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Student Perceptions of Teaching Quality in Face-to-Face and Online Accounting Courses, During the COVID-19 Pandemic in Saudi Arabia

Abstract

The COVID-19 pandemic forced many universities, including those in Saudi Arabia, to suddenly switch from face-to-face to online teaching, forcing them to adapt to online classes while ensuring the quality of teaching. This study aimed to determine whether the quality of face-to-face and online courses delivered to accounting students differs. Perceptions were captured through surveys of a sample of students.

The exploratory factor analysis and constructed perception index for each modality revealed no significant differences in the perceived quality of face-to-face and online teaching.

KeyWords: Accounting, Face-to-Face Teaching, Online Teaching, COVID-19, Saudi Arabia.

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أراء الطلاب حول جودة التعليم الحضوري والتعليم عن بعد لمقررات المحاسبة خلال جائحة كوفيد-19 في المملكة العربية السعودية

ملخص البحث

أجبرت جائحة كوفيد- 19 العديد من الجامعات، بما في ذلك جامعات المملكة العربية السعودية، على التحول بشكل مفاجيء من التعليم الحضوري إلى التعليم عن بعد، مما أجبرهم على التكيف مع الفصول الدراسية الافتراضية عن طريق الإنترنت مع ضمان جودة التعليم. وتهدف هذه الدراسة إلى تحديد ما إذا كانت هناك فروق بين جودة التعليم الحضوري والتعليم عن بعد لمقررات المحاسبة.

وقد تم جمع أراء الطلاب من خلال استطلاعات الرأي لعينة منهم. وأظهر تحليل العامل الاستكشافي ومؤشر الإدراك المركب لكل طريقة عدم وجود فروق ذات دلالة إحصائية في الجودة المدركة بين التعليم الحضوري والتعليم عن بعد.

الكلمات المفتاحية: المحاسبة، التعليم الحضوري، التعليم عن بعد، كوفيد-19، المملكة العربية السعودية

1- Introduction

The COVID-19 pandemic caused a global disruption in education, forcing many universities to switch from face-to-face to online teaching. This situation created many problems for teachers and students, who suddenly faced various challenges related to the availability of technical infrastructure, proficiency in digital skills, and new teaching strategies. This situation increased scholarly interest in the quality of face-to-face and online teaching.

In the last two years, numerous studies have examined the influence of the COVID-19 pandemic on education, especially the effects of the sudden change from face-to-face to online teaching, both in general and in specific courses. However, to my knowledge, very few studies have addressed how good "the quality of online teaching" has been in the Kingdom of Saudi Arabia (KSA) after the forced change in teaching modality imposed by the pandemic. This study contributes to exploring this knowledge gap by comparing students' perceptions of the quality of face-to-face and online Accounting teaching at one of the significant KSA universities. As a consequence of the above, this study aims to establish if there is any significant difference in the perception of students about the quality of accounting teaching between face-to-face and online courses.

Several decades of research examined teaching quality, though disagreements remain in several aspects. In this sense, this research makes several vital contributions in relation to the dimensionality of the construct, the use of student evaluations, the factor invariance of the questionnaires, the quantification of perceptions, and the quality of teaching modalities.

2- Theoretical framework

2-1 Accounting Teaching During the COVID-19 Pandemic

The COVlD-19 pandemic suddenly accelerated the gradual development process toward the digital paradigm (Borrego et al., 2020). According to Şova and Popa (2020), the COVID-19 pandemic created unexpected difficulties for companies. The functions and skills of professional accountants had to evolve to suit the digital environment so they could offer strategic advice that helps companies guarantee their continuity. Therefore, the accounting teaching

profession must rethink its curriculum to develop accountants with new digital skills and implement new teaching strategies (Borrego et al., 2020).

Due to the COVID-19 pandemic, universities worldwide have been forced to convert the face-to-face teaching model with digital elements into a new online learning model (Sarea et al., 2021). Therefore, accounting professors were challenged to change their approaches overnight in all aspects of their work: teaching, learning, assessment, student support, and research (Sangster et al., 2020). Authors also state that during this sudden transition to online learning, higher education institutions faced several challenges related to technical infrastructures, such as Internet access problems, bandwidth overload, instability of electrical power sources, and lack of proper teams among students. On the other hand, the abrupt transition did not allow teachers to properly prepare and develop their digital skills or teaching strategies, with the consequent lack of necessary competence. Therefore, the hypothesis could be abducted that the abrupt change in the accounting teaching model could have impacted its quality.

