Journal of Education and e-Learning Research
Vol. 10, No. 3, 595-604, 2023
ISSN(E) 2410-9991 / ISSN(P) 2518-0169
DOI: 10.20448/jeelr.v10i3.4989

Digital ethics in education: An examination of Omani information studies students' ethical competencies during e-learning

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Abstract

Shifting to an e-learning style forced students to learn many skills and competencies to benefit from their experience in an e-learning environment. Ethical competencies play a crucial role in ensuring the fairness of students' assessments and the overall educational process. During the COVID-19 pandemic, the research used a questionnaire to evaluate the ethical understanding of students enrolled in Sultan Qaboos University's Information Studies Department using a quantitative methodology. The findings of this study reveal a significant lack of basic ethical competencies among students in the e-learning environment which negatively impacts their educational experience. The responses obtained indicate a low level of awareness regarding ethical practices in e-learning as well as a lack of knowledge concerning learning misconduct practices. The study suggests the implementation of an educational program that addresses academic ethical practices and e-learning misconduct across all educational levels. The outcomes of this research contribute to a better understanding of current e-learning practices among students, raise awareness about the importance of ethical competencies in e-learning and provide guidance for students to develop ethical digital competencies.

Keywords: COVID-19 pandemic, Digital ethics, E-learning, Learning misconduct.

Citation | Shehata, A., Khalaf, M. A., Al-Hijji, K., & Osman, N. E. (2023). Digital ethics in education: An examination of Omani information studies students' ethical competencies during e-learning. *Journal of Education and E-Learning Research, 10*(3), 595–604. 10.20448/jeelr.v10i3.4989
History:
Received: 30 May 2023
Revised: 10 August 2023
Accepted: 7 September 2023
Published: 15 September 2023

Publisher: Asian Online Journal Publishing Group

Funding: This research is supported by Sultan Qaboos University, Oman (Grant number: IG/ART/INFO/22/01).
Institutional Review Board Statement: The Ethical Committee of the Sultan Qaboos University, Oman has granted approval for this study (Ref. No. IG/ART/INFO/22/01).
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

Contents

Contribution of this paper to the literature

This study emphasizes ethical competence and research in the academic domain. Higher education institutions must implement a teaching program that addresses research methodologies and promotes ethical reasoning, decision-making, communication and behavior. Additionally, the implications of our findings are not limited to the e-learning context but extend to all forms of teaching.

1. Introduction

The COVID-19 pandemic has promoted the expansion of online education and brought about significant changes in the field of education. Universities were forced to adopt e-learning because of the risk of spreading the virus among students as the traditional learning approach contradicts social distancing principles (Ndzinisa & Dlamini, 2022). The change in the learning approach has brought many challenges and benefits (Leo, Alsharari, Abbas, & Alshurideh, 2021). As a result, universities explored the possible solutions that could be adopted to mitigate the effects of these challenges.

E-learning challenges included ICT skills challenges, staff digital teaching competencies (Jans, 2009), internet coverage and a lack of ethical competencies in the e-learning style. E-learning has made it necessary for students in higher education to acquire many competencies to help them learn and achieve better performance. Students must develop a wide range of abilities in an environment like Moodle in higher education by means of virtual learning (Elçiçek & Erdemci, 2021).

Students are responsible for ensuring that they understand the lectures delivered to them, engaging with staff and ensuring that they have acquired the desired outcomes from the course and master the knowledge and skills in the course (Redding, 2014). Higher education institutions are responsible for promoting students' ethical competencies in the traditional educational style. However, students also become responsible for developing their ethical competencies and ensuring they follow the ethical guidelines set by the universities to achieve fair and equal learning and evaluation outcomes with the shift to e-learning.

Ethical competence in learning can be defined as the ability to understand and apply ethical principles in academic and professional contexts (From, 2017). This involves various cognitive and behavioral skills developed through education and experience. Developing ethical competence in learning requires knowledge of ethical principles and practical skills for applying them in complex and challenging situations. The dimensions of ethical competence can be deconstructed into several key components including reasoning, decision-making, communication and behavior (Reynolds & Ceranic, 2007). Ethical reasoning involves recognizing ethical issues, identifying relevant ethical principles and evaluating competing claims or arguments. Ethical decision-making involves using ethical reasoning to make choices and take action in ethical dilemmas (Rest, Narvaez, Thoma, & Bebeau, 1999). Ethical communication involves communicating effectively and respectfully about ethical issues with others. In this sense, Omani citizens were found to have high verification skills and information literacy skills (Shehata et al., 2023). Finally, ethical behavior involves demonstrating integrity, honesty and responsibility in one's actions and interactions with others.

The goal of this study is to address several critical research gaps in the area of ethical competencies and online learning. The study's first objective is to examine the ethical knowledge of higher education students at Sultan Qaboos University's Information Studies Department during the COVID-19 pandemic. This study sheds light on the skills and knowledge needed for students to interact successfully in e-learning contexts. This research will improve our understanding of the distinctive problems and requirements faced by students by offering a comprehensive evaluation of ethical skills in the context of online education.

