

# A COMPARATIVE STUDY BETWEEN CONVENTIONAL & E-LEARNING MONITORING METHODS FOR UNIVERSITY LEVEL PROJECTS

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## **Abstract**

*Countless projects run in every university or the institutions of higher learning, and most of them are in the categories such as projects in the undergraduate levels to large chunk of them in the master's and PhD levels et al. It is obvious that most such projects are formulated for the specific time durations for project completion. Such projects are therefore planned for either group based teamwork or on the individualized projects. It solely depends upon project complexities and project guides allotting the projects. General trend is that most projects process conventionally from their announcements to mentoring and monitoring besides face to face consultations with the guides and vice versa. This paper aims to present differences between the conventional project management methods and e-Learning project management methods. Northern Border University (NBU) in Saudi Arabia has already implemented Blackboard LMS in its campuses. The university strategically planned and therefore started the process of announcements, mentoring and monitoring through Blackboard in the most recent initiatives. NBU utilized such resources to begin with that also included using the social networking facilities of Blackboard LMS for that purpose. Our assessments at the end of the day were meticulous and we had surprising assessments that there were great differences between conventional and electronic learning methods. We concluded that e-Learning tools take less time and they offer better interactivity between the students and guides. It provides better monitoring methods for mentors to evaluate each step of the project management process.*

**Keywords-** Blackboard, ELearning, Research Projects, Videoconferencing.

## **1. Introduction**

Internet use in higher education has grown exponentially in the recent years (Allen & Seaman, 2010; OECD, 2010; Smith Jaggars & Bailey, 2010). Information & Communication Technology and especially e-Learning has captured major attention in the past few years due to their major roles in the higher education sector. Ma, *et al.*, (2008) says “e-Learning is an ideal learning environment through the use of modern means of information technology, through effective integration of information technology, and the syllabus to obtain a new learning method, that can fully reflect the primary role of the students to thoroughly reform the traditional teaching structures and essence of education to train large numbers of high quality personnel.”

Use of Internet technologies as major resources to deliver wide range of solutions which can ascertain the enhancement of knowledge and performance advocate the e-Learning concept (Rosenberg , 2001; Wentling T, Waight C, Gallaher J, La Fleur J, Wang C & Kanfer A, 2000). It is a proven fact now that large chunk of students have already started using numerous types of contents from the available e-Learning & m-Learning tools or the resources they are made available by their respective institutions to obtain all types of contents they seek for either regular or distance learning solutions. It is a proven fact that every student use smartphones nowadays. Through this paper the researcher has tried to promote the mobile-based tools with equal support of online learning solutions. Both students and guides now have better resources in the form of various mobiles Apps to use for easy and effective connectivity amongst them at anytime and anywhere environment. Northern Border University (NBU) in Saudi Arabia has begun to use Blackboard Learning Management System (LMS) since last couple of years. This LMS provides Blackboard Mobile Apps as well. Keegan thoroughly described the benefits and drawbacks henceforth recommended the mobile learning options in his latest book (D. Keegan). The researcher conducted an experiment on the Community College students of NBU and most of whom comprised of the working professionals to obtain results for this paper.

Owing to their prior professional engagements, most of them had their busy schedules hence busyness with least time available for their involvement in others tasks. It was literally impossible for them to manage time for regular meetings with their project guides due to scarcity of time. A training workshop was conducted before the start of the project to obtain perfect results. The focus of that training was to make the learners aware of options and procedures to use this LMS and Mobile Apps. NBU used video conferencing options as well to continue managing discussions with student groups and guide and vice versa.

Figure One shows how discussion is going on online through Blackboard Collaborate. Group of students present on different platforms attended in the discussion.

Figure 1. Online discussion with group of students through Blackboard collaborate



Figure Two shows Online White Board on which students and teachers read and write just like we do in the face to face classroom atmosphere. We can draw pictures here while talking and chatting with the group members.

