المجلة العراقية لدراسات المعلومات والتوثيق

ردمد (ط) : ٦٦١١-٢٦٦٣
ردمد (ك): ٧٢٢٠-٢٧٠٨

المجلد (٤) العدد (١) تشرين الثاني (٢٠٢١)

مجلة علمية محكّمة نصف سنوية

تصدر عن: جمعية اختصاصي المعلومات والمكتبات والتوثيق العراقية
رقم الإيداع بدار الكتب والوثائق الوطنية (٢٣٣٦) ٢٠١٨

البريد الالكتروني:ildps.iraq@gmail.com


بسم الله الرحمن الرحيم

المجلة العراقية لدراسات المعلومات والتوثيق

ردمد (ط): ٦٦١١ ــ ٢٦٦٣
ردمد (ك): ٧٢٢٠ ــ ٢٧٠٨

المجلد (٤)	العدد (١)	تشرين الثاني (٢٠٢١)

مجلة علمية محكّمة نصف سنوية
تصدر عن جمعية اختصاصي المعلومات والمكتبات والتوثيق العراقية
رقم الإيداع (٢٣٣٦) ٢٠١٨

وحدة الإخراج والتصميم
م. م. عائدة مصطفى سلمان
أنس سامي عبد الغفور

المجلة العراقية لدراسات المعلومات والتوثيق. المجلد (٤) العدد (١)

محتويات العدد

Implementation of Blackboard Tools in Teaching during COVID-19

Dr. Amera H. Abdulrazzaq

Information Technology College, University of Bahrain, Bahrain

ahaqqi@uob.edu.bh

Abstract— With the disruption to social gatherings presented by the corona virus, University of Bahrain as other Universities and educational institutions started the use of online learning as an instructional continuity plan for tools instructors used to deliver live lectures, so students don't miss a lecture or classes through Team or Blackboard platforms as well as other functions and processes. The Online Learning management system (Blackboard) is used as a learning mode to deliver a Second year, IS course at the above-mentioned University.

This "descriptive, analytical study highlights the available tools and facilities of the learning management system (Blackboard) which was implemented and, lead to a successful fulfillment of the requirements of a Data Base Management systems Course. The practiced (Blackboard) features that facilitate the interactions, communications, collaborations and, completion of the requirements include virtual Lecturing, discussion forums, and other, while conducting (Assignments, Tests, Project development, Lab Exercises) by the students. Regarding Instructor's Practices and Findings the study covered a period of 2nd semester 2020 as a result of the quarantine imposed after the spread of Covid19 pandemic, whereas regarding the instructor's perspective positive experience faced during the months of use of the platform are analyzed and discusses. Main finding was the positive and satisfied implementation of the Blackboard tools reflected in the positive benefits on the performance of the students.

Keywords— E-learning, Database management Systems, Blackboard, learning management systems

1 Introduction

The available course management systems, such as Blackboard, Blackboard Vista (formerly WebCT), Desire2Learn, Question Mark Perception, Moodle, and Team, Combine functions; distribute information to learners; enable communication with the learners via discussions, announcements, emails, real-time chat sessions, and an interactive whiteboard; Enable online assessment (evaluation of the students by means of quizzes, assignments, projects, and lab exercises), Progress tracking; tracking of students' use of the learning materials, and facilitating course administration.

In this study the tendency to use BB in delivering the Data Base Management system course by the instructor was according to:

a. The Previous awareness and familiarity with this online learning management systems as how to deliver contents, to communicate with the students, how to record lectures of the live sessions to make them available online, and any associated handouts for an assignment, set due dates, attach files and write a description for assignments to provide students guidance, record any live sessions and make those recordings available or use methods that allow students to reach the instructor by phone and email, not just by video chat, Use of Headsets to eliminate audio feedback loops, background noises, and other disruptions

b. The availability of Basic Student's needs of such as to access readings and course materials, and a way to submit assignments and receive feedback on their work, the way to answer the tests, (quizzes, … etc.) the way of communicate, collaborate and present (BB announcement tool that allow instruction delivered to students in what to do, how to do, and when and how the instructor will respond.

c. Using the platform students' were ready to use the BB technology. Students didn't show hesitation to use the platform with several possible reasons. The fundamental reason may be a pragmatic one related to the fact that Instructor and students already familiar with BB and most of the course material had been already available on BB, also updated virtual workshops reached by all through the university site.

d. Covid19 means quarantine and no more face to face lectures and attending classes.

e. The instructor chose BB rather than Team as the material of the course, such as (syllables, PP slides, and examples) were already on BB.

