The Effect of E-Learning on Academic Achievement

among Students of the Accounting Program

in Public Universities in the Kingdom of Saudi Arabia

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Abstract

This research aimed to understand the impact of e-accounting education on the academic achievement of students of the Bachelor of Accounting Program at The College of Business and Economics at Qassim University. The importance of this research lies in the need to understand the effects of e-learning, its contribution to accounting education, and its effect on the academic achievement of accounting students. This research was conducted by analyzing the academic data of the students for the period from 2019 to 2020. In addition, the research used the academic reports to evaluate the electronic teaching process in accounting department, to understand the impact of e-learning on the educational process. A descriptive analytical approach was employed through the review of previous studies in the fields of e-learning and accounting education. Moreover, a comparison was conducted between the students' achievement in traditional learning in 2019 and in e-learning in 2020 using the analysis obtained from Statistical Package for Social Sciences (SPSS). The results of the research proved that e-learning has positive effect on the academic achievement of students of the Bachelor of Accounting Program at Qassim University. The research recommends to include the e-learning system in the accounting department at Qassim University, and to integrate it with traditional education in order to develop the accounting education.

Keywords: Kingdom of Saudi Arabia, e-learning, accounting education, academic achievement, students, accounting program, public universities, Qassim University

1. Introduction

1.1 Background of the Research

In light of the recent developments in the educational field, e-learning has grown aggressively, while the growing interest in various means of technology has become a powerful and effective influencing factor. E-learning is one of the most important developments in education in the recent years. With the emergence of the COVID-19 pandemic, a reliance on e-learning and the application of distance education has become prevalent. Moreover, the Saudi Arabia Vision 2030 states, "We look forward to a brighter future, we have capabilities that will double their role and increase their contribution, and it is time to build a modern society and prepare generations that deserve to be proud of" (Qasim, D, 2018). One of the most important objectives of the Saudi Arabia Vision 2030 is pursuing the digital transformation in various fields, the most important of which is the field of education to support the progress of students and teachers. The educational vision revolutionized the education sector as it became necessary to develop the educational process and increase educational effectiveness, efficiency and quality, as well as to reduce the factors and constraints affecting education and the academic performance of students in the Kingdom of Saudi Arabia. This is achievable through the means that support the modern educational process, the most important of which is the e-learning system. The E-learning system aims to use a new method in education and the transition from the stage of indoctrination to the stage of creativity, interaction, and achievement. (Qasim, A, 2018).

Accounting education is of great importance because of the continual demand for accountants, as both accounting education and the accounting profession complement each other. Accounting education is the cornerstone of the accounting profession because of its scientific knowledge, technical skills, ethics and professional behaviors.

Therefore, accounting education is a necessity and must be constantly developed and updated in line with modern trends to qualify students in accounting programs, to meet the requirements of the labor market. This includes the development of methods such as the use of e-learning in accounting practices and processes, which significantly and positively affects the quality of the accounting profession, students, and professional staff. Recent trends in accounting education have increased the interest in software such as Blackboard, Zoom, and Microsoft Teams among teaching and the accounting rehabilitation programs at universities. Additionally, social media platforms such as YouTube and Telegram, are also used to increase the efficiency and effectiveness of students' performance and academic achievement to a high level, that matches the level of traditional education and achieves the intended goal of education.

This research is therefore intended to highlight the e-learning process of students of the Bachelor of Accounting Program at College of Business and Economics at Qassim University.

1.2 Research Problem and Research Question

With the emergence of COVID-19, the World Health Organization (WHO) recommended all countries to stop all activities and services involving mass crowds, including traditional forms of education. Saudi Arabia responded to this recommendation and shifted its education structure to remote e-learning for all educational institutions, including schools to universities.

There is a need to investigate the impact of e-learning on the academic achievement of students of the Bachelor of Accounting Program at College of Business and Economics at Qassim University, through comparing e-learning and the traditional education. The research problem can be formulated in the following question: How does e-learning affect academic achievement among students of the Bachelor of Accounting Program at the College of Business and Economics at Qassim University?