Figure2. Online Board to read and write to interact with the students through Blackboard Collaborate

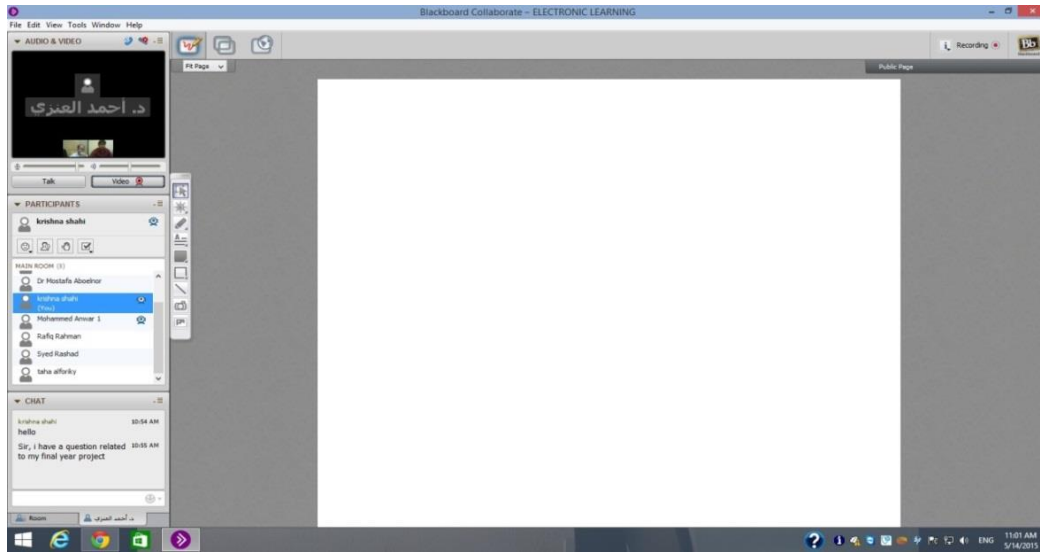


Figure Three shows the general process to monitor the whole project cycle online from start to end.

Figure.3 General Monitoring process for online students through Blackboard



### 1.1 E-Learning in Higher Education

According to (Shopova, 2012) “e-Learning became an important instrument in new Higher Educational Environment in the digital age that creates student-centered learning and educational practices, and of course it offers entirely new flexible learning methods to implore.” Focusing on the real difficulty of ICT learning process should be a major priority of the institutions concerned. Here, e-Learning plays a major role to introduce change of learning and teaching in the Higher Education System worldwide.

## 2. Literature Review

Current scenario of higher education is well understood in this context that it has become a scrupulously competitive market with feasibilities of flexible, accessible, user-centric learning experiences to utilize (Buzducea, 2010; Carter, Salyers, Page, Williams, Hofsink, & Albl, 2012). In other words, it can be well said that students with strong desire to be able to access the education technology in the convenient environments can avail multiple such platforms because they are now best supported with unaccountable resources for their free engagement and accessibility to the materials they have in variegated manners. Their flexibilities can be broadly explained in this aspect that institutions provide them ample room to avail flexibility hence concerned institutions think about the time, place, instructional pace, delivery methods and learner entry to ease the whole process (Ahmed, 2010; Bichsel, 2013; Carter, Salyers, Page, Williams, Hofsink, & Albl, 2012; Fisher, 2009; Hanover, 2011; ITC, 2013; Johnson, Smith, Willis, Levine & Haywood, 2011; McLinden, 2013; Salyers, Carter, Barrett, & Williams, 2010).

Out of the countless benefits of e-Learning, the ones which are sought after include flexibility, learner centric, time and cost saving solutions besides unlimited access of learning material to quick updating of learning materials amongst others. Several extensive researches have been done which show that students avail the benefits to the maximum extent even without their physical presences in concerned classrooms (N.A. Baloian, J.A. Pino, H.U. Hoppe, 2000; A. Kumar, P. Kumar, S.C. Basu, 2001 & G. Piccoli, R. Ahmad, B. Ives, 2001). Another important factor is interactivity which always remains desirable because of the positive effect it offers and most importantly its effectiveness in the education sector today (D. Jonassen, M. Davidson, M. Collins, J. Campbell & B.B. Haag 1995 PP. 7-26).

