

## Using the Course Experience Questionnaire to Assess UAE Students' Perceptions of their Learning Environment

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### Abstract

*The quality of the learning environment has a significant impact on students' ability to achieve their learning goals. Therefore, this paper aims to examine students' perceptions of their learning environment in an Arab learning context. The Course Experience Questionnaire (CEQ), as an international benchmark, was used with a random sample of students at a public university in the United Arab Emirates. Participants were 623 students (505 females and 118 males) aged between 20 and 28 years. They were asked to complete the CEQ during their professional development seminars immediately before graduation. The results show strong reliability for the CEQ (Cronbach's alpha = .90). The students had positive perceptions on the six CEQ subscales, with Good Teaching scoring the highest and Appropriate Workload the lowest. The findings support the use of the CEQ as a benchmark of teaching effectiveness outside the Western World. Despite the widespread use of the CEQ around the world, it is not commonly used in the Arab learning context. Therefore, this paper makes a valuable contribution towards further validating the CEQ as a benchmark of quality in higher education in the Arab world.*

**Keywords:** Students' perceptions; higher education; learning environment; teaching quality; the Course Experience Questionnaire (CEQ); student satisfaction, UAE

### Introduction

The learning environment refers to the learners, the teachers, the physical context, the teaching methodology, the curriculum, and the associated technologies [1]. Research underscores the learners' role in shaping the teaching agenda through their perceptions of the learning environment. The factors that are important from the learners' perspective can influence the way educational institutions design their courses [2,3]. Students' evaluations of teaching are therefore "the most commonly used method of assessing teaching effectiveness ... The use of these tools remains widespread for guiding teaching improvements, informing tenure, promotion and merit decisions, and providing evidence for institutional accountability" [4].

This learners' input in the learning process has been extensively investigated. Khamis, Dukmak, and Elhoweris argue that increasing students' involvement in the educational process improves their self-esteem and enhances their motivation to learn, with the consequence that they are more satisfied with their learning en-

vironment. Students' perception of the learning environment affects their learning outcomes and their approaches to learning in a way that outweighs their personal characteristics [5,6]. It also affects their learning across subjects in problem-based courses [7]. In addition, while positive perception improves learning, negative perception can hinder students from achieving the desired learning competencies [8]. Thus, the classroom climate has a major impact on making students feel positive. It gives them a sense of belonging and engagement, strengthens their interpersonal ties, and encourages them to learn better [9,10]. Therefore, a positive learning environment boosts students' learning abilities, especially for lower achievers who need more teacher support to stay oriented to the task than self-independent learners who are doing well on their own [11].

The way students perceive the learning environment influences their learning approaches. To illustrate, when the task is interesting and the teacher is enthusiastic, students tend to adopt a deep learning approach that focuses on understanding the facts and ap-

plying knowledge. Students taking this approach seem to be satisfied because they are engaged and able to manage their learning. On the other hand, when the workload is heavy and the assessment methods do not encourage creativity, students lack interest in the course and so opt for a surface learning approach that focuses on superficial outcomes [12-17]. This shows that the quality of the learning environment has a significant impact on students' ability to achieve their learning goals and to become more satisfied with their education.

Wilkins maintains that quality represents the cornerstone of the endeavors of the United Arab Emirates to become an international hub for higher education [18]. There is a rapid increase in the number of universities and higher education institutions, especially international branch campuses, that seek to compete in the educational market in the UAE. This is forcing universities to try to distinguish themselves as world-class institutions by seeking to obtain international accreditation. There is also strong pressure from national stakeholders for these institutions to improve the quality of their programs so that their graduates can gain access to employment opportunities in the government sector. Thus, for these universities to survive the competition, they must be driven by business goals that make them accountable to their customers and give them a qualitative edge over their competitors.

In light of this increasing demand for accountability and quality in higher education, students' perception of their learning, as stakeholders, emerges as an important factor in determining the extent to which university programs are doing what they should do to maintain quality. Students' perception of their learning environment is extensively documented in the literature as a key indicator of quality in higher education. Research shows that taking students' satisfaction into consideration improves their involvement in learning and enhances their performance. It is claimed that students who have positive perceptions of challenging teaching and learning tasks tend to choose deep and strategic learning approaches, whereas those with negative perceptions of their learning environment tend to take a surface approach to learning [19-26].