1.3 Research Objectives

This research seeks to achieve the following objectives:

(1) Highlighting the impact of e-accounting education on the academic achievement of students of the Bachelor of Accounting Program at College of Business and Economics at Qassim University.

(2) Shed light onto the effects of e-learning and traditional education on the academic achievement of students of the Bachelor of Accounting Program at College of Business and Economics at Qassim University.

(3) Identifying the important requirements for increasing the efficiency and effectiveness of accounting education by taking advantage of e-learning methods.

1.4 The Importance of the Research

This research is of practical importance in supporting the Kingdom's Vision 2030 regarding digital transformation. Since the current educational ecosystem urges the need to introduce e-learning methods, this research demonstrates their impact in the field of accounting education, specifically in the academic achievement among students in accounting education programs at public universities in Saudi Arabia to achieve the main goal of education.

The research is also of scientific importance as it increases knowledge in the field of education, and resolves the lack of Saudi studies on e-learning which is due to the novelty of this type of education in Saudi universities, and in education in general. The research does this by providing recommendations to academic researchers, students, faculty members in accounting departments, and professional staff in the field of accounting.

1.5 The Key Terms of the Research

Semester Grade Point Average (SGPA): It is a method used to measure the students' academic grade for a single semester. It is calculated on the basis of the weight of the grade from 5.00.

Cumulative Grade Point Average (CGPA): It is a method used to evaluate the students' academic performance and achievement throughout their entire academic years including all semesters. It is calculated by taking SGPAs for each semester and dividing them by the number of semesters.

E-learning: It is also called a web-based training or electronic learning, which is defined as "learning that is enabled electronically" (Abbad et al., 2009). It is a learning system that enables teachers and students to use digital resources during their educational journey anywhere and anytime.

2. Literature Review

The impact of e-learning on students' performances and academic achievements gained considerable attention from researchers in several countries. The results of those studies will be used to complete the research aspects of this topic.

The study of Khatoon, (2022), "Effectiveness of E-Learning on Academic Performance of Intermediate Students of Jazan University of Saudi Arabia", investigated the effectiveness of electronic resources on the academic and learning environment of intermediate students of Jazan University of Saudi Arabia. An Achievement Scale test was used as a tool to assess the achievement of the Class-IX school students with the use of the e-learning program. The findings showed that there was no significant difference in the achievement of students towards e-learning program based on gender after (post-test) the conduction of e-learning program, while there was a significant difference in the achievement before (pre-test) and after (post-test) e-learning program among students in general, (Khatoon, 2022).

The study of Radaideh, Sisodia, & Mathew, (2022), "Managing university e-learning environments and academic achievement in the United Arab Emirates: An instructor and student perspective", explored the effect of the e-learning environment, e-learning adoption, digital readiness, and students' attitudes towards e-learning on academic achievement. The study focused on a much-neglected cultural context, Gulf Cooperation Council countries (GCC), because students' readiness as well as institutions and professors' endowments greatly varied within countries and among universities. Moreover, the study investigated the potential indirect effects of the variables on academic achievement. Due to the fact that all the four years' universities' student's experiences are summarized in one number that determines their academic achievement, GPA is stablished as a reasonable summary of students' academic achievement. Data was collected using a sample size of 200 undergraduate students from the University of Science and Technology Fujairah (USTF) in the United Arab Emirates. The research findings showed that by aligning students and educators' goals to develop a positive and supportive e-learning environment, institutions will adapt and encourage Academic engagement and promote students' academic achievement (Fernandez et al., 2022).

The study of Zubanova, Fedorova, & Sivakova, (2021), "Education Policy: The Impact of E-learning on Academic Performance" explored the correlation between e-learning and the academic achievement of students in higher learning. The data was collected from 150 authors' observational studies before and during the COVID-19 pandemic. A survey of distant and students was used. The findings of the study indicated that Information and Communications Technology (ICT) had a statistically positive effect on the academic success of students in universities. Therefore, the study suggested that the value of e-learning as a way of teaching and learning should be understood by higher educational organizations (Zolochevskaya et al., 2021).

