



FACTORS AFFECTING UNIVERSITY OF MOSUL STUDENTS' ACCEPTANCE OF USING GOOGLE CLASSROOM AS AN E-LEARNING APPLICATION, BY USING UTAUT

Ahmed Muyasser Abed Jader

Dept. of Business Administration, College of Administration and
Economics, University of Mosul.

Abstract

The study aims to highlight the factors which affect the behavioural intention(BI) of University of Mosul students to use Google Classroom(GC) application as one of the platforms used in e-learning in Iraq. This study focuses on studying the effect of the following factors: Performance Expectancy(PE), Effort Expectancy(EE), Social Influence(SI), and Facilitating Conditions(FC) on the behavioural intention(BI) of using Google Classroom(GC) by students of the University of Mosul, using the Unified Theory of Acceptance and Use of Technology(UTAUT). The study sample was 396 Postgraduate and undergraduate students from the University of Mosul. The results of the study indicate that the performance expectancy(PE), effort expectancy(EE), and facilitating conditions(FC) had statistically significant effect on behavioural intention to use Google Classroom(GC) in e-learning. The study also indicates that the Social Influence(SI) had a negative effect on behavioural intention(BI) to use this technology.

Keywords: Behavioural Intention(BI), Google Classroom(GC), UTAUT, Performance Expectancy(PE), Effort Expectancy(EE), Social Influence(SI), Facilitating Conditions(FC)

1. Introduction

After the Corona pandemic, most universities and schools were forced to switch from the traditional to the electronic system in learning, and despite the spread of the Google Classroom application in e-learning, it is still limited in developing countries such as Iraq.

Therefore, acceptance to use this application by students and understanding of the factors that may influence their behavioural intention which has become imperative for the success of its use in the educational process.

Furthermore, as long as it is confirmed that the acceptance or non-acceptance of the user constitutes an obstacle to the successful use of technology. Therefore, the user's acceptance to use the technology is an essential factor in determining the success or failure of any new technology. Therefore, it is substantial to understand the reasons and factors making users accept and use the new technology, as it helps in improving the use, design, evaluation, and prediction of how users will respond to this technology. As well as to respond to the components of the unified theory of acceptance and use of technology (UTAUT). This theory has not previously used as a scale for the acceptance and use of Google Classroom in the field of e-learning in Iraq. Therefore, there is a need to study the behavioural intentions of students of the University of Mosul to accept and use the Google Classroom application as a first step in adopting it in e-learning in other Iraqi Universities. Therefore, the study seeks to determine the factors affecting the intentions of University of Mosul students to accept and use Google Classroom application in e-learning by using UTAUT.

2. Study Background

2.1 E-learning:

The Information and communication revolution has witnessed many changes, which resulted in an increase in the amount of information, which made traditional learning methods unable to keep pace with these changes in all fields. In addition to the spread of the Corona pandemic in all countries of the world, which gave great importance to e-learning due to the urgent need for human development (Aboud, et al, 2008: 278-279). Some authors believe that there is ambiguity and lack of clarity in defining the concept of e-learning at educational institutions level, in addition to the disparity in the opinions of those in charge of the educational process, here the role of this type of learning came as it will be main or a complete alternative to traditional learning (Al-Adely, 2007: 767). Thus, e-learning can be defined as the following:

- E-learning can be defined as: using ICT to access to teaching and learning sources electronically (Arkorful & Abaidoo,2015). Also may be defined as: a method of learning using modern tools of communication, like: a computer, networks, multimedia (picture, graphics, video and sound), e-libraries, search engines, in addition to internet portals, whether it is remote or at classroom (Al-Mosa, 2020: 3).

2.2 E-Learning Types:

E-learning can be classified into three types: (Dhaw & Al-Musraty, 2020):

1. **Synchronous E-Learning:** this type requires the presence of the lecturer or the trainer with the student or the trainee at the same time, and communication between them takes place, but not necessarily in the same place. More, this method depends on the technological methods recognized in e-learning, which use the internet as a main tool in the educational process to communicate and exchange ideas and information between the two parties. Also, this method depends on the virtual classes and chat rooms (Tabak & Rampal, 2014).
2. **Asynchronous E-Learning:** this type is almost contrary to the first type, as it does not require the presence of the lecturer or trainer at the same time as the student or the trainee, it depends on recording lectures or classes through available technological tools such as e-mail, internet, social media sites and CDs. Through which the student can view it at the time and time that suits him (Tabak & Rampal, 2014).
3. **Blended E-Learning:** this type combines the two previous types, and includes a set of tools that are designed to integrate each other, such as virtual learning software based on the internet, traditional learning courses and electronic performance support systems (Dhaw & Al-Musraty, 2020).

