-learning coordinator with in the faculty/department. Students need to be made aware regarding the use of sophisticated tools like the blackboard learn or self designed online platform of an institution. The concerned staff should upload authentic material on the blackboard and students should be given some incentives like some marks/grades of participation etc.

7.3. Limitation of the present study

The present study is purely theoretical in nature but experienced based which has recently happened at King Abdulaziz university, Jeddah The face to face teaching was disrupted half the way of a semester, but the university successfully switched to distance learning mode and perfectly achieved the targets.

7.4. Areas of further research

Since the present study is a theory – building type, it can further be extended to the following domains/areas:

- 1- An empirical study is urgently required,
- 2- There is a need to study crucial challenges faced by students, instructors, technical units etc,
- 3- Pitfall of blackboard learn as a tool,
- 4- Factors affecting staff in the adoption and effective use of blackboard-learn system
- 5- Need of training for teachers and students,
- 6- Lack of motivation in becoming high tech for education.

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