The study of Ebaid, (2020), "Accounting Students' Perceptions on E-learning during the COVID-19 Pandemic: Preliminary Evidence from Saudi Arabia", sought to discover the views of accounting students in e-learning, which was applied as an alternative to the traditional education system in Saudi universities during the COVID-19 pandemicThis study used a cross-sectional survey to collect field data on accounting students' perceptions of e-learning at Umm Al-Qura University in Saudi Arabia. The results of the study revealed that the majority of accounting students expressed a lack of benefit from e-learning in terms of increasing flexibility in their study of accounting courses, facilitating their study of accounting courses, improving their communication with teachers, enhancing their skills in communicating with other students, or their ability to solve problems related to studying accounting courses. Moreover, the majority of the students agreed that the most important drawbacks of e-learning are lack of human communication, technical problems, and excessive reliance on computers (Ebaid, 2020).

The study of Kedzior, Krasodomska, & Herdan. (2020), "Embedding E-learning in Accounting Modules: The Educators' Perspective", focused on identifying the benefits and disadvantages of applying e-learning in teacher accounting units. The results of the study showed that e-learning was not widely used by accounting academics in Poland. This study demonstrated the efficiency of teaching through e-learning among lecturers who decided to use e-learning compared to traditional classes (Grabinski et al., 2020).

The study of Octavia, Herawati, & Sinaga, (2019), "Culture, Environment and E-learning as Factor in Student Performance", aimed to solve the problem of decreasing student academic performance, which is influenced by satisfaction in using e-learning, the quality of e-learning systems, environment, and organizational culture through a case study of management accounting study programs. The research method used was verification by using structural equational modeling test with partial least square approach. The primary data was obtained from questionnaires designed by researchers. Respondents were students in management accounting courses with the number of samples using the power analysis. The results of the study answered that there was no evidence of environmental uncertainty, organizational culture towards e-learning. But e-learning affected user satisfaction, while the user satisfaction

influenced student academic performance. The results of the study are expected to provide input for managers to consider the application of e-learning system learning in management accounting courses (Rachmawati et al., 2019).

The study of Al-Harbi & Lally, (2017), "Adoption of E-learning in Saudi Arabian University Education: Three Factors Affecting Educators", presented literature in relation to factors influencing the effective application of e-learning in Saudi Arabia. In total, 32 related studies were identified in this study. Based on this literature review, it was concluded that time constraints, lack of training, and lack of institutional support were key factors influencing faculty decisions on the use of ICT in teaching practice. Reducing the workload of faculty, in addition to providing adequate and practical training and institutional support to academics, is one of the most important solutions necessary for the successful application of technology in education (Al-Harbi & Lally, 2017).

The study of Al-Sharif (2016), "Shaqra University Students' Attitudes toward E-Learning", identified students' attitudes towards e-learning. The study sample consisted of 366 students, which were studying in undergraduate programs. For the sake of achieving the objectives of the study, the researcher used descriptive analytical method, as well as used scale to measure the trend of e-learning consisted of 28 phrases. The study results showed that the students' attitudes toward e-learning were positive. Also, there were no statistically significant differences in the students' responses to learning depending on the specialization variable i.e., scientific or literary. Moreover, there were statistically significant differences in favor of females at the level of 5% in the students' responses to e-learning in terms of gender (i.e., male or female). The researcher recommended the need to set training sessions for faculty members in the field of web design courses, as well as the necessity of activating e-learning technologies in teaching undergraduate courses (Al-Sharif, 2016).

