

# **Effectively Using of Learning Management System (LMS): The State of the Arts. Literature Review, Case Study, and Results**

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*The goal is to identify the impact of effectively using the Learning Management System (LMS) in Community College of Qatar (CCQ) case the Blackboard system with the impact of its using on teaching and learning for both educators and students .To reach the research goal, we are identify and update the impact roles of the LMS. Although it is that the LMS implementations have been examined over the past twenty years, the emergence of Next-Generation Digital Learning Environments (NGDLEs) demonstrates to forward-thinking teachers should revisit the impact that LMS have had on learning The educators need to develop Measurable NGDLEs goals, in order to evaluate the educational effectiveness of NGDLEs and LMS. Finally, based on analysis of Blackboard Results, training needs are done.*

## **INTRODUCTION**

Seite, the Ministry of Education and Higher Education in the State of Qatar established the (CCQ). The CCQ, in collaboration with Houston Community College, opened its doors for the first time in September 2010 with an enrolment of 308 full-time students at the West Bay Campus. The high management and faculty members of all departments meet to discuss the courses and share ideas about the digital learning environment. At the beginning CCQ uses a standard set of tools for registration, class rosters, grades, and other administrative tasks, but later on the dean office decided with individual faculty have broad latitude to select the applications and services they believe best enable teaching and learning, provided that they comply with next generation digital learning environment (NGDLE) standards. Adherence to these requirements also allows faculty and students to add to their learning environment both for content and applications and make adjustments based on learning analytics.

Regarding to increasing the number of students at CCQ and the department, this case for thinking about Learning Management System such as Blackboard. After High management at CCQ brought the system then effectively using of the Bb by all instructors with investigate all other educational technological tools is the challenges.

Some instructors with good experience on technology or using the Bb before shows the other instructors a new application she plans to use in her course.

Other instructors show a similar tool such as MS Excel they use to finalize grades of students before using full grade centre or Banner system. All of these applications, as well as those that other faculty have used for years, can exchange data with one another and with the administrative systems. They also interact with the Community's analytics tools, which provide real-time status about student progress.

After Blackboard system is come to CCQ they began working on these a year ago, and they have made considerable progress, aided by the fact that the university's digital learning environment is not tethered to conventional academic terms and credit hours. They have been able to assemble learning objectives, activities, and assessments that reflect their goals for the courses.

2016 starts CCQ thinking really about effectively using of LMS to be applicable on all courses, hence starts to create idea of Blackboard criteria, but August 2017 established the Teaching and Learning Centre (TLC) at CCQ. One of important goals of TLC is finalizing and creating Blackboard criteria so that monitoring using of Bb by all faculty members and student to enhance their teaching and learning. The NGDLE requirements support all of this integration and interoperability, allowing instructors and students to focus on learning.

The central research questions addressed in this work are "What strategic steps and concrete actions can administrators or technological response department take to better ensure that whatever LMS solution they invest in will be as fully integrated and as fully utilized by both faculty and students as possible?"

As it is appeared in all previous generation the using technology in education, become more and more. However, it is cleared from many research studies that bring the technology in any educational organization to investigate its goals really not enough. It has to be used effectively. Also by Learning Management System, it is clear that trained educators only or push the students to use such this system or guide them by manual user only not enough too. Effectively using of Learning Management System have to be by both student and educators with same level and interesting of expertise. For achieving such goals with state-of-the-art technologies and facilities, the TLC provides faculty, staff, and students with various services and training to enable them to enrich their knowledge and utilize the use of the current and emerging technologies.

In addition, the TLC manages the instructional design processes and administers its Course Management System (CMS), facilitating technology-rich teaching and learning through collaborative curricular innovation, including new course development, faculty training/support, and service reliability and consistency. [2]

From this point of view, the mission of the (TLC) is trying to support all CCQ academic staff with ongoing professional development programs and resources that meet faculty needs for high-quality education and research. TLC aims at facilitating and supporting faculty research endeavors and the implementation of best teaching practices in a collaborative working environment through workshops and seminars on curriculum enhancement and innovations.

The (TLC) at (CCQ) is a strong advocate of the potential for Next-Generation Digital Learning Environments (NGDLEs) to enhance the teaching and learning process and is committed to investigating, implementing and disseminating practitioner-oriented guidance for utilizing NGDLEs effectively in all CCQ classrooms at all levels and standards. [2]

For giving a particular value to the research our case study and search is about the (CCQ). As part of a substantial national investment in human development and in partial fulfillment of the educational goals articulated in the Qatar National Vision 2030, the Ministry of Education and Higher Education in the State of Qatar established the (CCQ). The CCQ, in collaboration with Houston Community College, opened its doors for the first time in September 2010 with an enrollment of 308 full-time students at the West Bay Campus. Ever since the college has seen an increase in enrollment every semester. Today, CCQ is the fastest growing institution in Qatar with an enrollment of 5000 students at five different campuses. [1]

## METHODOLOGY

The literature review research focuses on research fields in terms of certain conditions. This decreases the number of results, avoids duplication and leads the search towards a specific type of literatures according to special rules of the research. The criteria for literature and research selection are:

(1) Selecting the data from our full time and adjunct faculty, (2) limitation on frame-time of literatures based on calendar year study (one year), and (3) limitation on selection literatures, which will be, reviewed according to our CCQ educational Community.

The first step of the literature selection processes is to provide a list of possible and familiar online technological educational tools or platforms, which are relevant to LMS such as Blackboard educational platform. Then classified the faculty member into two groups regarding to their roles at the CCQ community (1) As full time faculty member and (2) As a part time faculty member (Adjunct).

The next step of the literature selection process was to define an appropriate period to decrease the amount of data and to provide a new non-studied period. Based on calendar year study it is provided as limitation on frame-time of literatures based on year and terms (3 terms per year) based on CCQ polices role of academic year study.

The period between periods of 2017 –September and 2018 -November is considered an appropriate period for the research and study.

Determined the LMS How-know and knowledge of all faculty members (full time & Adjunct) Based on online and offline surveys which are sent to all of them regarding to their knowledge and using of LMS effectively. Based on results of these surveys on three different levels knowledge (beginner, intermediate, and advanced or professional) all faculty member are divided.

