The Limitation of The Effectiveness of Google Classroom as An Online Platform in During the Coved-19 Pandemic in Iraqi Universities

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Abstracts: The popularity of the Web and rapid developments in its tools have had a clear impact on the educational field. Many countries try to take benefit of the advantages provided by the Web like online learning programs. This paper shows the effectiveness of the Google Classroom platform as an alternative to material lectures on the campus during the application of quarantine considering the outbreak of the Coronavirus (COVID-19). This study was applied to the Iraqi public and private universities scattered in different regions of the country. The data was collected by sending an online questionnaire. Technology Acceptance Model (TAM) was adapted to examine the effectiveness of learning online activity. The number of answers was 1704, which were collected online from male and female college students. The student's difficulty in dealing with Google Classroom as an alternative to attending inside campus appears in the data analysis section, where the data of the statistical analysis of this study showed negative results in terms of Google Classroom subscales like the ease of use, perceived usefulness, communication, and interaction and perceive instruction delivery. On the other hand, some positive results appeared related to the student's satisfaction in using Google Classroom. This finding indicates that Google classroom to be a difficult medium of use for students due to the universities and the lecturers in Iraq never uses such online programs in their studies.

Keywords: Google Classroom, Online Platform, Iraqi Universities, Students.

1. INTRODUCTION

The development witnessed by the world in the various fields of life, especially in the field of technology and the Web, made them impose their hegemony on the vital fields. E-learning and the programs offered in the education environment are some of the reflection developments in the field of Information Technology (IT) and Web. Adoption of E-learning like google classroom in education in some schools and universities for some subjects will have an impact on the teacher and the student in terms of the method of delivering information to the student in a way that differs from the use of traditional methods and increase the skills of teachers and students in using programs and applications designed for online education [1]. When talking about programs designed for online learning, the developed world countries are luckier to use such programs in their academic education system compared with developing countries. Most developing countries still rely on the traditional means of education represented by using the whiteboard where the teacher is the main source of information. The use of online learning programs in these countries and making it the ideal alternative to replace campus lectures in the Coronavirus period and considering it the only means of interaction between the student and the lecturer may reflect unexpected results of using such

programs [2]. Google Classroom is one of the programs designed for this purpose, which was used as an alternative to communication between lecturers and students in most Iraqi universities to display scientific material in the period of health urbanization that entered the country. Thus, the purpose of this study has two fields: to identify google classroom subscales' effectiveness regarded by Iraqi universities student, and to examine the differences in the effectiveness of google classroom subscales of Iraqi universities between male and female students. Depending on these two parts of the study, the following research question is proposed: Are there any significant differences in the effectiveness of Google Classroom subscales of Iraqi universities between male and female students?

The results obtained from students through online questionnaire method on investigating the two main factors are perceived of the benefit to using (perceived use benefit PU)

[3], and ease of use (perceived of ease of use, PEOU) depending on TAM which it is a model of user acceptance of Information Technology (IT) and Information Systems (IS). E-learning (blind learning) provided an opportunity for many students to join courses in various fields, regardless of time and place with ease. Many researchers touched on the subject of e-learning in terms of the programs used, the areas in which e-learning was applied, or the outcome that can be observed [4,5].

The beginnings of education via Internet E-learning had been applied in the European and American continent at the end of the last century. with the acceleration and competition in the development of software make this serves a basic concept and platform of web course homepage system (webCH), a system for multimedia integrated learning (smile), blackboard learning system, and web course tools (WebCT) [6]. Adult Distance Learning using a Web-Based Learning Management System: Methodology and Results and widely used is Google Classroom [7]. Concerning education, the field of E-learning considers as a factor that supports learning and the education process. Some researchers have pointed out the effectiveness of E-learning in teaching and learning [8]. Others refer to the Gender Influence of E-Learning [9]. The Technology Acceptance Model TAM was first introduced by Davis to explain computer usage behavior. TAM is an adaptation of the theory of Reason Action (TRA) specifically designed for modeling the acceptance of Information Systems (IS) and Information Technology (IT). There are two important concepts of the actual system in use that TAM defined: Perceptive Usability (PEOU [10], indicated to the degree to which a person believes that the use of the system is not needed any effort is the main factor affecting the behavior of the reception computer, and Perceived Usefulness (PU), pointed to the level at which a person believes that how much can improve its performance when using a particular system. University student participation and involvement have been important to successful e-learning systems, and therefore student acceptance behavior should be evaluated. They suggested that TAM was a powerful theoretical model where its validity can extend to the context of e-learning [11,12]. Google classroom considers the popular software introduced by the Google family a few years ago. The main purpose of the software is to serve e-learning and provide assistance in education.