The study of Adjila & Guenaya (2016), "The Contribution of Electronic Accounting Education to the Development of the Skills of the Students of Accounting Departments", identified the contribution of e-accounting education to the development of the skills of students in Algeria's accounting departments by highlighting the role of Information and Communication Technology (ICT) in the development of students' intellectual, technical, personal, administrative, and communication skills. The study found that e-learning contributes to increased interaction between students within the classroom. Despite the speed of access to information it offers, as well as its ability to help students solve accounting problems in an innovative way, this method of education suffers from technical and material problems (Adjila & Guenaya, 2016).

2.1 Reviews of Previous Studies and the Contribution of the Current Research

The research has widely benefited from previous studies in terms of theoretical approaches, research methods, research hypothesis, and research tools. This research is similar to Ebaid (2020) and Al-Harbi and Lally (2017), which were conducted in Saudi Arabia. Moreover, Buyud (2019), Gana (2018) in terms of research methodology, more specifically in using the analytical descriptive method. This research is also similar to most previous studies in terms of the survey research tool.

The current research will distinguish from other relevant studies by focusing specifically on the impact of e-learning on the academic achievement of students of the Bachelor of Accounting Program at College of Business and Economics at Qassim University. The research will be using and analyzing students' academic data from their academic transcripts to reach accurate and true results, comparing academic student grades and achievements before and after the application of e-learning depending on the teaching method. This research will also contribute to the current studies related to e-learning and shine new light on the importance of e-learning and its effect on the students' achievements. It will become a base to highlight how e-learning is a crucial system that will improve the accounting education.

2.2 Research Hypotheses

H1: There are statistically significant differences between the average academic grade among accounting department students who have studied through e-learning and the average academic grade among accounting department students who have studied through traditional education depending on the teaching method.

H2: There are statistically significant differences between the average academic grade among accounting department students who have studied through e-learning and the average academic grade among accounting department students who have studied through traditional education on case studies depending on the teaching method.

H3: There are statistically significant differences between the average academic grade among accounting department students who studied through e-learning and the average academic grade among accounting department students who studied through traditional education depending on gender.

H4: The ease of use and understanding of e-learning has an effect on student academic achievement.

H5: The ease and improvement of communication with faculty members and with other students has an effect on student academic achievement.

H6: The improvement of students' problem-solving ability has an effect on student academic achievement.

H7: Increasing the interaction of students in virtual lectures has an effect on student academic achievement.

2.3 Data and Sample

The research sample consists of (2410) Bachelor students of Accounting Program at College of Business and Economics at Qassim University. The research covers the period from 2019 to 2020; a year before the pandemic and a year during the pandemic.

2.4 Data Collection Method

Primary Sources: The accounting students' Semester Grade Point Average (SGPA), Cumulative Grade Point Average (CGPA), case studies' grades, and the courses' evaluation questionnaire provided by Accounting Department at the end of each semester for each subject collected from the accounting department and students' affairs. The data analysis will use Microsoft Excel and Statistical Package for Social Sciences (SPSS).

Secondary sources: Theoretical and empirical studies gathered from books, articles, researches, and published periodicals.

2.5 Data Analysis

In order to examine the effect of e-learning on students' achievement, a comparison is conducted between the students' achievement in traditional learning in 2019 and e-learning in 2020. The achievement of accounting students has been studied and analyzed through CGPA as a main variable, which is affected by SGPA. SGPA is affected by students' grades in case studies and also by the results of the courses' evaluation questionnaire, especially the part related to the teaching method. Therefore, a PLS-PM approach is used to statistically analyze the multiple relationships among collected data, which will enable us to figure out and assess the multiple complex relationships between variables (Monecke & Leisch, 2012). The Statistical Package for Social Sciences (SPSS) is used to analyze, interpret, and compare the averages of the collected.

The statistical analysis results of the research, processed using the SPSS software, which includes descriptive statistics, T-test, ANOVA, Eta Squared, Levine's Test for Equality of Variances, and the correlation among variables.