A specific intensive training program are released to train and support all faculties and students in effectively using an instructional technology platform that has the potential to greatly enhance student learning and engagement in the classroom. In addition, the (TLC)& IT department supports the implementation and evaluation efforts of the Blackboard Learn Management System at the CCQ by providing training and support to Blackboard users, establishing usage criteria, and evaluating Blackboard usage by faculty and students at the end of every term.

## RESULTS

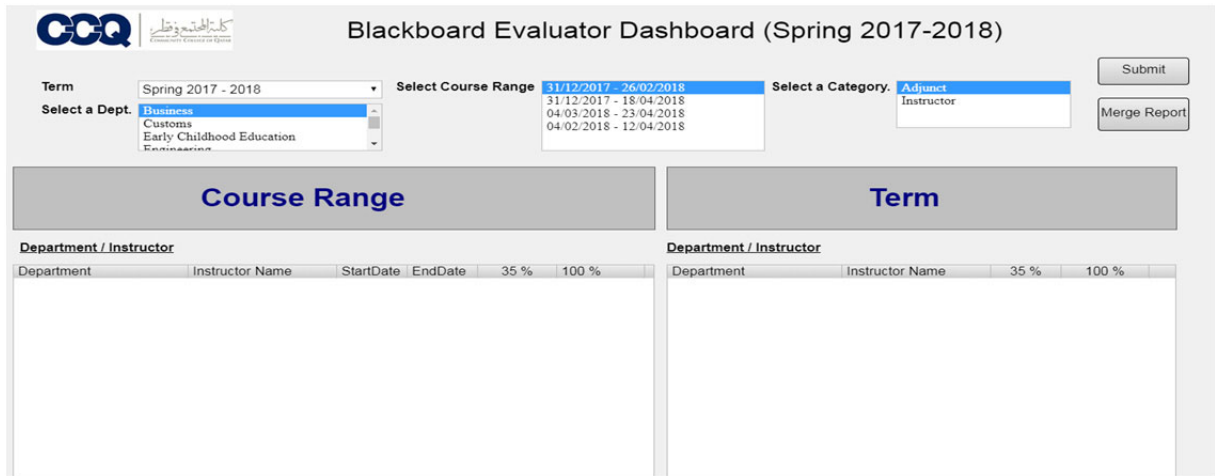
To make sure that our results are clear with high level of authority and transparency a software application is programed and used with simple effectively Main Graphical User Interfaces (MGUI) with more specifics options such as (Terms, Departments, Course ranges, Categories as full time or adjunct or head of department).

**FIGURE 1**  
**GRAPHICAL USER INTERFACE (GUI) OFBLACKBOARD EVALUATION DASHBOARD**  
**(SUMMER 2017 - 2018)**

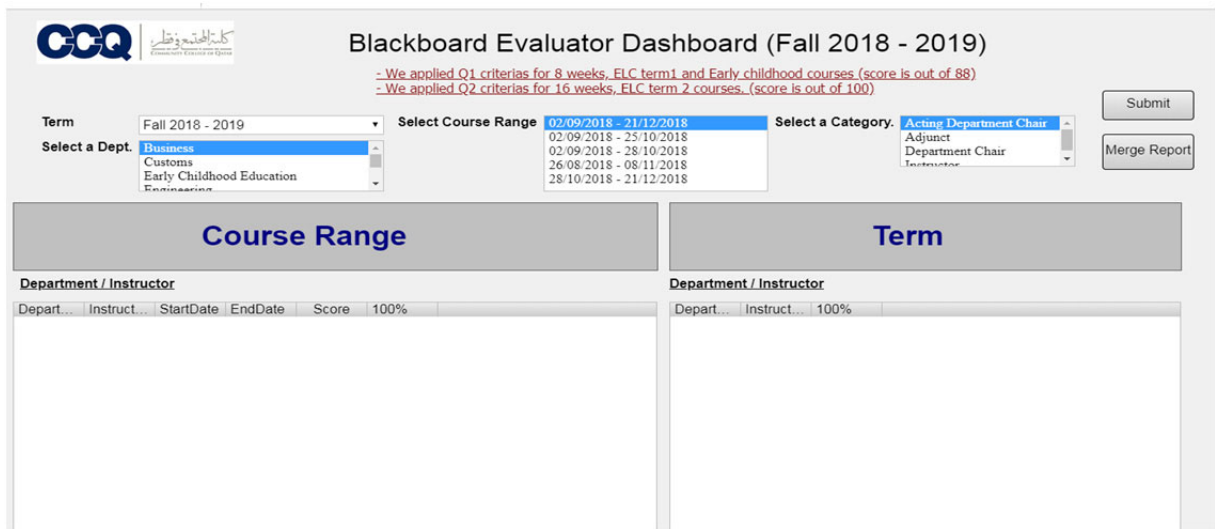
The screenshot displays the Blackboard Evaluator Dashboard for Summer 2017-2018. At the top, there are filters for Term (Summer 2017 - 2018), Select Course Range (06/05/2018 - 04/07/2018 and 15/04/2018 - 04/07/2018), and Select a Category (Adjunct and Instructor). Below these filters are two data tables. The left table is titled 'Course Range' and the right table is titled 'Term'. Both tables have columns for Department / Instructor, Department, Instructor Name, StartDate, EndDate, 80 %, and 100 %.

Course Range		Term	
Department / Instructor		Department / Instructor	
Department	Instructor Name	Department	Instructor Name
	StartDate		StartDate
	EndDate		EndDate
	80 %		80 %
	100 %		100 %

**FIGURE 2**  
**GRAPHICAL USER INTERFACE (GUI) OF BLACKBOARD EVALUATION DASHBOARD**  
**(SPRING 2017 - 2018)**



**FIGURE 3**  
**GRAPHICAL USER INTERFACE (GUI) OF BLACKBOARD EVALUATION DASHBOARD**  
**(FALL 2018 - 2019)**



Moreover, merge reports for every time period is created with possibly to create various type of reports in both formats as excel sheets or CSV format.