We attempted to use videoconferencing methods as part of the video learning solutions for hassle-free and result-oriented communication with the students concerned. Having been already proved from the research studies that learning outcomes of e-Learning with instructional videos remain far better than the face to face learning are worth noticing (A. Bento 2000 & S.R. Hiltz, M. Turoff, 2002). What makes videos so important are that they remain an extensively powerful non-textual means to showcase expressions and therefore capture and present information more emphatically (Hampapur, R. Jain, 1998). It therefore gives unique solution to provide multi-sensory learning environment which resultantly improves the ability of learners fast to learn and retain information thoroughly (M.R. Syed, 2001, pp.18-21). Furthermore, it also enables for them to avail random content access that ultimately makes it possible for their increased learner engagement to obtain knowledge (D. Zhang, L. Zhou, 2003, pp. 1-14 & M. Alavi, D. Leidner, 2001, pp. 1-10).

Through this research study the researcher emphasizes that e-Learning refers to the integration of pedagogy besides various technologies and contents integrations within teaching and learning environment and contexts for desired outcomes. It is well understood therefore that e-Learning can include face-to-face (f2f) classrooms through which numerous types of information technology tools such as Learning Management Systems, Video-conferencing and Web-conferencing, Mobile devices, Multimedia and Simulation et al are brought into use to avail the wider option. NBU is Saudi Arabia used several such online tools in the course of this research as part of the online project completion with maximum flexibility and obtained remarkable result as well.

### 3. Objective of the Study

This paper intended the author to investigate the impact of monitoring of Bachelor's and Diploma level projects through e-Learning education method. What is percentage of students are ready to work with e-Learning? Maximum of students are from community colleges, some of them are working professionals also. So, researcher started a comparison here that in which method students are more comfortable. The researcher has used Blackboard LMS to monitor the projects at NBU in Saudi Arabia. Survey was conducted among the students through using questionnaires. The data was examined to produce the statement to recommend the monitoring of projects through e-Learning whether it was mandatory or not.

### 4. Methodology

First we trained all students to use Blackboard after that researcher divided students groups into two. Total number of students' taken for this research was forty and in each group there were 20 students. Group one comprised of the students which followed the e-Learning method under which their every single activity was monitored electronically to obtain results. It therefore followed the electronic learning methods since the initial stages from the selection of projects to the discussion with guide and most importantly many stages like project progress reports, assessments and grading et al. The Second group of students followed the traditional learning methods and therefore they met with their professor on regular intervals to show their progress report besides their involvements in other roles such as face to face discussions and presentations they had. Whole project monitoring process was monitored through the use of traditional methods that meant face to face applications. A Blackboard LMS workshop was conducted once the projects of each group completed to assess outcomes with an aim to compare with the second group that had used traditional methods to complete projects.

A Questionnaire-based survey was conducted on the final semester Diploma students from e-Learning Department from various colleges at NBU thereafter. The participants included students (Final year) enrolled in 2015 academic session. The researcher designed questionnaires to interview the students henceforth the questionnaire was meant to determine students' perceptions in the areas of project selection, project content monitoring, assessment and evaluation, as well as communication and learning experiences. Data from the respondents was analyzed by using Statistical calculation. After that a comparison was done to get an analysis between the two groups. NBU in Saudi Arabia uses Blackboard LMS for e-Learning and this author has used Blackboard Learn, Blackboard Mobile and Blackboard Collaborate to facilitate monitoring of projects concerned.

First, we gathered data from the Group one which is online group and their answers are mentioned in Table 1. Based on questionnaires researcher divided the answers into two parts one is for satisfied/Yes, It is for those students who rated online project monitoring method as good and answered in Yes. Second part is not satisfied/NO for them who are not satisfies with online monitoring method and answered NO. In data researcher rated for Yes= 1 and for No=0 points. In first group N= 20. After the gathering of students answer researcher calculated the satisfied students answer in percentage. That is shown below in Table 1.