3. Results

3.1 Descriptive Statistics

To study the impact of the teaching method on Cumulative Grade Point Average (CGPA) and Semester Grade Point Average (SGPA), a questionnaire was provided to students by the accounting department for the years 2019 and 2020; where 2019 represents the traditional teaching method and 2020 represents the remote electronic teaching method due to the COVID-19 pandemic.

Descriptive statistical analysis quantitatively describes or summarizes the collected data in a meaningful way. To test the hypotheses, descriptive statistics were used, including frequencies, percentages, mean, standard deviation, and figures. Also, the independent sample T-test and the One-Way ANOVA were used to investigate the relationship between variables and to compare and find out the differences of mean between the two years. Descriptive statistics were also conducted to investigate the direct and indirect effect of teaching method on the students' achievement. For clarification, the "indirect effect" is the effect of teaching method on the academic grade (SGPA) and then on the academic achievement (CGPA). The effect of teaching method on the academic achievement (CGPA) is based on the effect on case studies and then on the academic grade (SGPA).

To examine the hypotheses, the teaching method should be investigated through the questionnaire provided to students by the accounting department. It was divided into three parts, part of which is concerned with the teaching method. The courses' evaluation questionnaire adapts to all students at the end of every semester to find out the students' perceptions. The first axis is related to the beginning of the course; the basic lines of the course. The second axis is related to what happened during the course; the teaching method. The third axis is related to course evaluation; the benefits gained from the course. The fourth axis is related to overall assessment; the students' satisfaction. This questionnaire was employed using the 5-point Likert scale ranging from 'Strongly Agree' to 'Strongly Disagree' in which the targeted respondents rate how strongly they agreed with each statement. The percentage of males was 50.4%, while the percentage of females was 49.6%.

Descriptive statistics were conducted to investigate the questionnaire.

The mean of teaching method was highly increased from 2019 to 2020, as shown in the above table. So, it can be said that all the variables compared above have increased approximately the same.

The teaching method depending on the gender has statistical significance F= 7.653 and Sig. = 0.006 before the application of e-learning, and F= 8.585 and Sig. = 0.003 after the application of e-learning. Moreover, the difference of means between 2020 and 2019 is 0.2451, which is in favor of the year 2020.

Since the questionnaire expresses personal results that reflect the students' opinions, it was not possible to rely entirely on these results. For this reason, the case studies for the two years were compared in addition to the academic grades. Due to the impossibility of obtaining the full sample, the number of the sample was reduced to 94 male and female students.

The results of the analysis were as follows.

The statistics show that SGPA has slightly decreased, while CGPA has barely decreased.

There is a statistical significance between the academic achievement (CGPA) and academic grade (SGPA) of for the years 2019 and 2020, as the significant is less than 0.05.

The mean of SGPA2019 was 4.1423 with a standard deviation equal to 0.74315, while the mean of SGPA2020 is 3.6796 and the standard deviation is 1.01906. Similarly, the mean of CGPA2019 is 3.9844 with a standard deviation equal to 0.82230, while the mean of CGPA2020 is 3.9279 and the standard deviation is 0.81925. Hence, the mean of SGPA in 2020 has been declined compared to the mean of 2019.

By using a Period Simple Test to compare the means of SGPA and CGPA between two different periods, illustrates that the difference between the two means is 0.46271 and 0.05649 with a standard deviation equal to 0.52360 and 0.12315 respectively. Therefore, these results are for the benefit to 2019.

Critical thinking, team-work, oral communication, written communication, professional ethics, cultural diversity, and social responsibility are the outputs measured by case studies.

Based on the statistics shown, there is a sharp increase in written communication by 5.6412. The professional ethics has doubled from 4.3514 to 8.4836, while social responsibility and cultural diversity have considerably decreased by 2.8305 and 1.9653 respectively. The oral communication, team-work, and critical thinking have slightly decreased by 0.0297, 1.4429, and 1.1908 respectively.

By using a Period Simple Test to compare the means of the variables between two different periods, illustrate that the difference between the case studies means in 2019 and 2020 is 0.68340. The overall case studies' outputs grades have been increased in 2020 from 8.7966 to 9.4800. Therefore, these results benefit the 2020 year.