**FIGURE 4**  
**DASHBOARD FOR REPORTS IN BOTH FORMATS AS EXCEL SHEETS OR CSV FORMAT**

**Blackboard Evaluator Dashboard (Fall 2018 - 2019)**

- We applied Q1 criterias for 8 weeks, FLC term1 and Early childhood courses (score is out of 88)  
 - We applied Q2 criterias for 16 weeks, FLC term 2 courses. (score is out of 100)

Term: Fall 2018 - 2019 | Select Course Range: 02/09/2018 - 21/12/2018 | Select a Category: Instructor

Select a Dept.: Theatre Arts

Course Range					
Department / Instructor					
Department	Instructor Name	StartDate	EndDate	Score	100%
Theatre Arts	Abdul Karim Allawati	02/09/2018	21/12/2018	100	100
Theatre Arts	Said Ennaji	02/09/2018	21/12/2018	100	100

Term		
Department / Instructor		
Department	Instructor Name	100%
Theatre Arts	Abdul Karim Allawati	100
Theatre Arts	Said Ennaji	100

Buttons: Submit, Merge Report, Filter, Order Columns, Export All to CSV

**Statistical Study and Results of Online/Offline Survey**

What incentives can admins and, in turn, faculty provide to promote interest in and use of an LMS among the faculty and, in turn, the students?

Based on Collecting and analysing data from workshops and training courses such as PD and Blackboard Starting with statistical study and results of survey, which are sent to all faculty to evaluate all training. In addition, collecting needs for all CCQ faculty members (full time & Adjunct) through an online/offline survey to enhance their teaching and learning knowledge and motivation through effectively using of LMS at our educational organization.

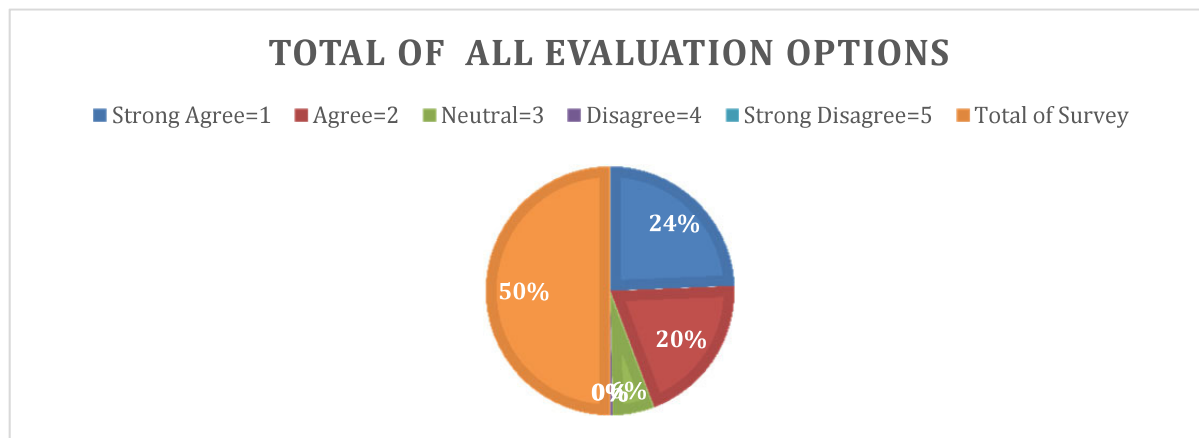
**TABLE 1**  
**EVALUATION SURVEY OF ATTENDEES FOR TRAINING COURSES AND LMS**  
**TRAINING AT TLC 2017/18**

Q.Nr.	Questions	Evaluation Options					Total of Survey
		<i>Strong Agree</i> =1	<i>Agree</i> =2	<i>Neutral</i> =3	<i>Disagree</i> =4	<i>Strong Disagree</i> =5	
1	The objectives of the LMS training were clearly defined	98	72	20	0	0	190
2	Participation and interaction were encouraged	93	84	13	0	0	190
3	The topics covered were relevant to me	99	74	17	0	0	190
4	The content was organized and easy to follow	98	78	14	0	0	190
5	The materials distributed were helpful	90	81	19	0	0	190
6	This training experience will be useful in my work	95	79	16	0	0	190
7	The trainer was knowledgeable about the training topics	96	78	16	0	0	190
8	The trainer was well prepared	106	71	13	0	0	190
9	The training objectives were meet	106	69	15	0	0	190
10	The time allotted for the training was sufficient	79	73	31	7	0	190
11	The meeting room and facilities were adequate and comfortable	66	79	38	7	0	190
<i>Total</i>		1026	838	228	14	0	

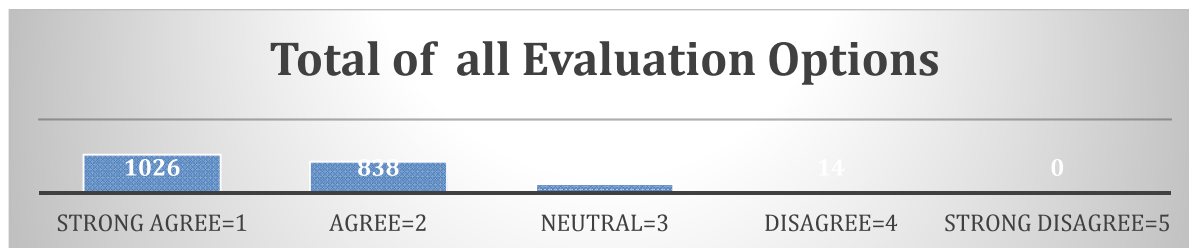
**TABLE 2**  
**TOTAL OF OPTIONS EVALUATION SURVEY OF ATTENDEES FOR TRAINING COURSES LAST TERM**

Q. Nr.	Questions	Evaluation Options					Total of Survey
		Strong Agree=1	Agree=2	Neutral=3	Disagree=4	Strong Disagree=5	
Total of all options		1026	838	228	14	0	2106

**FIGURE 5**  
**A PIE CHART PERCENTAGE NUMBERS OF TRAINING COURSES WITH NUMBER OF PARTICIPANTS / ATTENDEES AT TLC**



**FIGURE 6**  
**TOTAL NUMBERS OF EVALUATION SURVEY OPTIONS OF PARTICIPANTS / ATTENDEES AT TLC**



**Further Result:**

Figures 5 and 6 show that there is a relatively small number of participants who shared a concern about the location of training and the timing of training

One of the most important goals that we have worked on in the current and future TLC plans is to ensure that such a concern is eliminated as much as possible by considering this percentage, despite its marginal impact.