However, there is still a need for more research on students' perceptions of their university experience, especially in the United Arab Emirates higher education institutions, where the results of investigating students' summative experiences at degree level across different disciplines have the important potential to help to improve learning at the university level [27,28].

The aim of the current study was to investigate Arab students' perceptions of their learning environment at the end of their degree programs at a public university in the United Arab Emirates by administering the Course Experience Questionnaire (CEQ). The study addressed the following questions: (1) How satisfied are students with their university experience? (2) What is the relationship between the students' perception of their courses and their performance as measured by their grade-point average (GPA)? (3) Is there a gender difference in the students' perception of their courses? (4) Are there differences between students' perception and performance across different disciplines? (5) Which aspects of the learning environment as measured by the CEQ scales are more positively perceived than others? (6) Is there a relationship

between students' gender and the CEQ subscales?

## Materials and Methods

### Participants

Students come from a public university in the UAE and are mainly females because UAE male students prefer to study at the police and military academies rather than at public universities. Thus, more than 80 percent of the students in this study are females. The two genders study on separate campuses and are enrolled in nine different colleges where the medium of instruction is English. The study sample comprised 623 students (505 females and 118 males) in their final year of study, who ranged in age between 20 and 28 years and studied in the nine colleges. Students are competent in English because it is the medium of instruction at the university.

### Instrument

The CEQ is a popular benchmark indicator of quality assurance in higher education institutions in the UK and Australia. It originated in the UK and was developed in Australia as a measure of quality in higher education. The CEQ focuses on students' summative experience at the degree program level, rather than focusing on individual subjects or teachers. Griffin, Coates, McInnis and James state that it "was developed with an assumption of a strong association between the quality of student learning and student perception of teaching" (p. 259) [29,30]. The CEQ consists of six scales that are recognized in the literature as indicators of teaching effectiveness, namely Good Teaching, Clear Goals and Standards, Appropriate Workload, Appropriate Assessment, Generic Skills, and Emphasis on Independence. It has been extensively investigated and found to be a valid and reliable global indicator of teaching quality at higher education institutions [31-35].

Lizzio, Wilson and Simons maintain that the CEQ is "the most suitable instrument for measuring aspects of the learning environment" (p. 32) [36]. Also, Byrne and Flood maintain that "the Course Experience Questionnaire (CEQ) could have much to offer to higher education institutions" (p. 136). Along the same line, Dorman emphasizes that the CEQ is "a key performance indicator of universities and departments within Australian Universities" (p. 36) [37]. The CEQ is claimed to be a standard instrument of teaching quality that can provide comparative data regarding what are considered best practices in teaching. By applying the CEQ over a period of time, academic institutions can trace the change in their teaching practices from year to year. The general nature of the CEQ allows it to provide useful information regarding the broad direction of students' learning experience, which can be further investigated by means of more specific research instruments [35].

Although the CEQ has been used in many countries to examine quality in higher education, there is still a scarcity of research into its use as a benchmark indicator in the Arab world. This study thus makes a valuable contribution by using the CEQ to measure Arab university students' perceptions of their learning environment [38-41].

### Procedure

The researcher gained permission from the university Research Ethics Committee to conduct the study and participants were asked to sign an informed consent form as proof of their willingness to

participate in the research. In addition, written permission was obtained by email from the relevant authority to use the Course Experience Questionnaire (CEQ) in this study. Participants were asked to indicate their agreement or disagreement with statements in the items of the CEQ using a five-point scale of 'definitely disagree' (1) to 'definitely agree' (5). Twenty-two statements were worded positively, while the other 14 were worded negatively and thus analyzed in reverse order. Items of the CEQ are grouped in six scales: Good Teaching (8 items), Clear Goals and Standards (5 items), Appropriate Assessment (6 items), Appropriate Workload (6 items), Generic Skills (6 items), and Emphasis on Independence and Choice (6 items). The instrument was administered in the students' final semester at the university, immediately before graduation and during their professional development seminars.

