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The Efficiency Of Google Classroom As Assistant Tool In University Education

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Abstract- Many educational institutions have begun to apply technology in their operations, This makes learning continuous and interactive and not limited to place and time. Although building an e-learning platform that is compatible with the organization's vision and requirements is not easy, there are many e-learning platforms available for free or on the Internet that may fulfill our needs. We just need to test them and look at which platform that will benefit us better.

The aims of this research is to study the effect of applying Google Classroom as a supporting tool in university education, and evaluating the impact of the effectiveness of Google Classroom activities on students.

The sample included 60 students in the Department of Computer Science. A questionnaire was used to measure the effectiveness of the learning activities available in Google Classroom in three courses (Delphi, Data structures 1, Data structures 2). The results showed that the majority of students were satisfied with the Google Classroom In class. The results of the analyzed data showed that all ratios were higher than average in the areas of Easy access, benefit, communication and interaction, student satisfaction with Google Classroom activities.

Keywords: Educational technology, Google Classroom, Teaching – efficiency.

1.INTRODUCTION

In the light information flood, the successive change, and the knowledge growth at a rapid rate, which resulted in the information revolution where we currently live. The world is experiencing a great scientific and technological revolution that has had an impact on various life aspects. And education became required in order to seek for new educational methods and models to face many challenges at the global level, including an increased demand for education, with a decrease in the number of educational institutions, increasing the amount of information in all the various knowledge branches as well as the necessity to take advantage of technical developments in the field of education[1].

The concept of education has changed radically in recent times. Throughout the prior period, the teachers have been playing the role of knowledge providers, but their

role has now expanded. There is a lot of emphasis on merging technology into the classroom through innovative teaching strategies that focus on enabling students to achieve the desired learning objectives[2].

Educational technologies are often incorporated in a classroom setting to allow learning to be personalized and independent for the students [3]. Advocates and critics of using educational technologies have found a middle ground through Blended (or hybrid) learning [4]. The terms blended learning, mixed-mode learning, and hybrid learning are used interchangeably [5]. Blended learning allows a smooth transition from a shift in teaching methodology, for teachers and learners. It is important that the goal should not be just to integrate technology in the classroom; instead, pedagogical objectives should determine the different mode of teaching instructions[6].

Google Classroom appears as one of the free supporting tools in the distance learning process, and it's a simple and easy-to-use tool that helps teachers manage their courses tasks. Teachers can also form classes, distribute homework, give marks, send comments, and view everything in one place.

2. RELATED WORKS

Research that focuses on Google Classroom as a means of education is still very limited, although there are many research and studies related to e-learning or online education. In a previous study of the Google Classroom assessment as an active learning tool, the results showed that students were generally satisfied with Google Classroom, which was shown to be effective as an active learning tool. Researchers recommended that Google Classroom tools be integrated into Teaching and learning[3].

In one of the most recent studies by [7] who make use of a unified theory of acceptance and use of technology 2 (UTAUT2) model to investigate the main factors that affect the implementation of Google Classroom in specific courses. The survey with 24 five-point Likert-scale questions was collected from students who enrolled in these courses. The main findings support the fact that Google classroom can enhance the students' self-directed learning (SDL) cognitive skills. The study makes use of 'The Google Form questionnaires' as a tool to measure the level of users' satisfaction and self-evaluation. Additionally, it makes use the assessment in term of grading.

As suggested another study proposes several recommendations for administrators and teachers. Google Classroom is a free tool that can be used by any University that does not have enough resources to form its own LMS (Learning Management System). It reduces the paperwork for the teachers and assists in THE classroom management. It also helps in enhancing the student-teacher interaction and communication. Teachers need to do spend some time initially to understand the various features of Google Classroom as the study suggests that a number of teachers faced initial difficulties in getting used to its functionality. Teachers should also conduct a session to train students regarding the importance and use of Google Classroom in which they could explain the various features and benefits for the students[8].

In relation to the teachers , teacher perceptions were found to be generally positive toward the technology-based Google Classroom implementation[9].