Regarding to the problem of location of training is imposed by the Internet connection and Wi-Fi for the equipment in the classroom. It is as a technical failure described. It is under processing with the IT Department to solve it.

The other problem that explains the very small percentage of the objection to the place of training is the request for the existence of courses; some in the Centre in C-Ring and others in the other buildings of the College will respond to this request in a moderate and logical and responded appropriately.

Regarding to the time issue, a questionnaire distributed to the teachers to determine the appropriate timing. The information and effectively data are collected and analysed. Based on the results, the schedule of courses and workshops is developed in a way that meets the desire of all teachers.

### **The Training Courses Academic Year 2017/18**

As it is referred by many cases study and based on results of surveys it is important to provide faculty members with intensive training program about all relevant available technological resources to support CCQ faculty members in integrating/utilizing technology for enhanced teaching and learning. So that this lead to enhance the motivation of educators and students regarding to use the LMS effectively at all level of standards.

#### *Statistical Study of Name of Courses and Number of Courses*

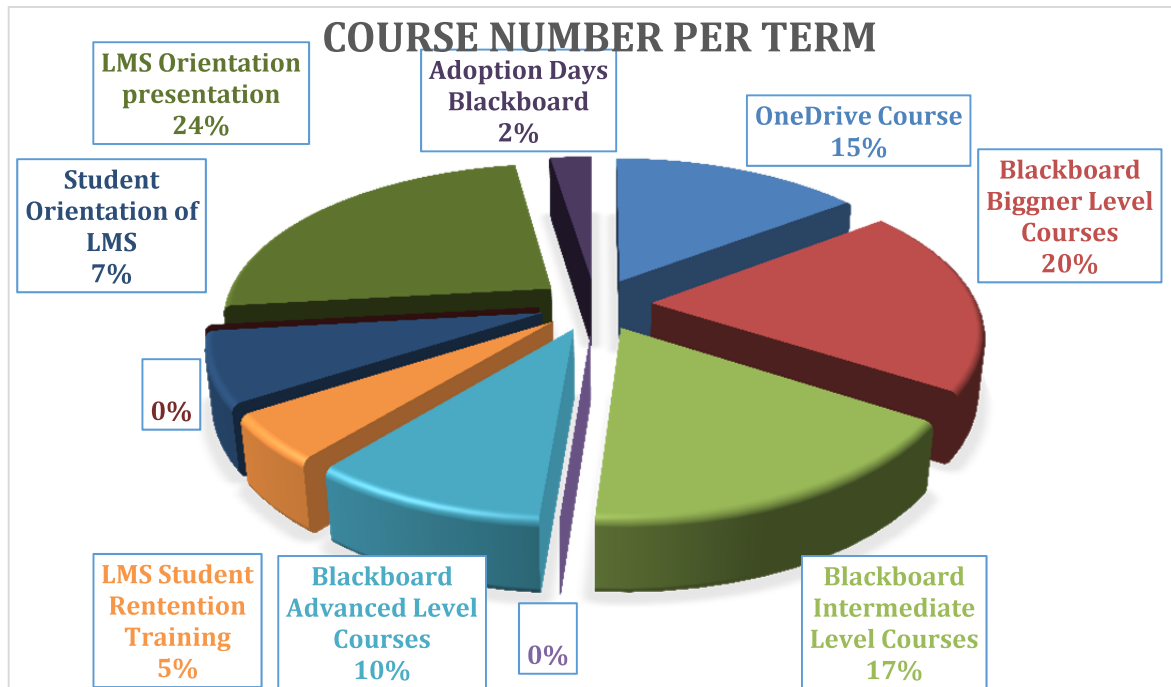
Tables and figures below showed in the present research all results about names and numbers of training courses with number of attendance faculty members

**TABLE 3**  
**NAMES AND NUMBERS OF TRAINING COURSES WITH NUMBER OF PARTICIPANTS**

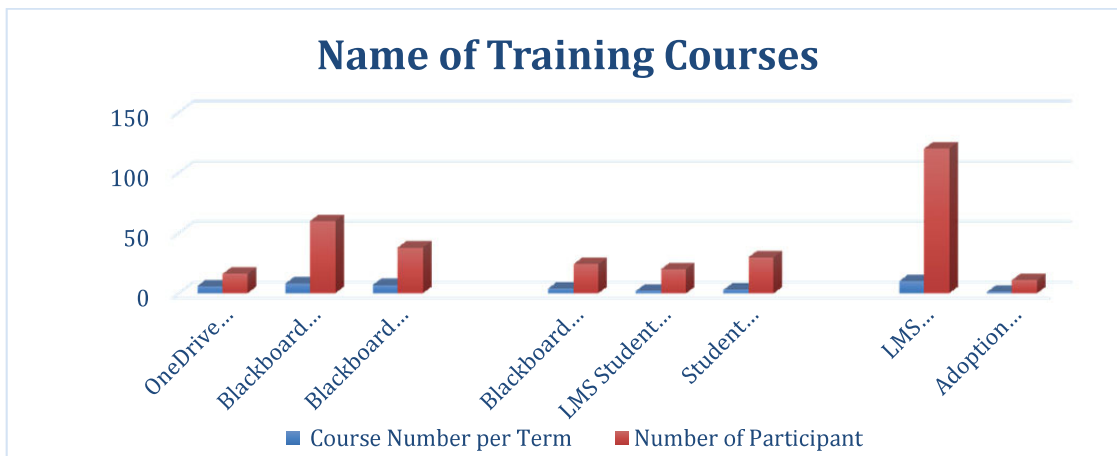
<i>Course Name</i>	<i>Course Number per Term</i>	<i>Number of Participant</i>
<b>OneDrive Course</b>	6	16
<b>Blackboard Beginner Level Courses</b>	8	60
<b>Blackboard Intermediate Level Courses</b>	7	38
<b>Blackboard Advanced Level Courses</b>	4	24
<b>LMS Student Retention Training</b>	2	20
<b>Student Orientation of LMS</b>	3	30
<b>LMS Orientation presentation</b>	10	120
<b>Adoption Days Blackboard</b>	1	11



**FIGURE 7**  
**A PIE CHART SHOWING THE PERCENTAGE OF NAMES AND NUMBERS OF TRAINING COURSES WITH NUMBER OF PARTICIPANTS**