## Results

The SPSS statistical package was used to analyze the results. The reliability analysis shows very high internal consistency for the CEQ (Cronbach's alpha = .90), while the six subscales of the questionnaire demonstrate moderate to high reliability in measuring teaching effectiveness. Table I shows that the highest and lowest Cronbach's alpha coefficient values were for Good Teaching ( $\alpha = .861$ ) and Emphasis on Independence ( $\alpha = .460$ ). These results support previous findings. Ramsden (1991b) found Good Teaching to be the most reliable ( $\alpha = .87$ ) and workload the least ( $\alpha = .46$ ). Similar results were reported by Trigwell and Prosser where reliability was the highest for Good Teaching ( $\alpha = .78$ ) and the lowest for Appropriate Workload ( $\alpha = .25$ ). Also, Richardson (1994) [33] reported Good Teaching as the most reliable ( $\alpha = .72$ ) and Focus on Independence as the least ( $\alpha = .7$ ).

**Table I. Reliability Statistics for the Subscales of the CEQ**

Subscale	No of items	Items	Cronbach's alpha
Good Teaching	8	4, 9, 20, 22, 23, 25, 31, 33	.86
Clear Goals	5	1, 8, 18, 24, 35	.67
Generic Skills	6	2, 6, 11, 12, 13, 28	.82
Appropriate Assessment	6	7, 10, 17, 26, 29, 32	.68
Appropriate Workload	5	5, 14, 19, 27, 36	.69
Emphasis on Independence	6	3, 15, 16, 21, 30, 34	.46

The results, expressed in terms of mean (M) and standard deviation (SD) values, indicate that the students were highly satisfied, as evidenced by their overall perception of their degree programs (M = 3.90; SD = 1.05). They perceived the teaching effectiveness in their academic programs positively, irrespective of their college. This is confirmed by correlation analysis, which shows no signifi-

cant difference between the nine colleges and the six subscales of the CEQ. The students reported positive perceptions on all subscales irrespective of their colleges. Table II shows the means and standard deviations for the subscales, with Good Teaching showing the highest satisfaction score (M = 29.04; SD = 6.10) and Appropriate Workload the lowest (M = 14.41; SD = 3.93).

**Table II: Students' Means and Standard Deviations on the Six Subscales of the CEQ**

Subscale	Minimum	Maximum	Mean	SD
Good Teaching	10.00	40.00	29.46	6.10
Clear Goals	7.00	25.00	18.73	3.36
Generic Skills	6.00	30.00	23.91	4.21
Appropriate Assessment	6.00	30.00	20.34	4.49
Appropriate Workload	5.00	25.00	14.71	3.93
Emphasis on Independence	6.00	30.00	18.92	3.51

A Pearson product-moment correlation was used to measure the relationship between the students' overall satisfaction as measured by item 37 (Overall, I am satisfied with the quality of this course) and their satisfaction scores on each of the six subscales of the CEQ. It reveals a weak to moderate correlation between overall

satisfaction and the six subscales, with Good Teaching showing the strongest positive correlation ( $r_{(621)} = .63, p < .001$ ) and Appropriate Workload the weakest ( $r_{(621)} = .22, p < .001$ ), as indicated in Table III.

**Table III: Correlation between Students' Overall Satisfaction and the Subscales (N = 623)**

	Good Teaching	Clear Goals	Generic Skills	Appropriate Assessment	Appropriate Workload	Emphasis on Independence
Item 37	.63** .000	.51** .000	.540** .000	.25** .000	.22** 000	.424** .000

\*\*Correlation is significant at the 0.01 level (2-tailed)

A multiple regression analysis was used to find out which aspects (subscales) of the CEQ most relate to overall satisfaction as measured by item 37 (Overall, I am satisfied with the quality of this course). The results of this multiple regression showed that all the independent variables together were able to predict more than 46% of the variance of the overall satisfaction variable ( $R = .68$ ,

$R^2 = .462$ ). Significant ANOVA results supported the effectiveness of this regression model ( $F_{(6, 616)} = 88.15, P < .05$ ). The contribution of each predictor in this model is listed in Table IV. The results showed that Good Teaching is the best predictor while Focus on Independence is the least important.