In this study, a short literature review of recently published is presented in section II while the objectives of the study are expounded, in section III. The study method, and hypotheses, and the model is given in section IV, analytical investigation taking in to account the (the study population) who are actively involved in the course submitted through BB. The analyses, hypotheses, and results are covered in sections V while conclusions are provided in section VI.

II. Recent Previous Study

During the period of Covid19 all educational institutions: Schools, Colleges and Universities shifted their educational programs and courses completely for different E- learning management systems. With such rapid growth and adoption in the use of these systems, it is important to understand how these technologies were being used and how they impact on users. Many studies were handling these systems from Designing or Comparing or Dealing or Developing with users' perspectives …… the One of these adopted systems is Blackboard, Ref. [1] studied the challenges, the application of the learning platform and the development of its material which was considered a positive experience for the instructor and well received by the students. The evidence showed that lecturers are using Blackboard in different ways for different reasons. The tool was used for enhancement purposes, but not at an advanced level that requires a transformation of teaching and learning methods and tasks as stated in [2].

To answer the question concerned how effective is this Blackboard system. Ref. [3]) explored, how blackboard is designed as suitable learning models in terms of learner cognitive engagement and constructivist perspective, resulting in the effective Blackboard system.

Identifying the obstacles facing faculty member in using Blackboard as a blended learning system Ref. [4] recognized the perceptions of faculty members who involved in e-learning programs and trained to use the blackboard in Education. The main obstacles found were: Lack of needed training and experience in using ICT (Information & Communication

Technology) – lack of internet signal that interrupts continuous connection and smooth communication and lack of encouragement and restricted rules that oblige faculty members to develop their technological skills, the experience in using ICT especially in producing electronic materials. Ref. [5] concluded after achieving the best fit and hence, the success of e learning systems is determined by a set of determinants, mainly individual, institutional, and environmental determinants. Exploring the characteristics, habits and learning motivation of successful students learning in a higher education institution that applies an Open and Distance Learning system, the institution could plan the best strategy to increase the student persistence rate in this system as stated in [6].

Implementing TAM and Other Models used for the adoption of ICT, and the results based on the extended TAM, Ref. [7] in their study, Showed that the learners' intention to return to the electronic learning environment was highly associated with their attitude towards the electronic learning tool and the affection associated with the tool.

In the study to uncover factors influencing faculty members' acceptance of LMS Ref. [8] showed that personal factors such as motivation, load anxiety, and organizational support play important roles in the perception of the usefulness of LMS among IT faculty members. The Overall of the study show that LMS is used essentially as an administrative tool rather than a teaching or learning tool. Ref. [9] Explored Students' acceptance of e-learning platforms in the private universities of Bangladesh by applying the Technology Acceptance Model (TAM), and employing Partial Least Squares Structural Equation modeling (PLS-SEM) tool to analyze data.

Studies Concerning Designing and Developing Software, Ref. [10] developed and validated a MOOC engagement scale (MES) to measure learner engagements a contribution to a better understanding of the complexity of conceptualizing and measuring learner engagement in Massive Open Online Courses (MOOCs). Ref. [11] developed an adaptive e-Learning Software to enable the learner answer questions or solve problems based on his/her ability.