**FIGURE 8**  
**NAMES OF TRAINING COURSES WITH NUMBER OF PARTICIPANTS PER TERM**



★ **Further Result:**

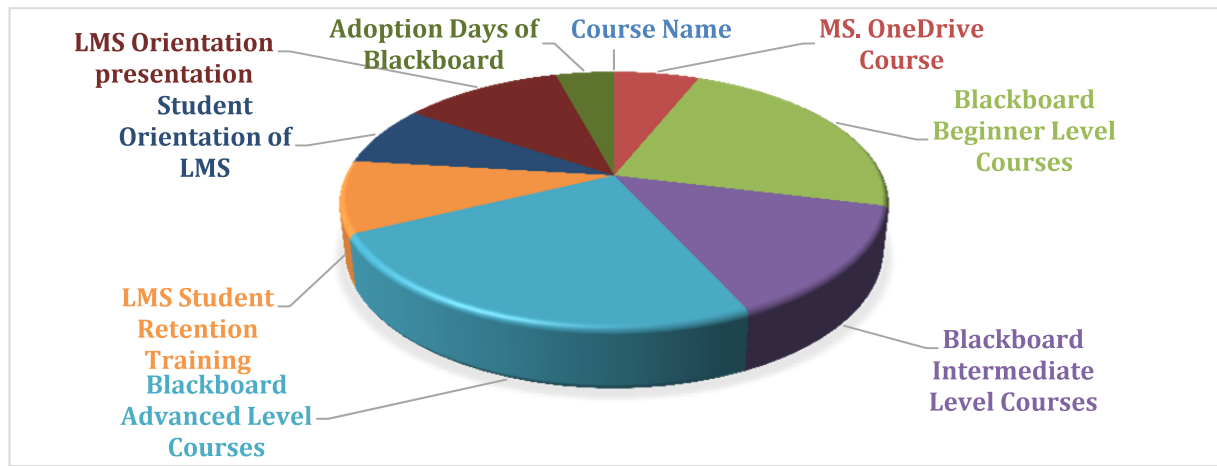
From Table 3 and Figure 7 above: The percentage of training attendance in the TLC varies according to the needs for the course provided. Moreover, there is a demand for training with the request for advanced courses by the trainees.

Name of Training Courses with Number of Attendees

**TABLE 4**  
**NAMES WITH NUMBER OF PARTICIPANTS OF TRAINING COURSES AT TLC AT 2017/18**

Nr.	Course Name	Number of Participant
1	MS. OneDrive Course	16
2	Blackboard Beginner Level Courses	60
3	Blackboard Intermediate Level Courses	38
4	Blackboard Advanced Level Courses	65
5	LMS Student Retention Training	24
6	Student Orientation of LMS	20
7	LMS Orientation presentation	30
10	Adoption Days of Blackboard	11

**FIGURE 9**  
**A PIE CHART SHOWING THE PERCENTAGE OF NUMBERS OF TRAINING COURSES WITH NUMBER OF PARTICIPANTS / ATTENDEES AT TLC**



★ **Further Result:**

As shown in Table 4 and Figure 9, there 10 courses were given by the TLC for a total of 264 trainees in the college. Several courses were repeated to allow the trainees to attend the courses on high demand. This was an attempt by the centre to offer different opportunities to all CCQfaculties in different timings that suit their needs and to eliminate any teaching schedules conflicts.

Actually, number of courses is good and reflects the efforts of the senior management and the centre to highlight the importance of training on Blackboard or presentations to introduce the Centre and its services with taking into account the establishment of the Centre recently.

**TABLE 5  
NUMBER OF TRAINING COURSES PER LAST TERM FALL 2018**

<b>Nr.</b>	<b>Course Name</b>	<b>Number of Participant</b>
<b>1</b>	MS. OneDrive Course	16
<b>2</b>	Blackboard Beginner Level Courses	60
<b>3</b>	Blackboard Intermediate Level Courses	38
<b>4</b>	Blackboard Advanced Level Courses	65
<b>5</b>	LMS Student Retention Training	24
<b>6</b>	Student Orientation of LMS	20
<b>7</b>	LMS Orientation presentation	30
<b>10</b>	Adoption Days of Blackboard	11

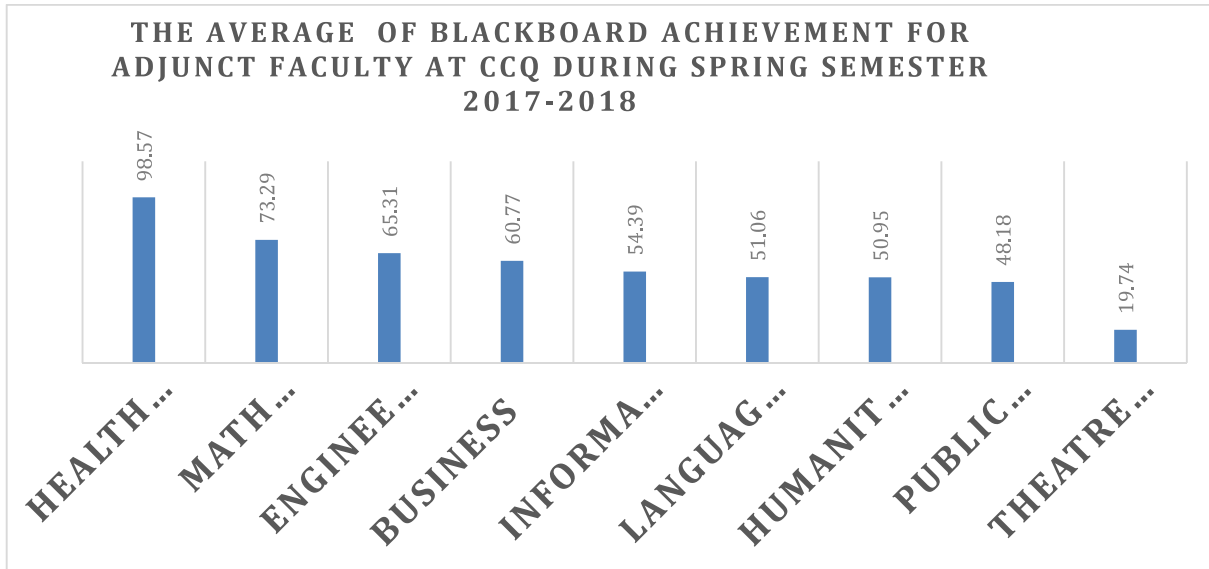
★ **Further Result:**

Figure 9 shows the frequency of the courses offered by the TLC and the number of participants who showed interest in attending them. It can be assumed that this frequency fluctuates according to the nature of the course and the number of repetitions as well as the proposed time of these courses.