Table 1. Group One, those who were being monitored online

Question Numbers	No of Students Satisfied/Yes	No of Students Satisfied/No	Not	Percentage Yes/Satisfied	Questionnaires
1.	20	0		100%	Is this method saving your time?
2.	15	5		75%	Section of projects was easy through Blackboard?
3.	18	2		90%	Are you discussing properly your project matters with your teacher through Blackboard
4.	17	3		85%	Online assessment of your project is good with the help of Blackboard
5.	15	5		75%	Grading system is good
6.	18	2		90%	Coordination between your group & teacher
7.	19	1		95%	Coordination with other groups from different universities, research labs related to topics. Are

you getting help?

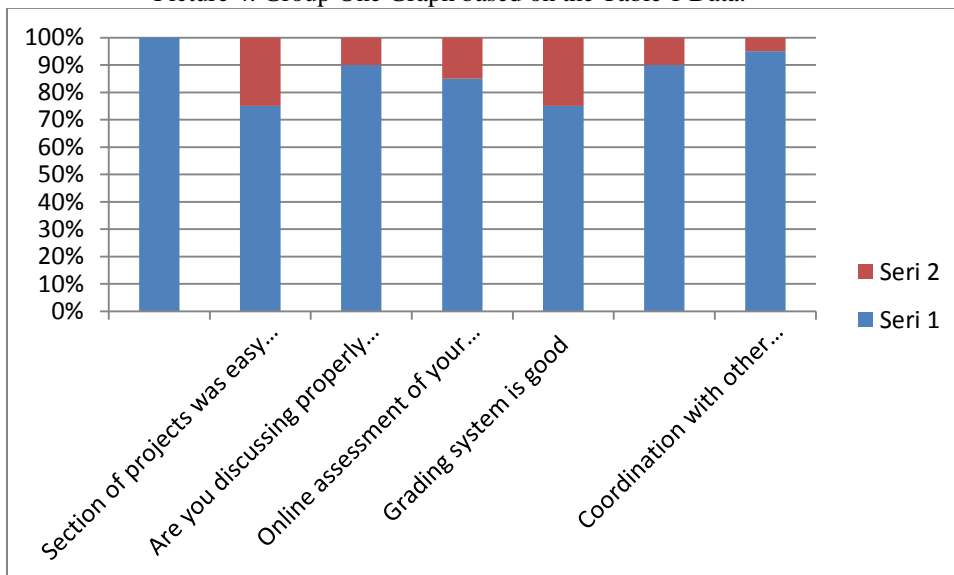
In the Table 2, we gathered data from Group Two those who belongs from the traditional learning method. Same process has been repeated in Table 2. For students those who are satisfied with traditional method as compared to online method rated Yes/satisfied and who are not satisfied rated NO/Not satisfied. In Second group N= 20. In this data also for Yes= 1 and for No=0 points. After the gathering of students answer researcher calculated the satisfied students answer in percentage. Remember we calculated the percentage of only satisfied/Yes students. That is shown below in Table 2 below.

Table 2.Group Two, those who were following the traditional method

Question Numbers	No of Students Satisfied/Yes	No of Students Not Satisfied/No	Percentage Satisfied	Yes/	Questionnaires
1.	2	18	10%		Is this method saving your time?
2.	10	10	50%		Section of projects was easy through Manual method?
3.	7	13	35%		Are you discussing properly your project matters with your teacher?
4.	8	12	40%		Manual assessment of your project is good with the help of Blackboard/Manual
5.	10	10	50%		Grading system is good
6.	5	15	25%		Coordination between your group & teacher
7.	1	19	5%		Coordination with other groups from different universities, research labs related to your topics. Are you getting help?