**Table IV: Multiple Regression of the Six Subscales of the CEQ by Overall Satisfaction**

Scale	Coefficient	t. test	sig
Good Teaching	.069	8.286	.000
Clear Goals	.044	3.319	.001
Generic Skills	.061	6.162	.000
Appropriate Assessment	-.026	-3.139	.002
Appropriate Workload	.021	2.417	.016
Emphasis on Independence	.012	1.071	.284

To examine the effect of gender on students' perceptions, the scores of the two genders were calculated and compared, as summarized in Table V. These results indicate that mean scores differed between males and females. To confirm whether these differences were statistically significant, a t-test was run to examine the relationship between the students' gender and their perceptions

on the subscales. It showed a significant difference for the scales of Good Teaching ( $t_{(621)} = -3.35, p < .001$ ), Clear Goals ( $t_{(621)} = -3.89, p < .001$ ), Appropriate Assessment ( $t_{(621)} = -4.67, p < .001$ ), and Generic Skills ( $t_{(621)} = -3.56, p < .001$ ), where females scored more highly than males, as indicated by the means and standard deviations in Table V.

**Table V: Students' Means and Standard Deviations on the Six Subscales of the CEQ by Gender**

Scale	Male (N = 118)		Female (N = 505)	
	Mean	Std. Deviation	Mean	Std. Deviation
Good Teaching	27.79	6.06	29	6.06
Clear Goals	17.66	3.45	18.98	3.29
Generic Skills	22.68	4.47	24.20	4.09
Appropriate Assessment	18.63	4.38	20.47	4.42
Appropriate Workload	14.64	.68	14.72	3.99
Emphasis on Independence	18.67	3.66	18.97	3.47

A Pearson product-moment correlation was also conducted to test the relationship between students' perceptions on item 37 (Overall, I am satisfied with the quality of this course) and their GPA. This correlation showed no significant difference between the two variables ( $r_{(621)} = -.072, p = .072$ ); in other words, students were satisfied regardless of their GPA. However, the results of Pearson

correlation between the CEQ subscales and the students' GPA revealed a significant difference for the Appropriate Workload scale ( $r_{(621)} = .15, p < .001$ ), showing that heavy workload affected the students' satisfaction with their courses. The results of this correlation are presented in Table VI.

**Table VI. Correlation between Students' GPA and each of the Six CEQ Subscales (N = 623)**

	Good Teaching	Clear Goals	Generic Skills	Appropriate Assessment	Appropriate Workload	Emphasis on Independence
GPA	.017 .681	.032 .420	-.045 .265	.062 .122	.149** .000	-.070 .083

\*\*Correlation is significant at the 0.01 level (2-tailed)

To compare the students' overall satisfaction across colleges, a one-way ANOVA was conducted to examine the students' response to item 37 and this revealed a significant difference:  $F(8,614) = 2.464, p = .012$ . The post hoc Bonferroni test was used to determine where this difference lies, but it did not show any significance.

However, comparing the mean scores and standard deviations for the nine colleges, as in Table VII, reveals greatest satisfaction with the College of Food and Agriculture ( $M = 4.30; SD = 1.02$ ) and least with the College of Science ( $M = 3.61; SD = 1.04$ ).

**Table VII: Means and Standard Deviations of Overall Satisfaction by College**

College	N	Minimum	Maximum	Mean	SD
Business	133	1	5	4.01	1.00
Education	31	1	5	3.87	1.17
Engineering	104	1	5	3.78	1.01
Food and Agriculture	23	1	5	4.30	1.02
Humanities and Social Sciences	170	1	5	3.97	1.05
Information Technology	33	1	5	3.67	1.13
Law	32	1	5	4.28	.99
Medicine	14	2	5	3.71	.994
Science	83	1	5	3.61	1.04

Furthermore, an independent t-test was run to examine the relationship between students' overall satisfaction and their gender. It showed no significant difference between male and female students:  $t_{(621)} = .001, p = .974$ . This indicates that students were satisfied with their learning experience irrespective of gender. Finally, a Pearson-product moment correlation was run to examine the relationship between students' gender and their perceptions of the

CEQ subscales. These results show statistically significant differences for Good Teaching ( $r_{(621)} = 133, p = .001$ ), Clear Goals ( $r_{(621)} = 154, p < .001$ ), Generic Skills ( $r_{(621)} = 141, p < .001$ ), and Appropriate Assessment ( $r_{(621)} = 184, p < .001$ ), where females reported more positive perceptions of these scales than males, as shown in Table V.