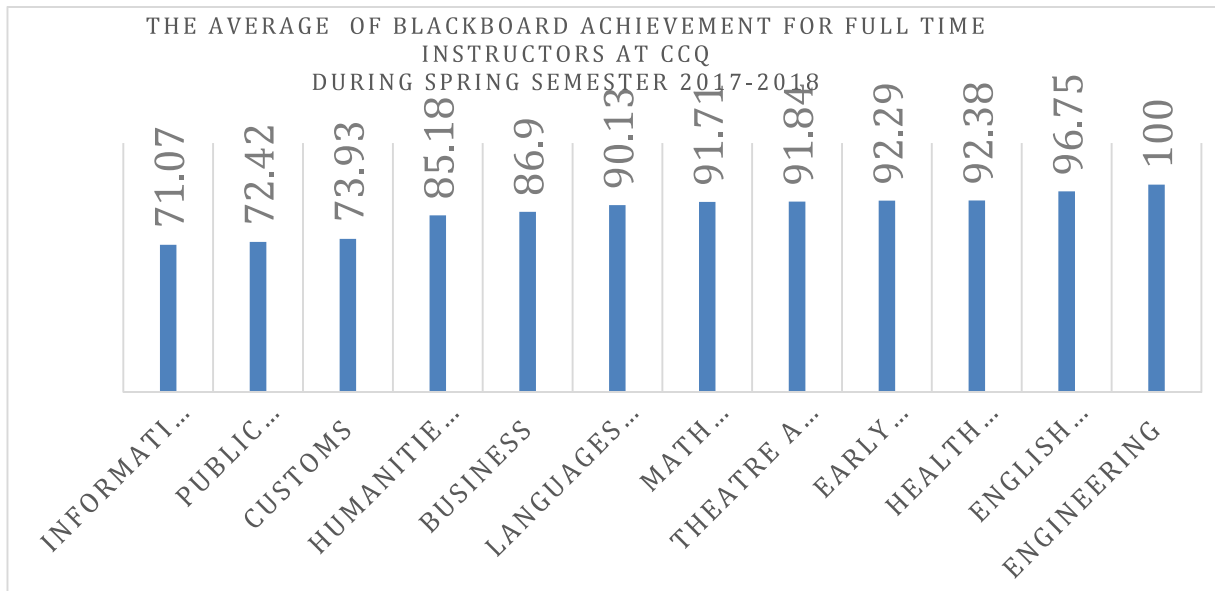
*Analysis Evaluation Result of the Instructors on Using the Blackboard at CCQ*

Analysis evaluation result during spring 2017-2018 ([1], [2], [3]) by this chapter is presented. In the following figures this results described.