Furthermore, a chi-square test of independence was performed to analyze the relationship between teachers' perceptions and their years of experience, grade level assignment, and subject matter. The relationships between the variables were significant at the $p<.05$ significance level.

In response to the study's driving question, the research found that teachers' perceptions of the technology-based Google Classroom were dependent upon their years of experience, grade level assignment, and subject matter[9].

3.RESEARCH METHODOLOGY

The students of the Department of Computer Science enrolled in three subjects (Data structures 1, Data structures 2, Delphi language). A random sample of 60 students was divided equally into the number of subjects. The sample based on the first questionnaire enabled us to identify students who had continuous Internet access throughout the study period.

Google Classroom was used as a support tool for lecturers in the above-mentioned courses. At the end of the semester, we distributed a questionnaire that included questions for four predictive variables: accessibility, use, interaction, communication, student satisfaction.

We measured the previous four variables using the five-point Likert scale ranging from 1 Strongly disagree to 5 Strongly agree in order to determine the reliability of our questionnaire.

4. HYPOTHESES

To test whether the Google Classroom application - applied by the researcher – impact teaching efficiency

The research proposed the following hypotheses:

4.1. The student can easily access and use Google Classroom activities

4.2. Google Classroom has an effective impact on improving student skills.

4.3. There is an impact on student learning using interaction and communication activities.

4.4. Using Google Classroom is widely accepted by the student.

5.PRESENTATION AND ANALYSIS OF DATA

The questionnaire form was adopted as the main tool for the data collection and information related to the subject matter of the study, and the questionnaire includes general information, and divided into the following parts:

Part One: Includes 5 phrases relating to easy access.

Part Two: Includes 5 phrases related to benefit.

Part Three: Includes 5 phrases related to Communication and Interaction.

Part Four: Includes 4 phrases related to Student Satisfaction and upon the collection of the questionnaire forms, the digital method is used in coding the answers of the study society individuals and the answers were coded by Lickert measure as set out in the following table:

Table (1) coding answers according to Lickerts Scale:

Answer	Strictly disagree	Disagree	Neutral	Agree	Strictly agree
Code	1	2	3	4	5

According to Lickert- Scale , the average of these percentages will be (3) neutral, if the answer average mark is not different from (3), this indicates that the acceptance average is medium , and if the answer average is more than (3) significantly , this means that the acceptance average is high and if the answer average is less than (3) significantly, this indicates that the acceptance average is low , and therefore , test shall be applied on whether the acceptance average is different from (3) or not and upon the completion of coding the answers and data entry by using " the statistical package for social science " SPSS" and this package is used in the data analysis.

Reliability of structural consistency

Results of Cronbach Alpha (a) for reliability and stability

For the purpose of testing the reliability of the answers of the society individuals to the questionnaire questions, Alpha coefficient "a" is used, as set out in the following table:

Table (2) Cro*nbach Alpha for each of phrases group.

The part	Phrases	Alpha coefficient value
First	Easy access	0.856
Second	Benefit	0.762
Third	Communication and interaction	0.741
Fourth	Student Satisfaction	0.812
Cronbach Alpha test for the total questionnaire		0.903

From the data set out in the above table, it was found that Cronbach Alpha (α) coefficient values for credibility and stability for each group of the expressions, were high and all were more than (0.6). And the Cronbach Alpha results for "Easy access" phrases was (0.856), for "Benefit " phrases was (0.762), for "Communication and interaction" phrases was (0.741), for "Student Satisfaction" phrases was (0.812), and for total questionnaire was equal to (0.903) .