2. MATERIEL AND METHODS

2.1. Participants

The google classroom has been one of the most common types of use in the education system and the (TAM) was considered in this study. The participants in the study consisted of students from Iraqi universities who were using google classroom in their studies. The survey included questions on demographics information. Demographic questions covered gender, age, type of university, level of education.

2.2. Measurement

Items to measure the constructs of interest were taken for the google classroom domain using instruments from previous research as a starting point [13]. All the items were measured using a five-point nominal scale ranging

from 1 (strongly disagree) to 5 (strongly agree). Before the distribution, the instrument was first reviewed by experts to ensure its content validity. The experts were selected based on their expertise in the online teaching and learning domain. Considering their recommendations, some minor modifications were made involving paraphrasing, deleting items, rephrasing sentences, and renumbering items. Further, a pilot study was carried out to ensure reliability. It involved 30 students who enrolled in data mining subjects. The results reveal a Cronbach Alpha greater than 0.81. Data were analyzed using both descriptive statistics and inferential statistics.

The questionnaire consisted of google classroom five elements. The first section asked questions about the ease of access participants to Google classroom and ease to understand the system. the second section asked about the monitoring and understanding of the system of perceived usefulness of quality of learning activity. the third part asked about communication with the lectures and the students in the classroom and interacting with other participants in this activity. section four asked about providing clear instructions by the lectures on how to participate in course learning activities and provides feedback that allowed students to better understand the content of the course. the final part measured the student's satisfaction with the Google Classroom as a learning and motivation booster.

2.3. Data collection

The study was conducted approximately halfway through a 2020 semester. Participants were initially contacted via email and invited to participate in the study by clicking on a link to complete a questionnaire on the web. The questionnaire took approximately 10 min to complete. Completion of the questionnaire was voluntary and all responses were anonymous. this study's participants were (1704) undergraduates enrolled in the morning section at the public and private universities in Iraq. of these (1704) participant's students (699) were male and (1005) were female. The descriptive statistics of the respondent's demographics are presented in table 1.

Table 1: Demographic information (Gender, Age, Type of University, level of Education)

Variable	Frequency	Percentage %
Gander		
Male	699	41.0 %
Female	1005	59.0 %
Age Range		
18 – 20	573	33.6 %
21 – 23	823	48.3 %
24 – 26	195	11.4 %
More than 26	113	6.6 %
Type of Universty		
Public	1621	95.1 %
Prived	83	4.9 %
Level of Education		
First year	472	27.7 %
Second year	548	32.2 %
Third year	254	14.9 %
Fourth year	430	25.2 %

2.4. Data Analysis

Various software programs apply to the abovementioned study field, but researchers have to choose the appropriate software. In general, should consider the background of the model, the distributional characteristics of the data, the psychometric properties of the variables, and the magnitude of the aforementioned parameters' relationships given a specific sample size [14]. The Effect of Small Sample Size on Measurement Equivalence of Psychometric Questionnaires in MIMIC Model: A Simulation Study. The Statistical Package for Social Sciences (SPSS) software is widely used for statistical analysis, especially in education and research. Here, the data were analyzed using SPSS ver. 22. The gathered data were inferentially analyzed by using Pearson's correlation to determine the relationship between Google Classroom elements. this study also uses the descriptive analysis of data was analyzed using means and standard deviations for the Google Classroom elements. The level of significance was set to $p < 0.05$.

3. RESULTS AND DISCUSSIONS

3.1. Ease of Access

Table 2 shows the analysis effectiveness of the Google Classroom of Iraqi universities students in the context of the Ease of access. The questions are arranged based on the scores in descending order to obtain the highest score for each question.

Table 2: Mean and SD value for each item of Ease access.

Variable	Item	Mean	SD
Ease of access	Signing on to the Google Classroom	2.74	1.208
	Sending and receiving the assignment	2.54	1.116
	Submitting Assignment	2.43	1.145
	Navigating the system	2.37	1.141
	Accessing course materials	2.30	1.122
	Easy to understand the system	2.25	1.037

The results of the descriptive statistical analysis show the item of "Signing on to the Google Classroom" got the highest mean due to its score of (M = 2.74, SD = 1.208). Respondents agreed that the introduction of Google Classroom in their class is not that difficult. Then, the lowest mean value goes to a component of "Easy to understand the system" with a mean value (M = 2.25, SD = 1.037). The respondent disagreed that it is easy to understand the system. Therefore, the lecturer should pay more attention to help or aide the students on how to understand the system.