2-2 Quality of Accounting Teaching

According to Watty (2005), universities should be effective organizations that serve the purposes that society demands, such as remaining connected to their economic and cultural needs, operating under effective management, and being capable of providing flexible education that facilitates adaptation to a technologically and culturally changing environment. As universities provide services, they can implement the methods and techniques of quality management that these theories postulate.

Watty (2005) asserts that applying the theories of total quality management to higher education institutions can address these issues on three different levels: product quality (student learning), process quality (teaching management), and the institutional quality assurance system, that is, continuous improvement (academic excellence).

From the perspective of process quality, the quality of accounting teaching requires quality assurance in its control points, which are the curriculum, teacher, and teaching process (Okoli, 2018). Controlling the quality of the

curriculum implies planning how to carry out teaching activities and ensuring that they are managed with competence and efficiency to achieve the proposed objectives.

On the other hand, scholars extensively explored the quality and effectiveness of the teacher and the delivery of accounting teaching at a higher level. A suitable perspective to examine this construct is the well-known and widely disseminated summary, "Seven Principles for Good Effective Teaching Practices" written by Chickering and Gamson (1987), which is influenced by Constructivism. These principles emerged from a focus group conducted in 1986 consisting of researchers studying educational, organizational, economic, and political issues in higher education. These principles include all topics related to the quality of accounting teaching and are applicable to both face-to-face and online teaching (Mier, 2011). The seven principles postulated by Chickering and Gamson (1987) are: (a) encouraging contact between students and teachers, (b) developing reciprocity and cooperation among students, (c) using active learning techniques, (d) providing prompt feedback, (e) emphasizing time spent on tasks, (f) communicating high expectations, and (g) respecting diverse talents and ways of learning.

According to Chickering and Gamson (1999), the immediate and overwhelming acceptance of these principles following publication led to the development of the Inventory of Good Practices for Effective Education (Chickering and Gamson, 1999), which served as a foundation for the development of various questionnaires to measure teaching effectiveness. However, Achtemeier et al. (2003), Baldwin and Trespalacios (2017), and McLoughlin and Maor (2017) find that most of the widely used questionnaires do not capture all seven principles as they emphasize the measurement of some to the detriment of others. One exception is the questionnaire developed by Bangert (2006), called the "Student Evaluation of Online Teaching Effectiveness" (SEOTE), which aims to capture the seven principles. The psychometric properties of this questionnaire were tested extensively in various contexts, thus providing sufficient evidence of its validity and reliability in measuring the quality of online teaching (Bangert, 2006, 2008).

2-3 Research Hypothesis

Given that the COVID-19 pandemic produced a sudden transition from the face-to-face modality with progressive support of online elements to the absolute pre-eminence of the online modality in the delivery of accounting education, it is expected that there will be some impact on the quality of the accounting teaching delivery process, which may lead students to perceive a difference in the quality of accounting teaching between face-to-face and online courses. Therefore, the research hypothesis is

"H_0: There is a significant difference in the perception of the quality of accounting teaching between face-to-face and online courses."

3- Methodology

3-1 Research Approach and Design

This study examines the difference in the quality of accounting teaching between face-to-face and online modalities from the perspective of student perceptions. Therefore, an empirical-analytical approach with a cross-sectional design was adopted. Two versions of a survey were used to capture the perceptions of a representative sample of accounting students about the teaching quality of recently taught courses in face-to-face and online modes.

3-2 Population and Sample Size

The population consisted of 724 individuals who are studying Accounting at the different educational levels of the selected university: 42 (5.8%) Diploma students, 574 (79.3%) Bachelor students, and 108 (14.9%) Master's students. This population selected a convenience sample of 272 students who took face-to-face and online courses.

3-3 Measurement of Accounting Teaching Quality

The SEOTE questionnaire was used as an instrument to measure the quality of Accounting teaching. This questionnaire consists of 25 items that measure Chickering and Gamson's (1987) seven principles: student-faculty contact (four items), cooperation among students (three items), active learning (four items), prompt feedback (three items), time to task (three items), high expectations (four items), and diversity of talents and ways of learning (4 items). Given that the

SEOTE was designed to apply to online teaching, the wording of 13 items was adapted to the face-to-face modality to obtain comparable versions of the SEOTE for both teaching modalities. The measurement of each item was recorded on the following 5-item Likert scale: 1 = "Strongly Disagree," 2 ="Disagree," 3 = "Neither Agree Nor Disagree," 4 = "Agree," and 5 = "Completely Agree."