## Discussion

The current study confirms previous evidence that the CEQ is a highly reliable and statistically sound performance indicator that is well grounded in theory and research [35]. The study concludes that the CEQ is a feasible measure of teaching quality in non-Western higher education institutions. The results show that students of all the nine colleges in the study are generally satisfied with their learning, regardless of GPA, gender, or college. These findings confirm previous research that the CEQ is a good measure of teaching effectiveness.

In addition, the positive correlation between scores on the CEQ subscales and the students' overall satisfaction, with Good Teaching as the highest and Appropriate Workload as the lowest, is compatible with previous research showing students' ratings for Good Teaching to be higher than for Workload [42-45]. Workload in the current study was seen to be a predictor of negative perception, especially among students from the College of Science.

The absence of a significant relationship between students' satisfaction with their courses and their GPA seems to be in congruence with the finding of Simons et al. that students' perception of good teaching was not strongly linked to their GPA [36]. However, more investigation is required to further validate these findings. It may be useful to run the CEQ in a time series with future graduates to track any changes in students' perceptions over time.

With regard to gender, it did not seem to affect the overall results. Both male and female students evinced positive perceptions of the teaching quality on their respective academic programs in all of the colleges. However, female students were shown to be slightly more satisfied ( $M = 3.95; SD = 1.049$ ) than male students ( $M = 3.73; SD = 1.051$ ). They showed more positive perceptions of Good Teaching, Clear Goals, Generic Skills, and Appropriate Assessment than males.

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## Conclusion and Implications

The students' positive perceptions of their courses in this study can indicate good learning gains because satisfied students become more engaged in deep learning that focuses on understanding the materials [46-48]. This indicates that soliciting students' feedback can improve the quality of teaching because it makes universities more accountable and encourages learners to adopt a productive attitude towards their learning [49]. From this perspective, students' feedback is seen as a reliable means of measuring the quality of teaching and of determining whether an academic institution delivers value to its stakeholders [50-54].

Based on the above, the use of the CEQ as a measure of teaching effectiveness appears to be feasible due to its ability to generate summative information on the strengths and weaknesses of academic programs. The potential benefits of applying the CEQ also include improving assessment in accordance with students' needs and preferences in various degree programs. Additionally, the focus of the CEQ on the general direction of the learning environment can serve to guide the design of more specific tools to tap into learning difficulties that need attention. Consequently, universities can allocate the right resources to remedy these learning difficulties.

This study has important implications for examining the cultural dimensions of students' reasons for learning, which are not accounted for by the CEQ. Further research could also explore how students learn the generic skills of problem-solving, analysis, teamwork, and communication by designing more specific instruments that can probe these areas, and consequently help improve the curricula to produce better learners.

The holistic perspective of the CEQ can be enhanced with these more specific instruments that go beyond the formal education happening inside the classroom to the support services and extra-curricular activities which affect students' out-of-class learning experience. These instruments could be developed to monitor how teachers correct the weaknesses pinpointed by students in their general evaluation of their course experience. In this way, the results of the CEQ could be validated against the course objectives to provide reliable data on how different disciplines perceive the CEQ scales. This would yield important information on the learning approaches that students take within these disciplines and the problematic areas needing improvement [55].

Finally, since the current study adds to the validity of the CEQ as a robust instrument that can be applied beyond Australia and the UK, it is advisable to further test the CEQ in the Arab learning context, particularly in relation to students' learning approaches [56]. Collecting data from various UAE higher education institutions would help to inform policymakers on how their stakeholders view the teaching quality being offered at a national level.

## Geolocation information

United Arab Emirates

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## Conflicts of Interest

The author declares that he has no conflict of interest.

## Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and the UAE University Research Ethics Committee (ERS\_2017\_5590) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

## Informed Consent

Informed consent was obtained from all individual participants in the study.

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