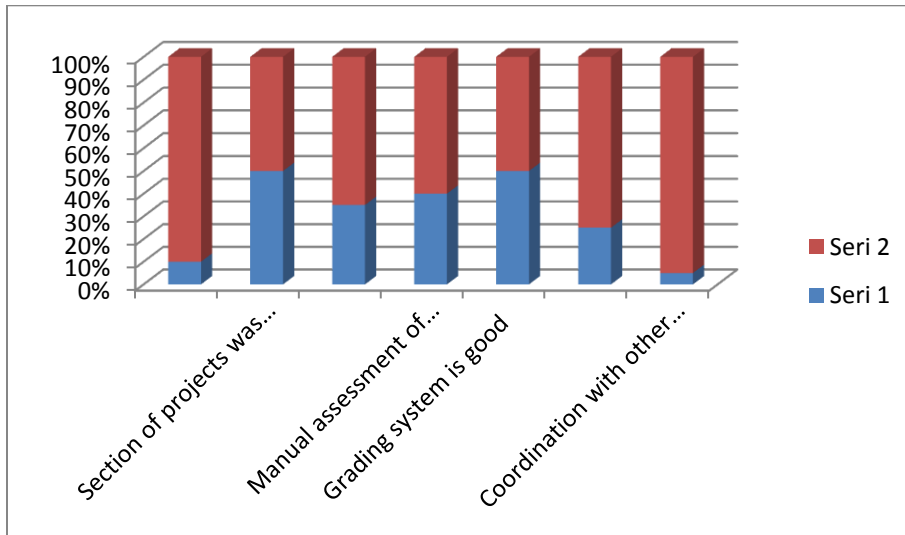
This Figure 4 graph is generated based on Table 1 data. Here in this graph we have taken only two variable data that is- satisfied/Yes & Not Satisfied/No. Here Series 2 with brown color shows the Not satisfied/No & series one with blue color indicates the satisfied/Yes data. Graph shows maximum students from group one are satisfied with online monitoring method. It indicates that Group One students are satisfied with the online method on maximum points. Their average satisfaction rate is 87.14%.

Picture 4. Group One Graph based on the Table 1 Data.



This Figure 5 graph is generated based on Table 2 data. Here in this graph we have taken only two variable data that is- satisfied/Yes & Not Satisfied/No. Here Series 2 with brown color shows the Not satisfied/No & series one with blue color indicates the satisfied/Yes data. By Graph here it is clear that maximum group 2 students are not satisfied with the facilities available in traditional learning. In group two students, as per this graph, are not satisfied with the facilities which they obtained in the traditional method (Face to Face). Their average satisfaction rate is 30.71%.

Picture 5. Group one Graph based on Table 2 data.



5. Result

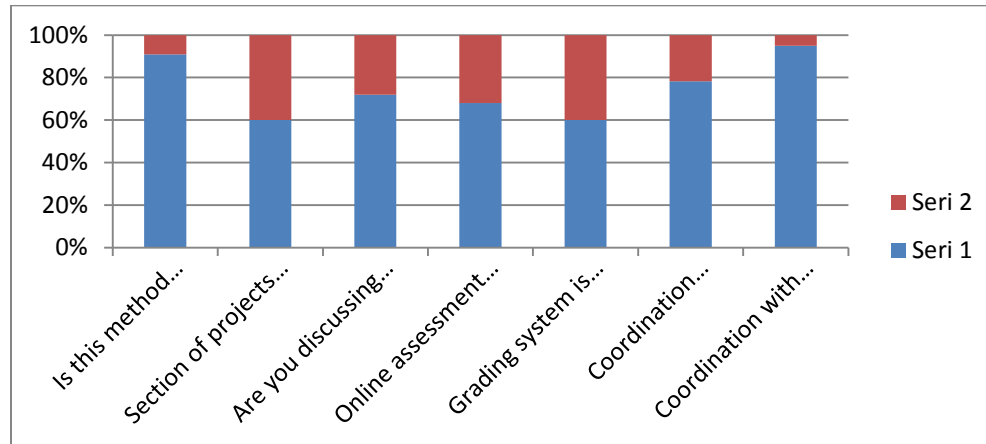
The Table 3 below is based on Table 1 & Table 2. We have taken satisfaction rates from both groups and compared here. We calculated the percentage of answers(Satisfaction rate/Yes) from each questionnaire and then compared them with the respective students Group.