III. Study Objectives

The study covers the following main objectives:

1. Investigate the factors that helped and Leeds to fulfilling the requirements of the students enrolled in the database management system course during Covid19 pandemic period.
2. Highlights the BB tools and features directly impacted Students achievements and Benefits.
3. Identify and Investigate the Students' involvement factors; (Access, attendance, experience communication, Collaboration, and Flexible reaction of the students) that accomplished students' performance, achievements, and gained benefits.
4. Confirm the coverage of the three levels of learning (receive, learn, and apply) while the Implementation and application of BB tools in the coverage of the course given materials?

IV. Study Method, Model, and Hypotheses

The purpose of this study is to investigate issues or factors that led to the positive fulfillment of course requirements by B.Sc. Students through the extensive implementation of BB platform in the delivering of Data Base Management system course over the period of 5 months (Whole Semester). The issues or factors were (Students involvements; Access, attendance, experience, communication, Collaboration, and Flexible reaction of the students), in which some have been studied and reported upon by several authors as stated in [12].

The study was conducted between February and July 2020 and the coverage is based on factors to incorporate, depict the above Involvements in fulfilling's course requirements which lead to a positive benefits through the learning Management System, Figure1 below demonstrate the different factors. These were used to study and investigate the effect and the relationships which, consequently, resolve the study objectives. The Figure contains two main sections. The first section is the factors (independent variables): (Students involvements; attendance, Access, experience, communication, Collaboration, and Flexible reaction of the students) that lead to the course fulfillment requirements and benefits. Second is the achieved

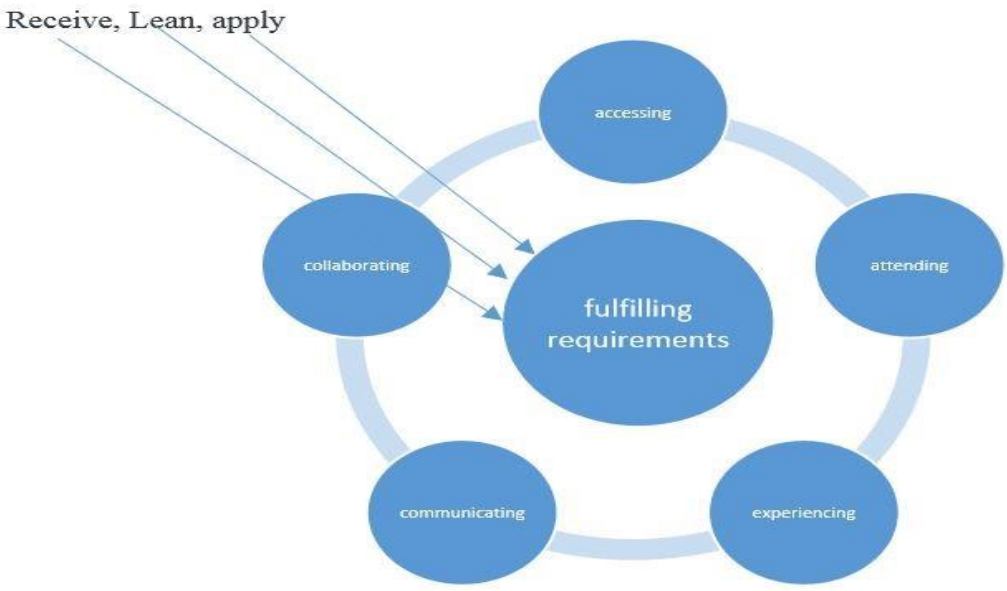
(dependent variables): (Receive, Learn, and Apply) which was achieved while covering course materials.

In accordance with the objectives discussed above, the purpose of investigating the above factors, and the Instructor actual experience, this study tested the following hypotheses to be analyzed and confirmed.

H1: The less attendance to the live lecture by students, will significantly decrease their test and assignments performance. (There is a significant relation between students' attendance of live lectures and the fulfillment of the requirements)

H2: Working individually has a positive impact on grades

H3: Time has a significant impact on grades in an online exam on BB



The Students' involvements, factors and the benefits of using the BB platform

V. Analyses and Results

Data was collected over a period of five months of the second semester of the year2020 from the students registered for a course on Database management system offered in the Year 2, semester 2 of the Bachelors of Information Systems Program at the University of Bahrain. The total number of students enrolled on the course was (76 students).