3-4 Data Collection

The data was collected from the Umm Al-Qura University campus in September 2021. The questionnaires were distributed during face-to-face classes for accounting students, who answered them immediately. 272 questionnaires were collected for each teaching modality. With them, a database was built in the IBM SPSS v.21 software composed of 54 variables (4 demographic characteristics, 25 face-to-face teaching items, and 25 online teaching items) and 272 cases with the responses of the participants. Subsequently, the database underwent a cleaning process, in which 105 cases were removed (43 cases with missing values and 62 cases showing evidence of misleading responses). Therefore, the study was conducted with 167 cases. The final sample consisted of 167 cases, representing 61.4% of the surveyed participants: 8 Diploma students, 137 Bachelor students, and 22 Master's students. Table 1 summarizes their demographic characteristics. A chi-square goodness-of-fit test was performed in which the value of the test statistic was χ^2=5.755 with a level of significance p=.056, which is greater than α=.05, which shows that the sample selected is representative of the population studied. Likewise, a statistical power test of 99% was performed, with a level of significance α=.05 and an "a priori" effect size of 50%, which estimated a minimum sample size of 127 participants totaling 254 surveys. Therefore, the sample size used (167 participants) is appropriate since it is higher than the minimum required. The effect of educational level on the perception of quality of teaching modalities is not evaluated in this study, as it is considered to be outside the scope of the research.

Table I: Demographic Characteristics

Title to Obtain	Level of Study	CGPA	Count	Average Age
DIPLOMA			**8**	**21**
	FRESHMAN		1	19
		>=3.00	1	19
	SOPHOMOR		2	19
		2.00-2.99	2	19
	JUNIOR		3	23
		2.00-2.99	2	23
		>=3.00	1	24
	SENIOR		2	23
		1.00-1.99	1	23
		>=3.00	1	22
BACHELOR			**137**	**20**
	FRESHMAN		49	18
		<1.00	16	19
		1.00-1.99	2	19
		2.00-2.99	2	19
		>=3.00	29	18
	SOPHOMOR		14	19
		<1.00	1	20
		>=3.00	13	19
	JUNIOR		58	21
		2.00-2.99	4	20
		>=3.00	54	21
	SENIOR		16	24
		<1.00	1	26
		1.00-1.99	2	26
		2.00-2.99	5	24
		>=3.00	8	22
MASTER			**22**	**30**
	SOPHOMOR		4	36
		>=3.00	4	36
	JUNIOR		8	28
		2.00-2.99	1	33
		>=3.00	7	27
	SENIOR		10	30
		2.00-2.99	1	28
		>=3.00	9	31
GRAND TOTAL			**167**	**22**

Source: Author.

The reliability achieved in the surveys was measured with Cronbach's Alpha coefficient and is shown in Table II.

Table 2: Reliability was achieved in the surveys

Measure	Version	Cronbach's Alpha
"Student Evaluation of Online Teaching Effectiveness" (SEOTE)	Face-to-face	.986
	Online	.991

Source: Author.

This result indicates that the participants answered both questionnaire versions with the greatest consistency and stability in their responses.

3-5 Analysis

Factor analysis is the most common technique used to identify the latent dimensional structure in collected data (Dziuban & Moskall, 2011). By definition, the factors that constitute this dimensionality are formed with the questionnaire items with the best correlations, ensuring that the resulting factors are independent of each other.

In this study, students' perceptions of the quality of accounting teaching (face-to-face and online) were obtained based on the results of an Exploratory Factor Analysis (EFA) conducted as follows. First, the EFA was performed with the 25 items of both questionnaires using the principal component method with varimax rotation. Second, the solution's suitability was verified by examining the correlation matrix through three tests: the calculation of the determinant, the Kaiser-Meyer-Olkin (KMO) test, and Bartlett's sphericity. Third, the percentage of variance explained by the data was examined. Fourth, the matrix of rotating components, the number of components obtained in the solution, and each item's relative importance were analyzed. Fifth, respondents' perceptions for each component were estimated using a perception index calculated as the weighted average of item responses concerning the prevailing correlations between each component. Finally, the research hypothesis was tested to determine if there is a statistically significant difference in how individuals perceive the components using a t-test for independent samples (if two components were obtained) or an analysis of variance (ANOVA) if three or more components were obtained.