2.3 Google Classroom

Google Classroom is one of Google Applications For Education (GAPE) based on Web 2.0 technology, which has been released in 2014, it deals with synchronous and asynchronous e-learning through the stimulating facilities it provides which are essential for teachers by allowing them to upload materials, make an announcement and tasks, discuss ideas, quiz, quiz marking, use media and so on, so it is Learning Management Systems (LMS) (Sukmawati & Nensia, 2019). On other hand, it facilitates learning for the students through providing replies, attending exams, doing homework and assignments, and feedback easily (Nizal et al., 2016). In addition to it is connected with hangout, calendar, YouTube, Drive, and Email. So it facilitates the process of learning for both teachers and students to be in touch all the time.(Sukmawati & Nensia, 2019).

2.4 The Unified Theory of Acceptance and Use of Technology (UTAUT)

Technology acceptance and intent to use are among the biggest challenges facing educational institutions (Gong et al, 2004). Furthermore, technology acceptance might be defined as “the apparent desire of a group of users to use information technology for the tasks for which it was designed to support it” (Dillon and Morris, 1998). The acceptance and use variables are two essential variables in order to measure the success of a system in application of information systems.

Venkatesh et al., (2003) suggested UTAUT after deep reviewing for eight theories of technology acceptance, which are: The Theory of Reasoned Action (TRA), The Technology Acceptance Model (TAM), The Motivational Model (MM), The Theory of Planned Behavior (TPB), A Combined Technology Acceptance Model/Theory of Planned Behavior (C-TAM-TPB), The Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT), Then developed UTAUT as A robust model provides a theoretical fundamental for technology adoption and an explanation of IT use behavioural intention (Venkatesh et al., 2003). UTAUT includes five main constructs, are (Venkatesh et al., 2003):

1. Performance Expectancy: refers to the degree of individuals beliefs that using a certain technology will aid them to refine their job performance (Sair & Danish, 2018).
2. Effort Expectancy: refers to the degree of the easiness associated with using a particular system or technology (Badan & Igeria, 2018).
3. Social Influence: refers to the degree that the individual realizes that the people who are influencers for him recommend him to use technology (Alraja, 2016).
4. Facilitating Conditions: refers to the degree that the individual believes that the technical and organizational infrastructure is available to prop the usage of systems (Attuquayefio & Addo, 2014).

3. Study Importance

1. The study determines the factors which influence the behavioural intention of students to accept and use google classroom, in order to focus on these factors in the educational process (e-learning) to make sure its success.
2. The study is the first in using of the unified theory of acceptance and use of technology (UTAUT) as an indispensable model to understand the affecting factors that contribute to predicting and influencing the behavioural intention of University of Mosul students to use Google Classroom application in e-learning.

3. This study evaluates the adoption of google classroom as an official platform for e-learning to recommend it to be used in other educational institutions, especially in Iraqi Universities.

3. Study Framework and Hypotheses

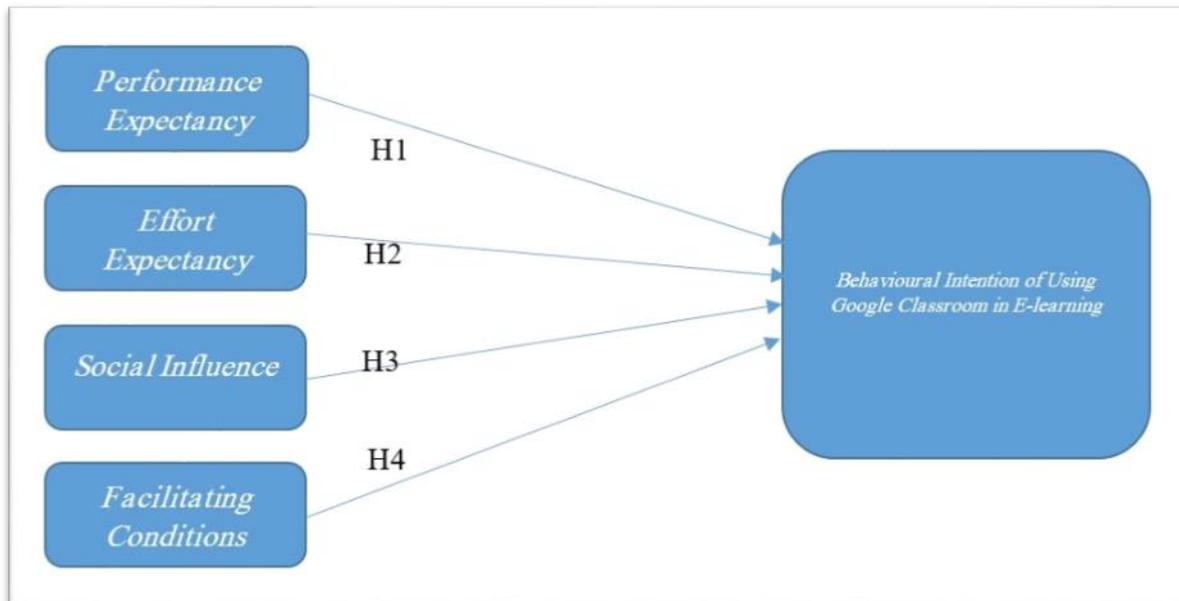


Figure 1. Study Framework and Hypotheses

The study depends on a set of hypotheses, are:

- H1: There is a significant effect for the *performance expectancy* on the behavioural intention of using Google Classroom application in e-learning by University of Mosul students.
- H2: There is a significant effect for the *effort expectancy* on the behavioural intention of using Google Classroom application in e-learning by University of Mosul students.
- H3: There is a significant effect for the *social influence* on the behavioural intention of using Google Classroom application in e-learning by University of Mosul students.
- H4: There is a significant effect for the *facilitating conditions* on the behavioural intention of using Google Classroom application in e-learning by University of Mosul students.

4. Methodology

4.1 Sampling

The targeted population of the study are University of Mosul students in Iraq who have used Google Classroom application in their learning with the total informants of 417 basing on University of Mosul students are 46136 (<https://www.uomosul.edu.iq/>), so the informants should be 381 (Krejcie&Morgan, 1970). The survey was fulfilled electronically using google forms to get much of responses form the informants, that takes over two months. However, with data cleaning and filtering the researcher obtained 396 which were valid and useful to carry out the purpose of the study. The questionnaire had five-point scaling Likert so that the informants can be able to respond to the different questions provided. The informant's demographics were summarized in table 1 below, which presents the number of students, gender, different departments and levels, years of using internet. The targeted informants were namely: undergraduate and postgraduate. The questionnaires were designed basing on the selected factors namely: Performance Expectancy, Effort Expectancy, Social Influence, Facilitating

Conditions, and finally the effect of Behavioural Intention on Using Google Classroom in E-learning.

Table 1. Informants' Demographics

	Variable	Frequency	Percent %
Gender	Male	271	68.4
	Female	125	31.6
Age (By years)	18-23	272	68.68
	24-29	74	18.68
	30-35	33	8.33
	+36	17	4.29
Education	Bachelor	343	86.61
	High-Diploma	21	5.30
	Master	27	6.81
	Doctorate	5	1.26
Experience of Internet Using (By years)	1-5	113	28.53
	6-10	256	64.64
	+11	27	6.81
Experience of Using Google Classroom (By years)	-1	179	45.20
	1-4	213	53.78
	5+	4	1.01

4.2 Testing of Hypothesis

The results of hypothesis testing are presented in the Table 2: performance expectancy of the technology had a significant effect on behavioural intention of using google classroom in e-learning as it is shown in the table ($\beta = 0.266$, $p > 0.016$), so hypothesis 1 was accepted. moreover, effort expectancy also had a significant effect on the behavioural intention of using google classroom in e-learning as it was ($\beta = 0.720$, $p > 0.000$), so hypothesis 2 was accepted. while, social influence had no significant effect on the behavioural intention of using google classroom in e-learning ($\beta = 0.093$, $p < 0.384$), so hypothesis 3 was rejected. last but not least, facilitating conditions had a significant effect on behavioural intention of using google classroom in e-learning, as ($\beta = 0.651$, $p > 0.000$); so hypothesis 4 was accepted.

Table 2. Hypothesis Testing

Hypothesis	Standardized regression weight	CR	P	Result
PE → BI of Using GC in E-learning (H1)	0.266	2.528	0.016	Accepted
EE → BI of Using GC in E-learning (H2)	0.720	5.925	0.000	Accepted
SI → BI of Using GC in E-learning (H3)	0.093	0.928	0.384	Not accepted
FC → BI of Using GC in E-learning (H4)	0.651	5.631	0.000	Accepted

4.3 Correlation

Table 3. Correlation

	BI of Using GC in E-learning	PE	EE	SI	FC
BI of Using GC in E-learning	1	.377**	.354**	-.239**	.227**
PE	.377**	1	.624**	.503**	.451**
EE	.354**	.624**	1	.615**	.496**
SI	-.239**	.503**	.615**	1	.615**
FC	.227**	.451**	.496**	.615**	1

Table 3. shows the relationships between independent factors and dependent factors. Furthermore, we notice that the strongest relationship is between *Performance Expectancy* and *Behavioural Intention of Using Google Classroom in E-learning* as it is (0.377). More, the second strongest relationship is between *Effort Expectancy* and *Behavioural Intention of Using Google Classroom in E-learning* was positive, as it reached (0.354). Also, the relationship between *Facilitating Conditions* and *Behavioural Intention of Using Google Classroom in E-learning* was positive, it reached (0.277). In contrast, the relationship between *Social Influence* and *Behavioural Intention of Using Google Classroom in E-learning* was negative, as it is (-0.239).