The course was delivered using Blackboard, which was implemented for all elements of teaching, including provision of teaching materials and

communication with students. It was also used by the students to submit all (apart from the final test) elements, and the requirements of the course assessment (assignments, quizzes, projects, lab tests and exercises).

The materials for students were grouped in topics as per lecture delivered under the BB feature (contents). Each lecture Material included PowerPoint Presentation (Life then recorded at the time of the lecture), examples with solutions, and in the majority of topics extra material was provided, such as video clips from software on performance or behavior of database materials (video Clips for more explanations of the lecture on certain subjects). Access to the course' material was monitored as a list in the content and in the uploaded syllables sheet while constantly updated and improved. The announcements are one of the fundamental uses of the platform in which the instructor communicate with the students regarding assigning dates of the tests, assignments, and presentations, due dates for the submission of required assignments course, reminding of the important events.

It's really important for the instructor the students' attendance of live lectures and the attendance was taken usually at the already fixed time, according to the time table delivered to the students and lecturers by the registration office and uploaded through BB within the course syllabus form. Table 1 illustrates the Topics covered and those practiced in the laboratory classes, denoted by a ''Lab Activities'' and Assignments of both (Table 1).

At the beginning some Students were not always attending the live lecture given by the instructor as it was scheduled, but the percentage of them steadily increased from 34.8% to. 87.0% through the semester (table 1a). However, there was a few of students, who didn't attend the live lectures and only 0.38% were dropping from the course. The consideration of recording all lectures to enable students listen to on their own time, also the set up periodic live sessions throughout the week when students can join for virtual office hours to ask questions and get further guidance and support.

Closely associated with issue of access was the perception that using Blackboard saved students some time regarding less need for travel to university and minimized the need for face-to-face contact. The ease of access helped students to meet deadlines and be more time efficient.

No difficulty from the students while accessing the course through BB, this is attributed to students' prior experience, because they already have entered

workshops of how to use, and how to deal with its' tools, at the same time as soon as the decision was taken to transfer to online teaching, the IT center upload more advanced training workshops to the students as well as to faculty members. Another Justification to the access of the BB is the students are from Information systems background.

Subject-Specific covered Lectures / Lab timing

Course Weekly Breakdown					
Week	**Date**	**Topics Covered**	**Lectures/Lab Timing & CILO(s)**	**Lab Activities**	**Assessment**
1	**11/2**	**Introduction to the Course Ch. 1 Introduction to DBs Introduction, Traditional File-Based Systems**	**UH: 8:00 – 8:50 1,5**		
2	**16/2**	**Ch. 1 (Cont.) DB Approach, Advantages & Disadvantages of DBMSs**	**T: 12:00 – 13:40 1,5**	**SQL**	
3	**23/2**	**Ch. 2 Database Environment The Three-Level ANSI-SPARC Architecture, DB Languages**	**1,5**	**SQL**	
4	**1/3**	**Ch. 2 (Cont.) Data Models and Conceptual Modeling, Functions of a DBMS**	**1,5**	**SQL**	**Assignment 1**
5	**8/3**	**Ch. 4 The Relational Model Terminology, Integrity Constraints, Views**	**2,5**	**SQL Lab Assign 1**	
6	**15/3**	**Ch. 12 Entity-Relationship Modeling Entity Types, Relationship Types, Attributes, Strong and Weak Entity Types,**	**2,5**	**SQL**	