4- Results

As in the method in the prior section, the adequacy of the data for factor analysis was checked. First, the determinant of the correlation matrix (|Correlation matrix| = 1.48×10^{-36}) tends to zero, which means that this is not an identity matrix (|I| = 1.00). Second, the chi-square value of the Bartlett sphericity test was 17,366.253 with 1,225 degrees of freedom and a significance level of $p = 0.000 < \alpha = 0.010$, which confirms that the correlation matrix is not an identity matrix. Third, the Kaiser-Meyer-Olkin test value was KMO = 0.968, which is above the acceptance threshold (0.650), meaning that the partial correlations between the items are very high. Taken together, all of these tests consistently show that an EFA is a suitable procedure for analyzing the collected data.

The EFA generated a two-principal component solution based on the rotated component matrix. The first component explains 40.609% of the variance of the data, and in it, the 25 items of the online version of the SEOTE predominate, as the correlations in this component vary between 0.826 and 0.882. The second component explains 37.194% of the variance and is dominated by the 25 items of the face-to-face version of the SEOTE, with correlations between 0.681 and 0.858. In other words, the EFA reveals an underlying structure of two principal components that adequately represent the online and face-to-face teaching modalities, respectively. As Figure 1 shows, two-point clouds emerge from the EFA made up of the items of each version of the SEOTE. Taking into account the proximity to the axes, it is observed that the items of the Online version are better represented in the axis of component 2. In contrast, the items of the face-to-face version are associated with the axis of component 1.

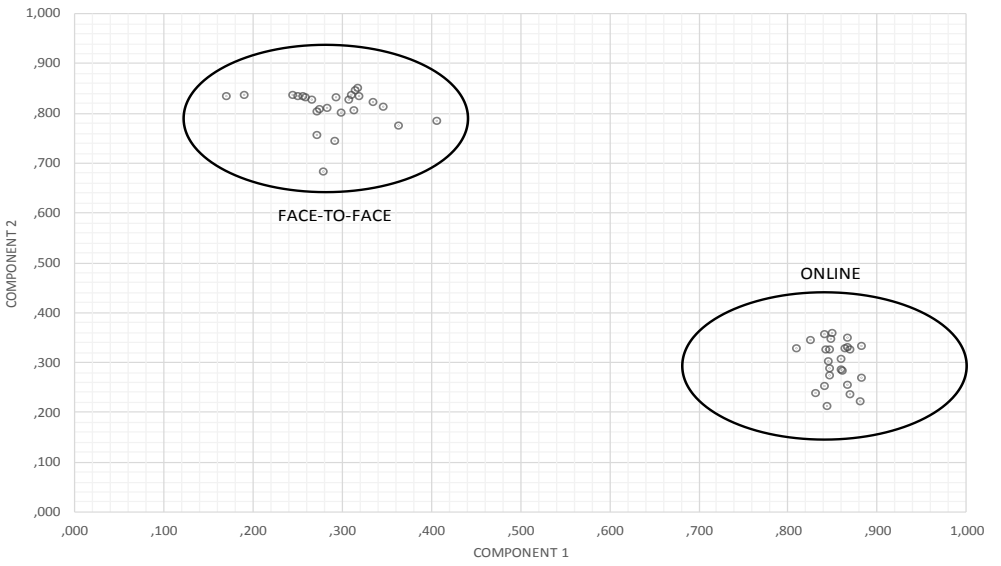

Figure I. Rotated Component Chart.
This chart represents the association of the items of both versions of the SEOTE with the components that emerge from the Exploratory Factor Analysis. A component is represented on each axis and the point clouds are the items of the SEOTE versions.
Source: Author.

In this study, the underlying structure of data does not distinguish between the Seven Principles of Effective Teaching since the items (variables) of each teaching modality are represented by a single and independent component. However, these components did not reveal the participants' perceptions (cases). Therefore, a perception index was developed to quantify these perceptions. This index was calculated separately for each component from the weighted average of the responses of each participant concerning the predominant correlations of each teaching modality.

Finally, the research hypothesis was tested by comparing the perception indices using a t-test of equality of means for independent variables. The perception indexes quantify the general perception of each accounting teaching modality separately. Therefore, it is convenient to compare them using a t-test of equality of means for independent samples with equal variances (Levene's test: $F = 0.239$; $p = 0.646 > \alpha = 0.01$, indicating equality of variance between the perception indexes). Table 3 summarizes the results.