6.RESULTSAND DISCUSSION

To determine the level of each variable of the study, one Sample T-Test was used. The level was high if the statistical significance is less than (0.05) and the mean response value for the total is greater than the average of the measurement (3), and the level is low if the mean response value for the total was less than the mean of the mean (3) and the statistical significance is less than 0.05 and the level was middle if the statistical significance value is greater than 0.05

First Hypothesis: The student can easily access and use Google Classroom activities

Table (3) explains the repetitive distribution and One Sample T-test for the total of the Easy access:

S.N	Phrases		Strongly agree	Agree	Neither	Disagree	Strongly disagree	Mean	Std. Deviation	P-Value	Level of agreement
1	Sign in to Google Classroom	No.	1	0	2	25	42	4.53	0.696	0.000	high
		%	1.4	0	2.9	35.7	60				
2	Access to scientific content	No.	1	2	12	16	39	4.29	0.95	0.000	high
		%	1.4	2.9	17.1	22.9	55.7				
3	Send and receive assignments	No.	0	3	13	26	28	4.13	0.867	0.000	high
		%	0	4.3	18.6	37.1	40				
4	ability to use in the system	No.	0	4	17	27	22	3.96	0.892	0.000	high
		%	0	5.7	24.3	38.6	31.4				
5	Easy to understand system	No.	2	0	15	21	32	4.16	0.958	0.000	high
		%	2.9	0	21.4	30	45.7				
Total of Easy Access								4.21	0.699	0.000	high

From Table (3), it was observed that

A) Phrases with high agreement level:

1. Sign in to Google Classroom.
2. Access to scientific content.
3. Send and receive assignments.
4. Ability to use in the system.
5. Easy to understand system

In table (3), it was observed that the means value of the Easy Access was equal to 4.21 which was more than the value of the mean of measurement (3), and the value of P- value was 0.000 which was less than 0.05, and this indicates that there were a significant differences between the mean value and mean of measurement (3), which means that the level of Easy Access was high.

This indicates that the first hypothesis was achieved "the student can easily access and use Google Classroom activities".

Second Hypothesis: Google Classroom has an effective impact on improving student skills.

Table (4) explains the repetitive distribution and One Sample T-test for the total of the Benefit:

S.N	Phrases		Strongly agree	Agree	Neither	Disagree	Strongly disagree	Mean	Std. Deviation	P-Value	Level of agreement
1	The educational activities available are of high educational quality	No.	1	3	9	26	31	4.19	0.921	0.000	high
		%	1.4	4.3	12.9	37.1	44.3				
2	Provides an excellent means of social communication	No.	1	2	15	32	20	3.97	0.868	0.000	high
		%	1.4	2.9	21.4	45.7	28.6				
3	Google Classroom helped me deliver tasks on time	No.	0	1	15	24	30	4.19	0.822	0.000	high
		%	0	1.4	21.4	34.3	42.9				
4	The course's activities helped me study issues to evaluate new ideas and apply what I learned	No.	2	3	20	27	18	3.8	0.972	0.000	high
		%	2.9	4.3	28.6	38.6	25.7				
5	The comments of the lecturer are useful	No.	1	5	12	29	23	3.97	0.963	0.000	high
		%	1.4	7.1	17.1	41.4	32.9				
Total of Benefit								4.03	0.652	0.000	high

From Table (4), it was observed that

A) Phrases with high agreement level:

1. The educational activities available are of high educational quality.
2. Provides an excellent means of social communication.
3. Google Classroom helped me deliver tasks on time.
4. The course's activities helped me study issues to evaluate new ideas and apply what I learned.
5. The comments of the lecturer are useful.

In table (4), it was observed that the means value of the benefit was equal to 4.03 which was more than the value of the mean of measurement (3), and the value of P- value was 0.000 which was less than 0.05, and this indicates that there were a significant differences between the mean value and mean of measurement (3), which means that the level of Benefit was high.

This indicates that the second hypothesis was achieved Google Classroom has an effective impact on improving student skills.

Third Hypothesis: There is an impact on student learning using interaction and communication activities.