		Attributes on Relationships			
7	22/3	Ch. 12 (Cont.) Structural Constraints, Problems with ER Models	3,5	SQL	Assignment 2
8	29/3	Ch. 13 Enhanced Entity-Relationship Modeling Specialization/Generalization	3,5	SQL Lab Assign 2	
9	5/4	Students' Midterm Break			
10	12/4	Ch. 13 (Cont.) Aggregation, Composition	3,5	SQL	
11	19/4	Ch. 14 Normalization The purpose of Normalization, How Normalization Supports DB Design, Data Redundancy and Update Anomalies	3,5	SQL	
12	26/4	Ch. 14 (Cont.) Functional Dependencies	4,5	SQL	
13	4/5	Ch. 14 (Cont.) The process of Normalization (1NF, 2NF, and 3NF)	4,5	SQL Lab Assign 3	
14	10/5	Ch. 3 Database Architectures and the Web • Web Services and Service-Oriented Architectures • Distributed DBMSs Cloud Computing	1, 5	SQL	Assignment 3
15	17/5	Ch. 3 (Cont.)	1, 5	SQL	
16	24/5	Revision and Students' Presentations			

Increasing attendance Percentage

Period	Percent %	Percentage % of withdrawal from the course
Week 1,2,3	34,8	0.38%
Week,4,5	43.5	
Week 6,7	52.2	
Week 8,9	52.2	
Week 10,11	65.7	
Week 12,13	87.0	
Week 14,15	87.0	

It is not difficult to see the relation between attendance of the students, and their Accomplishments of the requirements, (see table2). This supported H1 hypotheses and yes, there is a relationship between attendance and accomplishing the requirements

There is a relation between attendance and the accomplished requirements

HO: There is significant relation between attending of live sessions and fulfilling course requirements

H1: There is no significant relation between, attending of life sessions and fulfilling course requirements

F-Test Two-Sample for variances

	# of Students	Total
Mean	12.5	23.08333333
Variance	13.1	12.64166667
Observations	6	6
df	5	5
F	1.036255768	
P(F<=f) one-tail	0.484888945	
F Critical one-tail	5.050329058	

Since F < F critical one-tail, accept HO

The blackboard grading system is linked to the student record system or the academic student administration system, which is linked to the database of Blackboard, this creates no trouble or requires a time consuming actions in

the entering of marks as it is automatic and registering students into the platform. It is done, by platform administrators on the basis of automatic synchronization of Blackboard with the student administration system is a vital obstruction.

The platform was not only to help in the course administration, but also helped to improve the communication with the students.

Communications was one of the factors of the instructor's motivation in administration of the course proved a success and never constitutes problem since it was limited to interactions related to groups' assessments within the course, delivering live lectures and, the virtual office hours for guidance and support.

The idea of discussion forums and team work practiced and liked by the instructor since it helped brainstorm, collaboration and assistance also helped if students did not understand something they could seek answers from their instructor and peers. Although Discussion forums was available students also have exchanged ideas and opinions among themselves using Blackboard mail and other media such as WhatsApp. As Project-based learning in the database area, mainly empower skills related to a global understanding of database design and other advanced database topics as stated in [13] and, as a practice in development a real world Database, hence the application of collaborative learning technique helped students practice the steps of the development of a real world DB, encouraged the integration of different teamwork abilities, and the effective implementation of the three educational levels.

The collaborative learning technique was implemented to assess teams after developing their database project, which was selected from a list of titles delivered at the beginning of the course and the groups were formulated while having virtual office hours.

The teams were composed of three to four students. Having a lower number of students per team was not rejected, although it's implied many teams per section since few students who were late to fit themselves with others, and having more students per team was rejected since, it would increase the chance that some students would not work enough. Furthermore, the composition of teams was decided to be elective generated, establishing constraints to avoid having conflicts or nonconformity and mismatch in

moods, experience, and personality in the same team. Through the Blackboard Collaborative Ultra feature each group allowed to enter as a presenter and share their projects, as it was essential to increase the students' participation during the electronic learning implementation process.

Databases and their applications are courses in which theory and practice must be combined

1. Understanding the SQL structure and the ability to build SQL queries are considered integral in database learning as stated in [14],[15] and has become a major focus in course materials and activities. The developed projects by the students, covered in general:

a) Introduction, Background, Problem Description, Data Collection (if any), User Requirements, Entities and Relationships and their Types, Keys, All Diagrams including ER and EER, Connection traps, Normalization up to 3NF, Creation of Tables, SQL, References.

b) Development of at least 15 different queries (The queries would show the followings: The use of natural language to describe what each SQL query does. The 15 queries include an assortment of SQL commands learnt from the lab.(Multiple table join; Use sub-queries; Group data using GROUP BY; Sort query results using ORDER BY; IN or NOT IN; LIKE; Views; Aggregate functions or calculated fields).