5. Conclusions

After studying the affecting factors on behavioural intention of using google classroom in e-learning, we found that: there is an effect of performance expectancy on behavioural intention of using the technology, resulting from the ease and simplicity of using this technology in learning, additionally, this technology allows to use media in lecturing to make the lectures easier and more understandable. Also, the effort expectancy has an effect on behavioural intention of using the technology; this is due to the students 'awareness of the importance of technology in reducing effort to a minimum, as they get their learning at home without going to their university, in addition to doing their tasks and homework and submitting them through this technology. Furthermore, facilitating conditions has an effect on behavioural intention of using google classroom because the technology in general has enforced itself on all people, where about most people use smart phones, smart TVs, computers and technological devices to access to internet anywhere and anytime, especially after the advent of 3G and 4G technology, so the student can access to the classroom by using his device which is connected to internet easily. In contrast, social influence has negative effect on behavioural intention of using the technology; this is due to students who tend to use technology voluntarily and not compulsorily, as after the Corona pandemic, this technology was imposed on students to complete their studies, which led to their rejection of the idea of e-learning and e-exams, in addition to the fact that they had not used this technology previously, as well as, they prefer to use social media networks as a platform of e-learning due to they use to use it mainly.

References:

- Aboud, et al, (2008). The reality of e-learning and computer systems and its impact on learning in Iraq, *Journal of Baghdad College of Economic Sciences University*, Volume (7), 278-279.
- Alraja, M. N. (2016). The effect of social influence and facilitating conditions on e-government acceptance from the individual employees' perspective. *Polish Journal of Management Studies*, 14(2), 18–27. <https://doi.org/10.17512/pjms.2016.14.2.02>
- Al-Adely, Umaima H., 2007, e-learning: its benefits, obstacles of its spread, and the possibilities of its application locally, *Journal of Education College*, Volume (2), 749-767.
- Arkorful, V., & Abaidoo, N. (2015). The role of e-learning, advantages and disadvantages of its adoption in higher education. *International Journal of Instructional Technology and Distance Learning*, 12(1), 29-42.
- Attuquayefio, S. N., & Addo, H. (2014). SpringerLink - BioPsychoSocial Medicine, Volume 1, Number 1. *International Journal of Education and Development Using Information and Communication Technology*, 10(3), 75–86. <http://www.springerlink.com/content/q673t8h540267411/>
- Badan, U. N. O. F. I., & Igeria, N. (2018). Performance expectancy, effort expectancy, and facilitating conditions as factors influencing smart phones use for mobile learning. *Interdisciplinary Journal of E-Skills and Lifelong Learning*, 14, 095–115.
- Dhaw, Salah A., & Al-Musraty, Salema M., (2020). Challenges of applying e-learning in Libyan educational institutions through crises (Corona pandemic) "theoretical study: the first virtual international scientific conference on: the corona pandemic: economic and political reality and the future of the Mediterranean Basin Countries. University of Sebrata.
- Dillon, A., & Morris, M. (1996). User acceptance of information technology: Theories and models. *Annual Review of Information Science and Technology*, 31 (pp. 3-32). Medford, NJ: Information Today.
- Gong, M., Xu, Y. & Yu, Y. (2004). An enhanced technology acceptance model for Web-based learning. *Journal of Information Systems Education*, 15(4), 365-373.
- Krejcie, R. & Morgan, D. (1970), Determining sample size for research activities, *Educational and Psychological Measurement*, 30, 607-610.
- Nizal, I., Shaharane, M., & Jamil, J. M. (2016). *Google classroom as a tool for active learning*. August. <https://doi.org/10.1063/1.4960909>
- Sair, S. A., & Danish, R. Q. (2018). Effect of performance expectancy and effort expectancy on the mobile commerce adoption intention through personal innovativeness among Pakistani consumers. *Pakistan Journal of Commerce and Social Science*, 12(2), 501–520.
- Shaharane, I. N. M., Jamil, J. M., and Rodzi, S. S. M., (2016), Google Classroom as a Tool for Active Learning, *Proceedings of the International Conference on Applied Science and Technology 2016 (ICAST'16)*.
- Sukmawati, S., & Nensia, N. (2019). The Role of Google Classroom in ELT. *International Journal for Educational and Vocational Studies*, 1(2), 142–145. <https://doi.org/10.29103/ijevs.v1i2.1526>
- Tabak, F., & Rampal, R. (2014). Synchronous e-learning: Reflections and design considerations. *International Journal of Education and Development Using Information and Communication Technology*, 10(4), 80–92.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly: Management Information Systems*, 27(3), 425-478