Table (5) explains the repetitive distribution and One Sample T-test for the total of the Communication and interaction:

S.N	Phrases		Strongly agree	Agree	Neither	Disagree	Strongly disagree	Mean	Std. Deviation	P-Value	Level of agreement
1	I felt comfortable speaking through this medium	No.	4	6	9	33	18	3.79	1.102	0.000	high
		%	5.7	8.6	12.9	47.1	25.7				
2	The lecturer helped to comment on the participants in the course and helped in the useful discussions	No.	2	8	21	26	13	3.57	1.015	0.000	high
		%	2.9	11.4	30	37.1	18.6				
3	I was able to communicate my viewpoint to the participants in the activity	No.	9	10	23	21	7	3.1	1.169	0.477	middle
		%	12.9	14.3	32.9	30	10				
4	The lecturer is excited to teach and illustrate with Google Classroom	No.	2	2	17	29	20	3.9	0.95	0.000	high
		%	2.9	2.9	24.3	41.4	28.6				
5	The lecturers are friendly and can contact them easily	No.	1	4	14	30	21	3.94	0.931	0.000	high
		%	1.4	5.7	20	42.9	30				
Total of Communication and interaction								3.66	0.727	0.000	high

From Table (5), it was observed that

A) Phrases with high agreement level:

1. I felt comfortable speaking through this medium.
2. The lecturer helped to comment on the participants in the course and helped in the useful discussions.
3. The lecturer is excited to teach and illustrate with Google Classroom.
4. The lecturers are friendly and can contact them easily.

B) Phrases with middle agreement level:

1. I was able to communicate my viewpoint to the participants in the activity

In table (5), it was observed that the means value of the Communication and interaction was equal to 3.66 which was more than the value of the mean of measurement (3), and the value of P- value was 0.000 which was less than 0.05, and this indicates that there were a significant differences between the mean value and mean of measurement (3), which means that the level of Communication and interaction was high.

This indicates that the Third hypothesis was achieved "There was an impact on student learning using interaction and communication activities".

Fourth Hypothesis: Using Google Classroom is be wide and accepted by the student.

Table (6) explains the repetitive distribution and One Sample T-test for the total of the Student Satisfaction:

S.N	Phrases		Strongly agree	Agree	Neither	Disagree	Strongly disagree	Mean	Std. Deviation	P-Value	Level of agreement
1	I recommend this method to learn and apply it to another topic	No.	2	1	4	20	43	4.44	0.895	0.000	high
		%	2.9	1.4	28.6	61.4					
2	Google Classroom is my first choice in active learning compared with other methods	No.	3	1	20	27	19	3.83	0.992	0.000	high
		%	4.3	1.4	28.6	38.6	27.1				
3	I like Google Classroom as an educational initiative and give me an incentive to learn	No.	5	3	15	39	8	3.6	0.999	0.477	high
		%	7.1	4.3	21.4	55.7	11.4				
4	Google Classroom helped me develop my skills	No.	1	3	13	23	30	4.11	0.956	0.000	high
		%	1.4	4.3	18.6	32.9	42.9				
Total of Student Satisfaction								4	0.769	0.000	high

From table (6), it was observed that

A) Phrases with high agreement level:

1. I recommend this method to learn and apply it to another topic.
2. Google Classroom is my first choice in active learning compared with other methods.
3. I like Google Classroom as an educational initiative and it gives me an incentive to learn.
4. Google Classroom helped me develop my skills.

In table (6), it was observed that the means value of the Student Satisfaction was equal to 4 which was more than the value of the mean of measurement (3), and the value of P- value was 0.000 which was less than 0.05, and this indicates that there were a significant differences between the mean value and mean of measurement (3), which means that the level of Student Satisfaction was high.

This indicates that the Third hypothesis was achieved "Using Google Classroom is be wide and accepted by the student ".

Results:

1. The results showed that the level of Easy access was high, with an average of 4.21 according to the five-scale.

2. The results showed that the level of benefit was high, with an average of 4.03 according to the five-scale
3. The results showed that the level of Communication and interaction was high, with an average of 3.663 according to the five-scale.
4. The results showed that the level of Student Satisfaction was high, with an average of 4 according to the five-scale.

7.CONCLUSION

The analysis of the questionnaire revealed that Google Classroom has a significant impact on overall classroom teaching in general. It also showed that Google Classroom activities are of educational benefit and have contributed well to communication and interaction between students, and between students and teachers.

Finally, Google Classroom has received students' satisfaction, and recommended to use them in other topics.

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