The collaborative learning technique applied in the lab exercises is an adaptation of the Structured-Problem-Solving technique. (See the included in Table5 aims to assess the students' knowledge level in relational database design) that are based on the same database schema. Students solve the exercises jointly with their teammates. The assigned time depends on the complexity, but mostly during lab time, which is an hour and a half. Instructor answer questions and gives feedback to students during this part of the activity. Assignments delivered were also aimed to make evident that content explained in theory/exercises, lectures is close to that provided in laboratory practices. Figure2 a & b are examples of exercises given to the students.

Staff

St_No	St_Name	DOB	Salary	Br_No
0123	Ahmed Jassim	12 Jan 1979	2500	B001
0124	Ali Anwar	25 Jun 1988	1800	B011
	Mariam Hasan	17 Apr 1991	800	B099

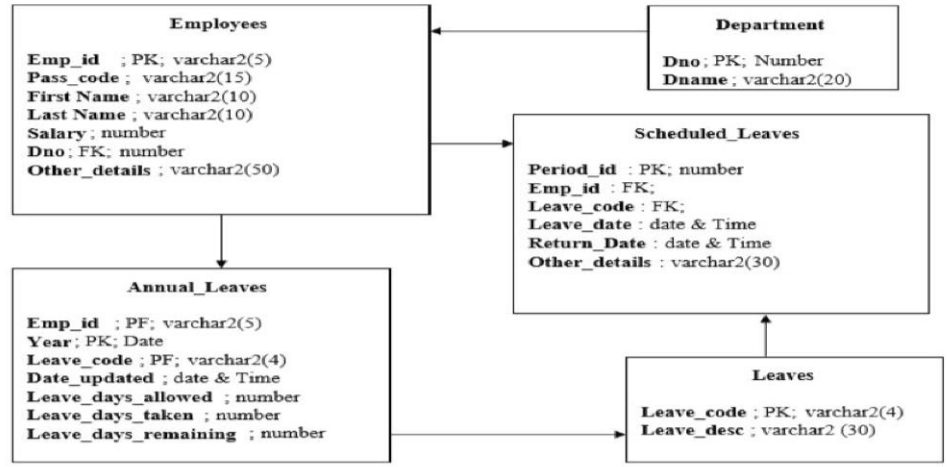
Branch

Br_No	Br_Address
B001	Manama
B011	Adleya, P.O Box 135
B012	Muharraq, P.O.Box 456

(a) List the three problems that exist.
(b) Convert each relation into its relational schema representation.
(c) Give *one example* of views that can be derived from **Staff** relation.

(Example 1) questions on relational DB

Data Model for Annual Leaves DB:



Complete the Following Using the above Model

1. Create the Scheduled_Leaves table
   a. Period_id is the primary key
   b. Emp_id is foreign key from table employees, and leave_code is another foreign key from table leaves.
   c. Default value for (other details) is "Not Available"
2. Insert the following into the Annual_Leaves table

emp_id	Year	leave_code	Date_updated	leave_days_allowed	leave_days_taken	leave_days_remaining
E113	2011	LC115	8- OCT-2010	30	2	28

3. Display employee id , leave date, and return date for employees who had leaves taken on July 2010 in descending order of return date
4. List all leaves description that starts by "M" letter. (e.g. Marriage)
5. How many employees did not finish their leave credit in 2010

(Example 2) Annual Leaves DB

In terms of assessments, the test feature of Blackboard That automatically corrected and delivered to the students, was implemented to ensure students reviewed their grades and instructor comments. Such online assessment activities were perceived to enhance the overall learning experience and a replacement to traditional assessment formats. The Assignments and Lab quizzes delivered to the students, had to be solved individually to ensure equality and avoid reliability on others and to examine individual capability. Those with a form of a (T/F& M/C) a database of questions was formulated in a form of pools from each pool each student select one question, the second question from the second pool and so on (question after the other). Each question should be answered and not all questions answered at one time at the same time no way of returning back to the answered question. The grades obtained were not very promising, but it was considered that this was due to practicing the individual learning techniques used for each Lab quiz and the assignments while the Collaborative learning technique implemented on the Project development and the grades were promising. Table3 below indicates that assignments and lab quizzes when done individually didn't end with a better performance, and is therefore hypotheses 2 was rejected.