Table 3. Comparative study table based on Table 1 & Table 2 (Satisfied/Yes percentage)

Question Numbers	No of Students Satisfied/Yes Group 1	No of Students Not Satisfied/Yes Group 2	Questionnaires
1.	100%	10%	Is this method saving your time? (Blackboard/Manual)
2.	75%	50%	Section of projects was easy through (Blackboard/Manual)
3.	90%	35%	Are you discussing properly your project matters with your teacher through (Blackboard/Manual )
4.	85%	40%	Online assessment of your project is good with the help of (Blackboard/Manual)
5.	75%	50%	Grading system is good (Blackboard/Manual)
6.	90%	25%	Coordination between your group & teacher (Blackboard/Manual)
7.	95%	5%	Coordination with other groups from different universities, research labs related to your topics. Are you getting help? (Blackboard/Manual)

The figure 6. Graph is generated based on Table 3 data. The satisfaction rates from both groups.(only Satisfied/Yes) The series 1 shows the satisfaction percentage from group 2(Traditional method students). Here series 1 with blue color shows the satisfaction percentage from Group1(online method) and brown one shows the satisfaction between Group2 students. This graph clearly shows that there is a great difference between Group 1 & Group 2 student's satisfaction results. The average satisfaction rate is 87% for group 1 and for group 2 it is around 30% only.

Picture 6.Compare graph between Table 1 & Table 2 Based on Table 3



**T test**

To calculate the exact result researcher did t –test here. He has taken here the satisfaction rates from table 3 for group one and group two which researcher obtained from his questionnaire. Here N=7 shows that it is t test based on the result which is obtained from our seven questionnaire percentage.

Hypothesis testing

Null hypothesis:  $\mu_1 - \mu_2 = 0$

Alternative hypothesis:  $\mu_1 - \mu_2 \neq 0$

Table 4. T test result data obtained based on the satisfaction rates of questionnaire.

Group	Group1	Group2
Mean	87.143000	30.714000
SD	9.511900	18.126500
SEM	3.595160	6.851173
N	7	7

Confidence interval:

95% confidence interval of this difference: From 39.571169 to 73.286831

The mean Group1 – Group 2 = 56.429000

Intermediate values used in calculations:

$t = 7.2932$

$df = 12$

Standard error difference = 7.737

P value and statistical significance:



Final decision of rejection of null hypothesis - The two-tailed P value  $< 0.0001$  & difference is extremely statistically significant. So, here we can now reject the null Hypothesis.

We are accepting here that Alternate hypothesis is true and there is a great difference between the group one and group 2. So, we can now say (based on our statistical data obtained) that Group one students are more satisfied than Group two students. Therefore we can now recommend the online method of monitoring for students.

## 6. Conclusion and Future work

It is clearly understood after thoroughly analyzing the above groups that most of the students were satisfied with e-Learning monitoring methods for their projects who belongs to Group one and Group two students are not satisfied with the traditional method. As per the questionnaire most of the students are agree that they are saving more time , better communication with their guide, better coordination between guide & teacher in online method. It is helping them to coordinate with other students and teachers besides even the teams outside the universities they equally got help through Blackboard from the worldwide university networks possible. This approach of e-Learning based monitoring of projects through Blackboard tools has straightened a good feedback from the students and the teachers alike. This e-Learning based monitoring of projects will overcome student's bashfulness and will motivate them to socialize with others like other university and research lab groups do. This approach creates a triangle link between the students, teachers and technology to achieve the viable and productive learning platform. His researcher concludes and recommends that e-Learning based monitoring of projects is the best way and useful means for time to time checking & to communicate with the students to help them achieve their learning outcomes. This researcher intends to implement this e-Learning based monitoring of projects in Master's level in future and so does propose that such options can be incorporated for other types of projects which NBU has been operating or plans to do in future. This author further suggests that such initiatives will have remarkable impact on the PhD and Post Doc level projects as well.

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## 8. Biography

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