**FIGURE 10  
AVERAGE OF BB ACHIEVEMENT BY ADJUNCT AT CCQ DURING SPRING SEMESTER 2017-2018**

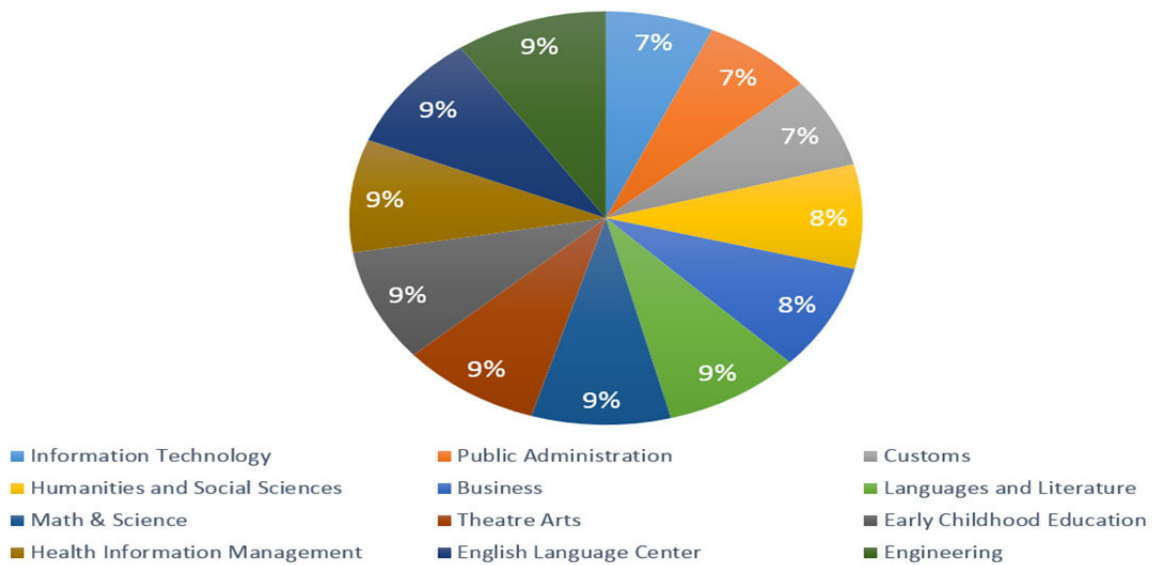


**FIGURE 11**  
**AVERAGE OF BB ACHIEVEMENT BY FULL TIME INSTRUCTORS AT CCQ DURING**  
**SPRING SEMESTER 2017-2018**

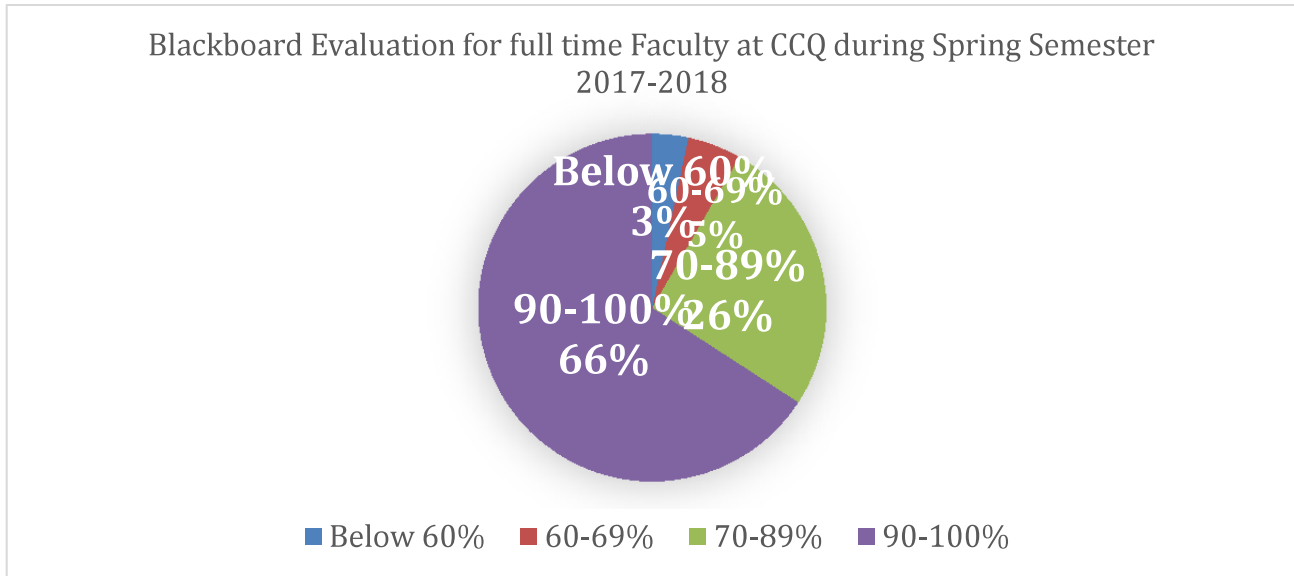


**FIGURE 12**  
**AVERAGE OF BB USAGE BY FULL TIME INSTRUCTORS AT CCQ DURING SPRING**  
**SEMESTER 2017-2018**

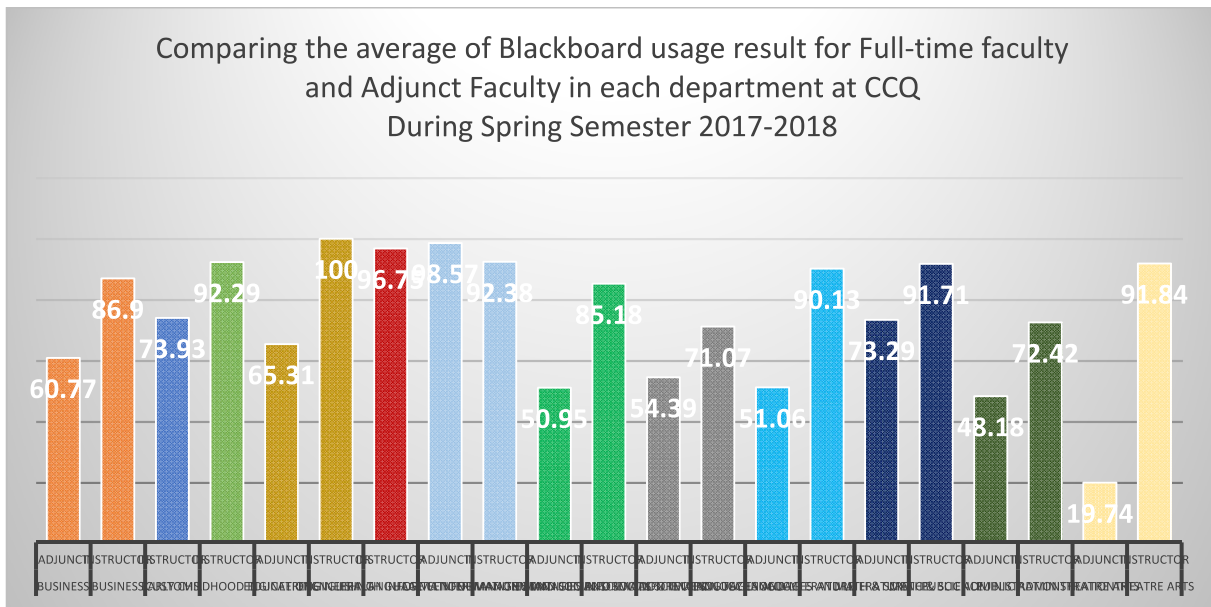
The Blackboard usage average of CCQ's Departments for **Full-time faculty** at CCQ during Spring Semester 2017-2018



**FIGURE 13**  
**EVALUATION RESULTS BY FULL TIME INSTRUCTORS AT CCQ DURING SPRING SEMESTER 2017-2018**



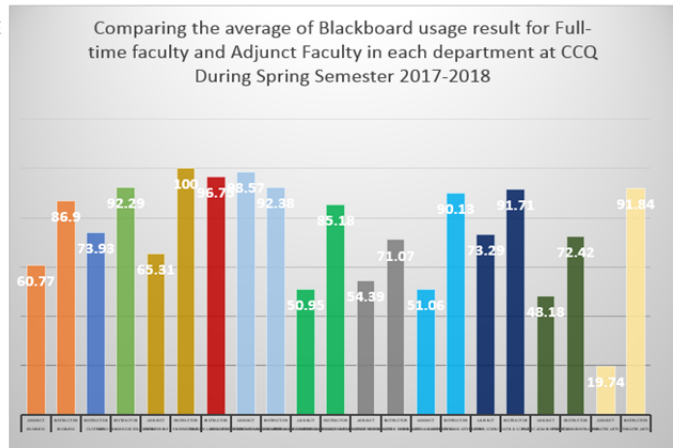
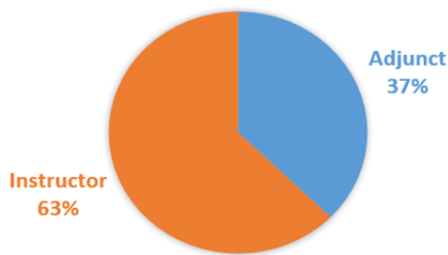
**FIGURE 14**  
**COMPARING THE AVERAGE OF BB USAGE AT CCQ DURING SPRING SEMESTER 2017-2018**