3.2. Perceived Usefulness

Table 3 shows the analysis of the Google Classroom of Iraqi universities students in the context of the Perceived usefulness. The questions are arranged based on the scores in descending order to obtain the highest score for each question.

Table 3: Mean and SD value for each item of Perceived usefulness.

Variable	Item	Mean	SD
Perceived usefulness	The feedback provided by the lecturer is useful	2.52	1.235
	The grading system in Google classroom help in monitoring my performance and understanding the current topic discussed	2.37	1.181
	Google classroom help me to submit an assignment on time	2.36	1.208
	The subject objective, assessment, and content were consistent with the aid of Google Classroom	2.34	1.093
	The course activities helped me to examine issues, evaluate new ideas, and to apply what I have learned	2.23	1.139
	Google classroom is an excellent medium for social interaction (lecturer vs students and students vs student) as demonstrated by this activity.	2.22	1.107
	The quality of the learning activity was excellent	2.21	1.080

The results of the descriptive statistical analysis show the item of “the feedback provided by the lecturer is useful” got the highest mean due to its score of (M = 2.52, SD = 1.235). Respondents agreed in terms of usage of the Google Classroom. The feedback provided by the lecturer is useful. Then, the lowest mean value goes to item of “the quality of learning activity in Google Classroom” with a mean value (M = 2.21, SD =1.080). This result indicates that the respondent disagreed that the quality of learning activity and the grading system in Google Classroom is useful compared to other variables.

3.3. Communication and Interaction

Table 4 shows the analysis of the Google Classroom of Iraqi universities students in the context of Communication and Interaction. The questions are arranged based on the scores in descending order to obtain the highest score for each question.

Table 4: Mean and SD value for each item of Communication and interaction.

Variable	Item	Mean	SD
Communication and interaction	Lecturer are friendly, approachable and could be easily contacted	2.50	1.299
	Lecturers are enthusiastic in teaching and explaining via the Google Classroom	2.43	1.284
	My point of view was acknowledged by other participants during this activity	2.40	1.197
	The lecturer helped to keep course participants engaged and participating in productive discussion	2.30	1.197
	I felt comfortable interacting with other participants in this activity	2.26	1.203
	I felt comfortable conversing through this medium for this activity	2.24	1.185

The results of the descriptive statistical analysis show the item of “Lecturers are friendly, approachable and could be easily contacted” got the highest mean due to its score of (M = 2.50, SD = 1.299). Respondents agreed that lecturers are friendly, approachable, and could be easily contacted in Google Classroom. Then, the lowest mean value goes to “the comfortable of conversing through this medium for this activity” with a mean value (M = 2.24, SD = 1.185). The result shows that the respondent disagreed with comfortable conversation through this medium for this activity in Google Classroom compared to other components. Therefore, the lecturer should put more concern into making an interactive platform of online in order to have active online learning.

3.4. Perceive Instruction Delivery

Table 5 shows the analysis of Google Classroom of Iraqi universities students in the context of the Perceive Instruction Delivery [15]. The questions are arranged based on the scores in descending order to obtain the highest score for each question.

Table 5: Mean and SD value for each item of Perceive Instruction Delivery.

Variable	Item	Mean	SD
Perceive Instruction Delivery	Lecturer communicated important due dates/time frames for learning activities	2.68	1.272
	Lecturer provide clear instructions on how to participate in course learning activities	2.59	1.262
	Lecturer clearly communicated important course topics	2.47	1.245
	The lecturer provides feedback that allowed me to better understand the content of the course	2.37	1.208
	The lecturer helped keep the course participants on task	2.33	1.188

The results of the descriptive statistical analysis show the item of “clearly communicated important due dates/time frames for learning activities” got the highest mean due to its score of (M = 2.68, SD = 1.272). The respondents agreed that the lecturer should provide clearly communicated important due dates/time frames for learning activities. Then, the lowest mean value goes to “keep the course participants on task by lecturer helped” with a mean value (M = 2.33, SD = 1.188). This component shows that the respondent disagreed that the lecturer was helpful enough to keep the course participants on task. Therefore, an alternative way should be implied to increase students’ attention.

3.5. Communication and Interaction

Table 6 shows the analysis of the Google Classroom of Iraqi universities students in the context of the Student’s Satisfaction. The questions are arranged based on the scores in descending order to obtain the highest score for each question.

Table 6: Mean and SD value for each item of Student’s Satisfaction.