Working individually in completion of required tests lead to better grades

HO: Working individually has a positive impact on grades
H1: Working individually has a negative impact on grades
F-Test Two-Sample for Variances

	LabQ1	Ass3
Mean	**2.456349**	**2.77381**
Variance	**0.63168**	**0.249405**
Observations	**21**	**21**
df	**20**	**20**
F	**2.53275**	
P(F<=f) one-tail	**0.021827**	
F Critical one-tail	**2.124155**	

Since F > F critical one-tail, we reject HO

Also the instructor, practiced the timing setting enforcement on the tests and other assignments. The fixed time of the required duties, for instance a

quiz to be solved within 10 minutes supported the third hypotheses H3 which tell that the time provided to the students to perform tests has an impact on the grades Table4

Timing Facility feature has an impact on the test results

HO: Time has a significant impact on grades in an online exam on BB
H1: Time has no significant impact on grades in an online exam on BB
F-Test Two-Sample for Variances

	Marks10%	Time
Mean	**8.277778**	**10.735**
Variance	**0.918301**	**13.14665**
Observations	**18**	**18**
df	**17**	**17**
F	**0.069851**	
P(F<=f) one-tail	**6.72E-07**	
F Critical one-tail	**0.440162**	

Since F < F critical one-tail, we accept HO

VI. Conclusion

This study identified and experienced various factors that contribute to the implementation of BB features in teaching BSc students at the University of Bahrain which ended to a successful fulfillment of the course requirements during covid19 pandemic. The analysis revealed that the above factors influenced and affected in the fulfillment of the requirements of the course which directly correlated to the actual involvements by the students and instructor. Meanwhile, the three controlled variables, receive, learn, and apply, had an indirect effect. The results also showed that, Students involvements in all required activities were high and led to the Benefit from the course, and pass the success criteria. Therefore, it is concluded that these students had experienced the three levels of education receive, learn, and apply while Most BB facility features and tools were implemented to help delivering well organized DB course requirements. Methods for assessing students that automatically corrects and gives feedback were available

through the feature (Blackboard collaborative ultra) which was a good support and benefits for both instructor and students. The three hypotheses tested the effect and relationship between students' attendance, grading performance, and individual / collaborative contributions of the students, two were accepted and one rejected.

It is recommend instructors implement all BB supportive features which lead to more complex interactive learning experience not only audio, video interaction but a simulation, scenario based questions. Implementing virtual reality and AI is another option to enable tracking progress, attendance….etc.

References

1. Uziak, J. et al. (2018). Students' and Instructor's Perspective on the use of the Blackboard Platform for Delivering an Engineering Course. The Electronic Journal of e-Learning, 16 (1), 1-15, available online at www.ejel.org.

2. Nkonki, V. & Ntlabathi, S. (2016). The forms and functions of teaching and learning innovations on blackboard: substantial or superficial? The Electronic Journal of e-Learning, 14 (4), 258-265.

3. Alokluk, J. (2018). The Effectiveness of Blackboard System, Uses and Limitations in Information Management. Intelligent Information Management, 10, 133-149, http://www.scirp.org/journal/iim ISSN Online: 2160-5920 ISSN Print: 2160-5912 10, 133-149. https://doi.org/10.4236/iim.2018.106012.

4. Zaki, H. A. & El Zawaidy, H. (2014). Using Blackboard in online learning at Saudi universities: Faculty member's perceptions and existing obstacles. The International Journal of Interdisciplinary Educational Studies, 3 (7), 141-150.