These results indicate that the students' performance in case studies assignments was relatively better in 2020. It reflects that the majority of the students tend to be comfortable in solving their assignments by seeking the help of some specialized or non-specialized people, or by searching on websites. In addition, they have extra time to solve these assignments, in contrast to solving it during the class.

The case studies were statistically significant and all the related seven scales have significance less than 0.05, except team-work and oral communication, as their significance are 0.123 and 0.793 respectively.

3.2 Statistical Results Discussion for Hypotheses Testing

3.2.1 Result for Testing Hypotheses 1

H1: There are statistically significant differences between the average academic grade among accounting department students who have studied through e-learning and the average academic grade among accounting department students who have studied through traditional education depending on the teaching method.

The students' academic grades and achievements through traditional learning are better than e-learning, as the SGPA is 4.1423 and 3.6796 respectively, and the CGPA in 2019 is 3.9844 and in 2020 is 3.9279.

An ANOVA test was used to compare the means of students' academic grades (SGPAs) depending on the teaching method. There is a statistical significance differences between the students' academic grade in 2019 and 2020 depending on the teaching method, as the significance is less than 0.05.

The mean of SGPA and CGPA are -0.46271 and -0.05649 respectively, and it is for the benefit for traditional learning.

3.2.2 Result for Testing Hypotheses 2

H2: There are statistically significant differences between the average academic grade among accounting department students who have studied through e-learning and the average academic grade among accounting department students who have studied through traditional education on case studies depending on the teaching method.

There is a statistical significance between students' average academic grades who have studied through e-learning and traditional learning depending on the teaching method, as the significance of SGAP is less than 0.001. On the contrary, the students' average academic achievement and case studies depending on the teaching method are statistically not significant, as the significance are equal to 0.941 and 0.076 respectively.

3.2.3 Result for Testing Hypotheses 3

H3: There are statistically significant differences between the average academic grade among accounting department students who studied through e-learning and the average academic grade among accounting department students who studied through traditional education depending on gender.

The aim of this hypotheses is to identify who has more desire for e-learning, i.e., males or females? The descriptive statistics in the below table 28 shows that females are more desired and interested on e-learning than males. For instance, the mean of SGPA in 2019 for females is 4.4650 and for males is 3.5170, while the mean of SGPA in 2020 for females is 4.1861 and for males is 2.6981. Therefore, the SGPA for females is higher than males. Moreover, the mean of CGPA in 2019 for females is 4.3981 and for males is 3.1961, while the mean of CGPA in 2020 for females is 4.3403 and for males is 3.1286. Hence, the CGPA for females is increased almost the double compared to males. These results indicate that female students tend to e-learning, unlike male students, who tend to prefer traditional education more. Also, the increase of the mean for males in 2019 confirms the results.

Levine's test of equality of variances (2019-2020) is used in SPSS to evaluate the statistical assumption of homogeneity of variance between variables. The results indicate that the assumption of homogeneity of variance has been met, as the Sig. is more than 0.05. Additionally, all variables are statistically significant, as the significance is less than 0.05.

To test H4, H5, H6 and H7, Eta squared is used as clarified below. Eta squared ($\eta2$) is a common measure of effect size used in analyses of variance (ANOVAs) and analyses of covariance (ANCOVAs)".

If the $\eta2$ is between 0.01 and 0.06, it indicates a small effect, Similarly, if it is between 0.06 and 0.11, it indicates a medium effect. Above 0.11, it will indicate a large effect.

3.2.4 Result for Testing Hypotheses 4

H4: The ease of use and understanding of e-learning has an effect on student academic.

The statistics represents the effect of using the technology on students' academic geode and achievement. The $\eta2$ of SGPA 2019 is 0.032 and SGPA 2020 is 0.072. This indicates that the use of technology has a small and medium effect on the students' academic grades and achievement respectively. Regarding CGPA, the $\eta2$ in 2019 is 0.045, and in 2020, it is 0.079. This indicates that the use of technology has a small effect on the students' academic grades and achievement in 2019 and medium effect in 2020.