Table 3: Independent Samples T-Test for Perception Index

Levene's Test for Equality of Variances	F		.212
	Significance		.646
T-test for equality of means	t		-1.180
	Degrees of Freedom		332
	Significance (bilateral)		.239
	Difference of Means		-.14209290
	Standard Error of the Difference		.12038125
	99% Confidence Interval for Difference	Lower	-.45396686
		Upper	.16978105

Source: Author

In the comparison, the t-statistic = -1.180, which was calculated with 332 degrees of freedom and reached a significance of $p = 0.239 > \alpha = 0.010$. Furthermore, the confidence interval for the mean difference, $CI_{99\%} = [-0.4540, 0.1697]$, contains zero. Therefore, both results consistently reveal no statistically significant difference between the means of the perception indexes for the online and face-to-face modalities. Consequently, the results reject the research hypothesis of a significant difference in the perception of the quality of accounting teaching between face-to-face and online courses.

5- Discussion

The findings provide empirical evidence on the quality of accounting teaching in two main areas. The first is concerned with the fundamental structure, whereas the second is concerned with student impressions.

Regarding the dimensionality of the construct, the EFA results show that the measures (items) of the quality of accounting teaching are correlated in two unique and independent components according to the teaching modality, without distinguishing the principles postulated by Chickering and Gamson (1987), which suggests the one-dimensionality of the construct. These results contradict the findings of many researchers (e.g., Bangert, 2008; Zhang et al., 2020; Reyes-Fournier et al., 2020; Tartavulea et al., 2020) that validated the multidimensionality of the construct.

On the other hand, the findings support the one-dimensionality of teaching quality (Dziuban & Moskall, 2011; Farrés-Tarafa et al., 2020). Dziuban and Moskall (2011) suggest that one-dimensionality patterns show that students pay much more attention to the broad educational experience and less attention to individual aspects. Another factor that could mask the one-dimensionality of the construct may be methodological. For example, Farrés-Tarafa et al. (2020) successfully validated a multidimensional structure and later observed high correlations between the items of different factors. For this reason, they performed an EFA, which showed that a one-dimensional structure was latent. In the present case, applying an EFA directly shows the unique component for each modality.

Much research on this topic occurred during the COVID-19 pandemic, with conflicting results. Our results support the findings of Spencer and Temple (2021) that students perceive no significant difference in the quality of face-to-face and online courses. However, the results contradict the findings of Kemp (2020), Rachmah (2020), and Setyaningsih (2020), among others, who argue that students perceive better teaching quality in face-to-face teaching.

6- Conclusions

This study aimed to determine if students have different perceptions of the teaching quality of face-to-face and online courses among students studying accounting majors at one of the biggest universities in KSA. Data were collected based on the SEOTE questionnaire, which incorporates the "Seven Principles of Good Practices for Effective Teaching" (Chickering & Gamson,1987).

Through an EFA, it was found that the questionnaire items were correlated in two separate, unique and independent main components according to the teaching modality. In other words, a one-dimensional solution was obtained for each teaching modality in which the principles postulated by Chickering and Gamson (1987) are not distinguished.

Next, students' perceptions of teaching quality were quantified by constructing a perception index for each component. These indexes revealed no statistically significant difference in the students' perceptions of the quality of accounting

teaching between online and face-to-face courses in the context of this study. This study makes a significant contribution to the empirical evidence on the one-dimensionality of teaching quality, the appropriate use of student evaluations, the factor invariance that justifies the use of the same questionnaire to measure different modalities, methods to quantify perceptions, and the quality of the teaching modalities.

6-1 Limitations and Implications

This study observed that some questions are still unclear, which opens new ways for future research. Although the principles postulated by Chickering and Gamson (1987) influenced considerable research over the past three decades, the results differ in terms of the dimensionality of the construct. Due to this fact, secondary or data-driven research is recommended to obtain evidence to clarify this question.

Another point of interest is the large number of questionnaires designed to assess teaching quality; therefore, empirical research on the cross-validity of their contents is recommended to see if they measure the same construct and show the extent of any overlap. Such a study would allow further research to focus on the best approaches to assess teaching quality.

Finally, the high consistency in the responses and the structuring of the data in two unique components suggest the existence of factor invariance. Consequently, the questionnaire used in this study measures the same construct, regardless of the teaching modality. However, this hypothesis was not tested because it is beyond the scope of the study; Therefore, the detection of the factorial invariance of the questionnaires in future research is recommended.

Regarding the limitations, the context of the study was restricted to the one university, which impedes the generalization of the results. It is, therefore, necessary to replicate this study in other universities and consolidate the findings to obtain an overview of this issue in the KSA.

7- Disclosure statement

The authors report no potential conflict of interest.

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