Variable	Item	Mean	SD
Student’s Satisfaction	I like the Google Classroom as a learning initiative and motivation booster	2.35	1.183
	I would recommend this method of learning to be applied to another appropriate subject	2.22	1.097
	Google classroom is my first choice in active learning compare to another method	2.22	1.070
	The subject met my personal goal through the medium introduced	2.20	1.164

The results of the descriptive statistical analysis show the item of “the Google Classroom as a learning initiative and motivation booster” got the highest mean due to its score of (M = 2.35, SD = 1.183). Respondents agreed and were satisfied with the introduction of Google Classroom as a learning initiative and motivation booster. Then, the lowest mean value goes to “the subject of met my personal goal through the medium introduced” with a mean value (M = 2.20, SD = 1.164). This shows that the respondent is not satisfied or disagreed that the subject met his/her personal goal through the medium introduced.

3.6. Value For Male and Female

Table 7 shows the results of the T-test that the differences in the effectiveness of google classroom subscales of Iraqi universities between male and female students.

Table 7: Mean and SD value for male and female.

Variables	Gender	N	Mean	Std. Deviation	Std. Error Mean
Ease of access	Male	699	2.3958	0.38681	0.01463
	Female	1005	2.3930	0.38920	0.01228
Perceived usefulness	Male	699	2.3135	0.27484	0.01040
	Female	1005	2.3311	0.27005	0.00852
Communication and interaction	Male	699	2.3377	0.31524	0.01192
	Female	1005	2.3553	0.31890	0.01006
Perceive instruction delivery	Male	699	2.4927	0.39711	0.01502
	Female	1005	2.4898	0.39056	0.01232
Student's satisfaction	Male	699	2.2893	0.59957	0.02268
	Female	1005	2.2007	0.56318	0.01776

The results show that the mean ease of access in the male group was 2.3958 with a standard deviation of 0.38681. In the female group, the mean ease of access was 2.3930 with a standard deviation of 0.38920. The results show that the mean perceived usefulness in the male group was 2.3135 with a standard deviation of 0.27484. In the female group, the mean ease of access was 2.3311 with a standard deviation of 0.27005. The results show that the mean communication and interaction in the male group was 2.3577 with a standard deviation of 0.31524. In the female group, the mean ease of access was 2.3353 with a standard deviation of 0.31890. The results show that the mean perceives instruction delivery in the male group was 2.4927 with a standard deviation of 0.39711. In the female group, the mean ease of access was 2.4898 with a standard deviation of 0.39056. The results show that the mean student satisfaction delivery in the male group was 2.2893 with a standard deviation of 0.59957. There were 699 participants in the male group. In the female group, the mean ease of access was 2.2007 with a standard deviation of 0.56318. There were 1005 participants in the exercise group. Therefore, there was a mean difference between the male and female groups in Google Classroom. Table 8 shows the Independent Samples Test as highlighted below:

Table 8 Summary of t-test between Google Classroom subscales and students.

Variables	*t*	*df*	Mean Difference	Std. Error Difference	*p-value*
Ease of access	0.145	1702	0.00277	0.01912	0.845
Perceived usefulness	-1.310	1702	-0.01755	0.01340	0.859
Communication and Interaction	1.428	1702	0.02233	0.01563	0.498
Perceive Instruction Delivery	0.152	1702	0.00295	0.01937	0.336
Student's Satisfaction	3.075	1440.410	0.08860	0.02881	0.002

* Statistically significant at the 0.05 level

The results of the Independent Samples Test showed that the differences in the effectiveness of Google Classroom subscales of Iraqi universities between male and female students. Table 8 shows the results of t-value (t), degrees of freedom (df), Mean Difference, Std. Error Difference, p-value for all the variables of Google Classroom. There are significant differences in term of Student's Satisfaction ($t = 3.075$, $df = 1440.410$, Mean difference = 0.08860, Std. error difference = 0.02881, $p < 0.002$), and there is no significant differences between Google Classroom subscales Perceive instruction delivery ($t = 0.152$, $df = 1702$, Mean difference = 0.00295, Std. error difference = 0.01937, $p > 0.336$), followed by Communication and interaction ($t = 1.428$, $df = 1702$, Mean difference = 0.02233, Std. Error Difference = 0.01563, $p > 0.498$), Ease of access ($t = 0.145$, $df = 1702$, Mean difference = 0.00277, Std. Error Difference = 0.01912, $p > 0.845$), and lastly, the Perceived usefulness ($t = -1.310$, $df = 1702$, Mean difference = -0.01755, Std. Error Difference = 0.01340, $p > 0.859$). However, there were no significant differences in the effectiveness of Google Classroom of Iraqi universities between male and female students.