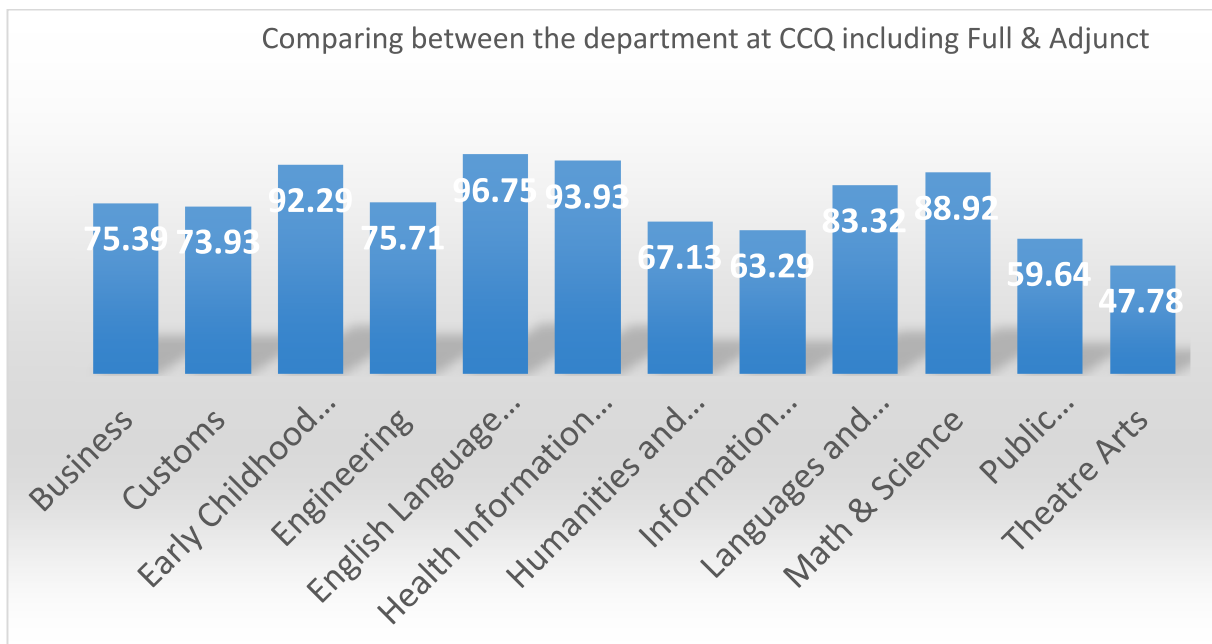
**FIGURE 15**  
**COMPARING THE AVERAGE OF BB USAGE AT CCQ DURING SPRING SEMESTER 2017-2018**

# Blackboard usage for Full Time Faculty and Adjunct , Spring Semester 2017-2018

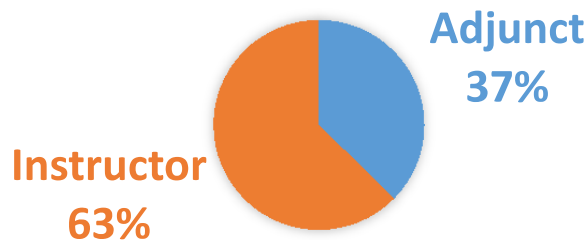
COMPARING THE AVERAGE OF BLACKBOARD USAGE RESULT FOR FULL-TIME FACULTY AND ADJUNCT FACULTY AT CCQ DURING SPRING SEMESTER 2017-2018



**FIGURE 16**  
**COMPARING BETWEEN ALL DEPARTMENTS AT CCQ DURING SPRING SEMESTER 2017-2018**



**FIGURE 17**  
**COMPARING THE AVERAGE OF BB USAGE RESULT AT CCQ DURING SPRING SEMESTER 2017-2018**



Finally, it is cleared why is the NGDLE significant. So that administrative functions of existing LMSs have become central to higher education, but online grade books and tools to distribute resources play, at best, an indirect role in learning. Moreover, new models of education are beginning to challenge a higher education structured solely around courses, credit hours, academic terms, and traditional methods of assessing learning and conferring credentials.

Currently, the contours of the learning environment are most often synonymous with the LMS's capabilities and limitations.

The core insight from the NGDLE research is that learners and instructors must have the ability to shape and customize their learning environments to support their needs and objectives. By espousing a component-based architecture based on standards and best practices, the NGDLE encourages exploration of new approaches and the development of new tools. [6,7,8,9,10,11]

## CONCLUSIONS

On a purely practical level, useful numerical results have been obtained, confirming the general interest of the community in LMS and the general importance ascribed by TLC to this rich subject matter, which encompasses Blackboard effectively using in both its theoretical and practical aspects.

The most important recommendations that are impacted of the research, which are summarized but not limited to the following points:

- Effectively using of Educational platforms such as Blackboard are played a great role for enhancing the abilities of faculty members for improving and enhance their quality of teaching and learning inside / outside classroom.
- There is a direct impression of the effectively using of Educational platforms such as Blackboard for improving the student retention about their courses. So that direct impression for improvement and enhance Students Success (Satisfaction, Retentions) too.
- It is recommending that technology be made available on an equitable basis for use in improving teaching and learning and enhancing instructor's professional development.
- Enable Instructors to establish contacts for mentoring, participate in networks, and access a variety of curricular and pedagogical models, via technology.
- Effectively using of LMS provides instructors number of short courses and workshops about an important technological educational tools and platforms which are available at the CCQ such as Promethean, Blackboard, Smart Board, and special training courses on technology.
- LMS can be affected on focus on the importance of using Educational technology and developing learning tools to support instructors and help them to improve their instruction skills insid classroom, outside classroom, and learning outcomes as well.

- Next-Generation Digital Learning Environments (NGDLEs) are caused for linking instructors of CCQ to the professional and technological development researcher from different fields and displyns in the State sectors of Qatar
- Next-Generation Digital Learning Environments (NGDLEs) offers a good opportunity for the instructors of the Community College in Qatar to interact with researchers and other educators from the relevant scientific researches and other sectors of education and international institutions in Qatar.
- Faculty and students will need to learn how to take advantage of the NGDLE, and support for an expansive collection of apps and tools could be difficult to provide.

## ACKNOWLEDGEMENTS

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