The $\eta2$ of SGPA and CGPA have been slightly increased from 2019 to 2020 by 4% and 3.4% respectively, which is for the benefit of 2020. Accordingly, the use of e-learning has an effect on the students' academic grades and thus on the students' academic achievement.

3.2.5 Result for Testing Hypotheses 5

H5: The ease and improvement of communication with faculty members and with other students has an effect on student academic achievement.

The results show the analysis' result for the fifth hypotheses, which represents the effect of team-work skills and the communication between students and faculty members on the students' academic grades and achievements. The $\eta2$ of SGPA 2019 is 0.034 and SGPA 2020 is 0.098. Therefore, it indicates that the ease of communication between tutors and students has a little effect on students' academic grades in 2019, while it has a moderate effect in 2020. The $\eta2$ of CGPA 2019 is 0.030, while the $\eta2$ of CGPA 2020 is 0.091. Consequently, it indicates that the ease of communication between tutors and students has a small effect on students' academic achievements in 2019, while it has a medium effect in 2020. Accordingly, $\eta2$ of SGPA and CGPA have been significantly increased from 2019 to 2020 by 6.4% and 6.1% respectively.

These results clarify that the smooth communication through technology and e-learning between faculty members and their students have an effect on the students' academic grades and achievements.

3.2.6 Result for Testing Hypotheses 6

H6: The improvement of students' problem-solving ability has an effect on student academic.

The results show the statistical analysis of the sixth hypotheses, which is related to the effect of the students' improvement in their abilities to think critically and solve the problems on their academic grades and achievement. In 2019, the η2 of SGPA is 0.025 and CGPA is 0.024. While in 2020, η2 of SGPA is 0.042 and CGPA is 0.040. According to these statistics, the improvement of students' ability to solve problems has a small effect on the students' academic grades and achievement in 2019 and 2020.

The η2 of SGPA has been increased from 2019 to 2020 by 1.7%, whilst the η2 of CGPA has been increased approximately the same as SGPA by 1.6%. Resultantly, the improvement of students' problem-solving ability has an effect on students' academic grades and achievement.

3.2.7 Result for Testing Hypotheses 7

H7: Increasing the interaction of students in virtual lectures has an effect on student academic.

The η2 of SGPA 2019 is 0.014, while the SGPA 2020 is 0.059. The η2 of CGPA 2019 is 0.008 and the η2 of CGPA 2020 is 0.047. Hence, increasing of students' interaction through e-learning has a small effect on the students' academic grades and achievement in 2019 and 2020.

Consequently, the η2 of SGPA has been significantly increased from 2019 to 2020 by 4.5%, in addition to the approximate increases of CGPA by 3.9%. As a result, increasing students' interaction in virtual classes has an effect on students' academic grades and achievement.

4. Discussion

The results of the statistics lead to the acceptance of all hypotheses as follows:

There are statistically significant differences between the average academic grade among accounting department students who have studied through e-learning, and the average academic grade among accounting department students who have studied through traditional education depending on the teaching method.

According to the statistics, the average academic grade among accounting department students who have studied through traditional education is better than the average academic grade among accounting department students who have studied through e-learning depending on the teaching method. This indicates that the result is in favor of traditional education. The reason for this may be because traditional education provides direct contact between the teacher and the students, in addition to the accurate and rapid follow-up of assignments. Also, discussions will be conducted and students' inquiries will be answered directly.

There are statistically significant differences between the average academic grade among accounting department students who have studied through e-learning and the average academic grade among accounting department students who have studied through traditional education on case studies depending on the teaching method.