DISCUSSION

Using technology in the classroom is a challenging task in Third World Countries. incorporate new technology (E-learning) with traditional learning methods aid students to learn the content effectively and increase their participation [16]. However, some studies indicate that educators need time and/or skills to successfully implement available digital technology [17] and students need to have skills and knowledge to use the technology [18] found that Google classroom has a positive effect on students. It can be interpreted that students as Google classroom users can feel that all the facilities and features offered are user-friendly and easily accessible to facilitate the completion of assignments. While the results of the study [19] said that concentration, perceived ease of use, enjoyment, usefulness, and satisfaction significantly affected the intention to use Google Classroom by college students. Moreover, perceived usefulness, ease of use, confirmation, information quality, and system quality had a significant impact on satisfaction. Results from reference [20] showed that students positively perceive Google classroom learning environments. The results of the investigation of gender differences indicate no gender and course differences in Google classroom learning environments, and when assessing students' reactions to studying through a Google classroom, it was evident that more than 80% of students had fun Studying through such a classroom setup [21] in their work reported that classroom environments in which teachers systematically supported cooperative learning opportunities were effective in promoting self-organizing learning of secondary school students. Results for [22] demonstrate that it is easier to track and evaluate assignments submitted through Google Classroom rather than the traditional manual method of submission in the study did it by Sukmawati [23], Google Classroom plays a big role in making learning easier. Based on the result, Google Classroom is highly recommended by participants. Cost is the main reason for adopting Google Classroom, it is suggested that an organization that practices blended learning could leverage the platform as an e-learning tool Liliana 2020 [24]. Thus, universities students are part of a complex picture of Iraq classrooms nowadays that reflexing how much the technology skills of teachers and students have skills to use e-learning technology, besides that the availability and the implementation of this technology in educational institutions. The context and the findings of this study provide interesting insight into the effectiveness of using technology in the classroom in terms of which technology is used (students' personal technology or school-issued technology) and who initiates the use (the teacher or the students). In other words, this study responds to the call for more research on the digital tools that are used in the classroom.

Depending on the main variables of this study; students and Google Classroom; were to show the effectiveness of using google classroom as a platform in universities. the result of this study was not positive compared with previous studies mentioned above. For instance, the male and female students are more effective with a Perceive instruction delivery. Meanwhile, the Perceived usefulness and Student's satisfaction took the last stage among the five subscales of google classroom. This study shows there are significant differences between the two groups of student's male and female. According to the analysis results, the male students showed that they are more effective with Ease of Access in Google Classroom than Communication and Interaction to the female students, who showed more effectiveness with Communication and Interaction than Ease of Access in Google Classroom. The result of T-

test showed that the satisfaction levels of student's increase when the lecturers use Google Classroom as a platform. Furthermore, in line with the aim of the research, this work tried to discover the effectiveness of Google Classroom contributes to students. meanwhile, there are no significant differences between students and the effectiveness of Google Classroom in terms of ease of access, perceived usefulness, communication, and interaction, and perceive instruction delivery.

CONCLUSION AND RECOMMENDATION

One of the most important revolutions that humanity has witnessed is the technological revolution, which began to be seen in the middle of the last century. The adoption of digital technology in various areas of life has made it an essential cornerstone of work with which it cannot be dispensed. Education in general, whether in schools or university institutions, was able to take advantage of information technology and apply it in the service of teachers and students alike, especially in developed countries. The proficiency in the use of educational platforms by schools and universities such as Google Classroom and other programs that are used for such goals in some countries and making them an educational alternative to the student's attendance to the educational institution in the circumstances of the coronavirus epidemic is evidence that both the student and the lecturer have prior skills in using such Platforms for information exchange. While finding that some countries, including Iraq, were among the countries that faced many difficulties to replace attending schools and universities to take lessons and lectures with electronic educational platforms. This presented study clarifies the problems and obstacles that Iraqi universities students faced in using the Google Classroom educational platform and making it an alternative to students' attendance on campus considering the coronavirus pandemic.

Most results of the questionnaire data analysis were not positive. On the contrary, the answers of universities students took a negative character, due to the students' lack of prior experience in using and dealing with such educational platforms and modern technology. At the same time, one must not neglect the deficiency of the lecturer himself in using these platforms due to his lack of experience and skills in dealing with information technology and its importance to serve the educational process in Iraqi university institutions. The recommendation of this work is to pay more attention to E-learning by developing the skills in lecturers' staff. Encouraging lecturers to students to develop their skills in using such platforms and digital technology to reduce the gap that may arise between the student and the lecturer due to the student's apprehension and lack of skill in using such programs.

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