5. Romi, I. (2017). A model for E-Learning system's success: Systems, Determinants, and Performance. International Journal of Emerging Technologies in learning (I JET), 12 (10) .

6. Puspitasari, K. & Oetoyo, B. Successful Students in an Open and Distance Learning System. (2018). Turkish Online Journal of Distance Education (TOJDE), April 2018 ISSN 1302-6488. 19 (2), Article 13.

7. Honglei Li & Jiuhong Yu. (2020). Learners' continuance participation intention of collaborative group project in virtual learning environment: an extended TAM

perspective. Journal of Data, Information and Management. 2:39–53. https://doi.org/10.1007/s42488-019-00017-8.

8. Bousbahi, F. & Alrazgan, M. (2015) Investigating IT Faculty Resistance to Learning Management System Adoption Using Latent Variables in an Acceptance Technology Model, The Scientific World Journal, Volume 2015, Article ID 375651, 11 pages http://dx.doi.org/10.1155/2015/375651.

9. Amin, K. (2016). Applying TAM to understand Students' Behavioral Intention to use the E - learning System: An Empirical Evidence from Bangladesh. International Conference on Business and Economics Reinventing Business for the 21st Century" Venue: University of Dhaka, Date: October 25-26, 2016 Conference Session -14. Paper No-1.

10. Deng, R., Benckendorff, P., & Gannaway, D. (2020) Learner engagement in MOOCs: Scale development and validation. British Journal of Educational Technology, 51(1), 245-262. https://doi.org/10.1111/bjet.12810.

11. Ekwonwune, E. & Edebatu, D. (2019). Design and Implementation of an Online Course Management System. Journal of Software Engineering and Applications, 12, 21-33. http://www.scirp.org/journal/jsea ISSN Online: 1945-3124 ISSN Print: 1945-3116.

12. Alshammari, M, & Rosli, M (2016). The Influence of Technical Support, Self-Efficacy and Instructional Design on the Usage and Acceptance of LMS: A Comprehensive Review. Turkish Online Journal of Educational Technology (TOJDE), 15(2), 116-125.

13. MARTI´N, C. et al. (2013). Improving Learning in a Database Course using Collaborative Learning Techniques. International Journal of Engineering Education, 29(4), 1–12.

14. HAMZAH, M, et al. (2019). A review of increasing teaching and learning database subjects in computer science. Revista ESPACIOS, 40 (26), 6-12.

15. Podeschi, RJ. (2016). Building I.S. Professionals through a Real World Client Project in a Database Application Development Course. Information Systems Education Journal (ISEDJ), 14 (6), 34-40.

16. Dominquez, C. & Jaime, A. (2010). Database design learning: a project-based approach organized through a course management system. Computers and education, 55(3), 1312-1320 .

Authors

Dr. Amera H. Abdulrazzaq (associate Prof. at University of Bahrain) Published more than 35 papers in international and national Journals and conferences in Arabic and English Languages. Published a book (Storing and retrieving Arabic Texts) Translate a Book from English to Arabic (Managing Online Reference Services). Main research interests are Information Studies, Information management, Information retrieval, learning management systems, smart cities and Auditing information. Member of the IEEE, Society of Excellence & Academic Research (SEAR), And chair and reviewer to international Conferences and Journals. ahaqqi@uob.edu.bh

The Iraqi Journal for Information and Documentation Studies

ISSN(P): 2663-6611
ISSN(E): 2708-7220

Vol. (4) **Issue (1)** **November (2021)**

Simi-Annual Scientific Journal
Published by:
The Iraqi Association for Information, Libraries and Documentation Specialists

THE IRAQI JOURNAL FOR INFORMATION AND DOCUMENTATION STUDIES

ISSN (P): 2663-6611
ISSN (E): 2708-7220

Vol. (4) **NO. (1)** **November (2021)**

Semi - Annual Scientific Journal
Published by:
The Iraqi Association for Information, Libraries and Documentation Specialists
National Library Deposit Number (NLDN/2336-2018)
Email: ildps.iraq@gmail.com