Statistics results show that the average academic grade among accounting department students who have studied through traditional education is better than the average academic grade among accounting department students who have studied through e-learning depending on the teaching method. Also, the statistics demonstrate that the average of case studies, depending on the teaching method, is better for students who have studied through e-learning compared to traditional education. However, the difference is very little of about 0.14. This can be explained by the fact that e-learning provides many technologies and means that help students to choose in a way that suits their needs, which positively affects their academic achievement.

There are statistically significant differences between the average academic grade among accounting department students who have studied through e-learning and the average academic grade among accounting department students who have studied through traditional education depending on gender.

The results indicate that there is an apparent difference in favor of females, as females have an interest in e-learning and self-reliance. The reason may be that females have previous experience in using computers and various technical means. In fact, even with traditional education, females have previously communicated electronically with supervisors via electronic messages.

The ease of use and understanding of e-learning has a medium effect on student academic achievement.

The multiplicity of modern electronic educational platforms and their ease of use have an effective impact on student achievement. Blackboard, Zoom, and other means are very easy to understand and use, especially in our current

technologically advanced era. Besides that, the course content will be well-organized and easy to access from anytime, anywhere.

The ease and improvement of communication with faculty members and with other students has a medium effect on student academic achievement in 2020 and a small effect in 2019.

Interaction between students and faculty members helps students get periodic feedback and encouragement, which occurs easily with e-learning. This influences the learning process and then the students' academic achievements. Therefore, the researcher recommends training faculty members to be able to perform the e-learning process in the best way. Technology enhances communication skills among students, in addition to sharing and discussing their different ideas, benefiting from each other's experiences, participating in group projects using modern technologies, and providing opportunities for new ways of learning. The research results indicate that e-learning improves communication with instructors and other students, which leads to better learning processes and outcomes.

The improvement of students' problem-solving ability has a small effect on student academic achievement.

Students can use various programs that help them understand and simplify information. Moreover, they can learn skills that the instructor cannot impart to them, which contributes to the development of the students' skills, and thus the students' abilities to solve all problems. The results indicate that e-learning improves students' abilities to solve problems.

Increasing the interaction of students in virtual lectures has a small effect on student academic achievement.

Communication with other students through e-mails or chat groups will enable students to exchange information and help each other in assignments, projects, and the preparation for exams, which affect their academic achievements positively. The research results indicate that e-learning facilitates and increase interaction and communication with instructors and other students, leading to better learning process and outcomes.

These results add to the rapidly expanding field of e-learning and its effect on accounting education. The research findings provide several contributions to the current literature. Overall, e-learning is a crucial system and highly recommended to be implemented.

5. Recommendations

In light of the findings obtained, the research recommends to:

(1) Include e-learning in accounting education in the universities, in addition to the traditional learning.

(2) The research urges to establish clear plans for how to include digital learning in accounting curricula.

(3) There is a need to increase the qualification and training of faculty members, students, and all administrative staff in the accounting departments of Saudi Arabian universities on using e-learning tools.

(4) Providing devices and technological tools to develop e-learning.

(5) The awareness of e-learning includes conducting more researches in the same field, training courses, and workshops.

6. Limitations

This research has some limitations that should be taken into account when assessing the research results. In terms of population, the research is limited to Qassim University. The questionnaire consists of 2410 male and female bachelor students of Accounting Program at College of Business and Economics at Qassim University. Afterward, the sample had been decreased to 94 students due to the impossibility of obtaining the full sample for grades (CGPA & SGPA) and case studies.

Furthermore, the research also had time limits, i.e., the data was collected for the years 2019 and 2020 only. The year 2019 represented the year the period in which traditional education was used, while 2020 represented the period during COVID-19 pandemic in which e-learning was used.

7. Future Research

E-learning is a crucial thing to be explored in the future researches. The research findings provide the following points for future research:

(1) The contribution of electronic accounting education to the development of the skills of the students of accounting department (in Saudi Arabia)

(2) e-learning and The Effectiveness of University Teaching Performance in Light of the Covid 19 Crisis "from The Teachers' Point of View" Case Study: Economics Faculties in Saudi Arabia Universities

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