Furthermore, this study highlights the value of ethical skills in e-learning and how they affect educational institutions. It is crucial to understand the role of ethical competencies in guaranteeing the fairness and integrity of the educational process in light of the widespread adoption of e-learning. This research can offer valuable insights for higher education institutions to develop efficient interventions and educational programs by identifying the current gaps in students' ethical skills. The results of this study can also be used as a starting point for future research, allowing for a deeper investigation of ethical competencies and their influence on students' learning outcomes in the developing field of online education.

1.1. Literature Review

This literature review aims to analyze and evaluate the existing literature on ethical competencies and the current ethical practices in e-learning.

1.2. Digital Competencies

The widespread adoption of information technology has widened the opportunity for developing digital skills. Learning in the digital environment requires many competencies that enable the user to benefit from the tools available in the digital environment (Oberländer, Beinicke, & Bipp, 2020). Digital competencies were defined by Søby (2013) as "the confident and critical use of Information Society Technology for work, leisure and communication" (p.135). Crick (2008) stressed that competencies combine knowledge, values, skills, attitudes and understanding leading to a particular behavior. According to Orosz et al. (2019), "digital competence is the ability to engage with and use digital technology for learning, at work and in society. It also includes being confident, critical and responsible". It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competencies related to cybersecurity), intellectual property-related questions, problem-solving and critical thinking" (p.58).

In Cartelli's (2010) study, it was noted that digital competence is connected to understanding the nature, role and opportunities of Information Society Technology (IST) in everyday contexts. Additionally, it involves knowledge of ethical norms for interactive IST use and the development of comprehension skills to evaluate information accuracy, reliability and affordability. Consequently, to adapt to the changing learning environment, students and teachers must actively acquire new competencies. The need for instructors to have a variety of skills

was emphasised by Jans (2009) in order to succeed in the digital world and produce the best results for e-learning in higher education. Information and communication technology (ICT) competencies are vital for effective performance. Furthermore, Guzmán-Simón, García-Jiménez, and López-Cobo (2017) research conducted in the context of Spanish higher education highlighted the need for implementing training programs that cultivate digital competence across the undergraduate curriculum.

1.3. E-Learning Competencies

In the last decade, the debate about the effectiveness of learning has increased as practitioners and professionals have raised concerns regarding the ability of this learning style to compete with face-to-face learning and yield as same results Roman and Plopeanu (2021). E-learning offers a more flexible learning environment allowing for more collaboration and interaction with students and providing access to electronic learning resources (Albrahim, 2020).

E-learning should be considered a backup educational system to maintain the learning process at the institutional level in unexpected circumstances, such as the COVID-19 pandemic (Roman & Plopeanu, 2021). However, according to Carlsson, Dahl, Öckert, and Rooth (2015), long-term educational isolation or separation from mainstream schooling would have negative impacts on knowledge usage and the learning process. There have also been many issues raised about e-learning including the fact that it cannot replace face-to-face instruction and that retention in online educational environment is a problem (Albrahim, 2020). The most concerning problems related to ethical aspects are cheating and plagiarism (Fuller & Yu, 2014). Furthermore, e-learners frequently collaborate in groups to complete a single job and they frequently take advantage of the potential misuse of e-learning (Muhammad, Ghalib, Ahmad, Naveed, & Shah, 2016).

In contrast, Karuović et al.'s (2021) study explored the habits and competencies of a sample of students while they were engaged in the e-learning approach. The study revealed that there are factors that affect the students' competencies such as their characteristics and gender.

According to Elçiçek and Erdemci (2021), female students exhibit a higher level of 21st-century competence compared to their male counterparts. Female students outperformed in information and technological literacy, critical thinking and problem-solving, entrepreneurship and innovation, social responsibility and leadership than male. These findings align with Parkes, Reading, and Stein (2013) research which identified student autonomy, self-direction, time management, reflection, computing and internet skills, interaction skills and identity and social presence as the most crucial e-learning competencies.

However, Sadita, Santoso, Soeradijono, and Suhartanto (2017) found that students are well prepared to use technology to assist in learning. They are open-minded to the lecturers' facilitating roles. As a result, an online discussion forum with the direction of lecturers as models, coaches and scaffolders has the potential to improve their learning. Similarly, the study of Parkes et al. (2013) exposed that the students are prepared for e-learning technology use. However, according to the study, they are not well-prepared for collaborative work or using critical thinking skills and learning methodologies.

1.4. Ethical Competencies

According to De Guadalupe Arras-Vota and Bordas-Beltrán (2017), respect, responsibility, honesty and other moral principles and values as well as professional and personal ethics serve as the foundation for ethical skills. Lawson et al. (2014) further emphasize that ethical competencies include labor practices, human rights, health and safety, the pursuit of excellence and societal responsibility should serve as guiding principles for professionals in different roles and leadership positions.

With the spread of the COVID-19 pandemic, more focus has been placed on ethical competencies in learning. Desai, Lankford, and Schwartz (2020) emphasised the importance of developing ethical competences during the pandemic. They discussed the APA ethics codes in their study which also highlighted the fundamental ethical competencies that doctoral students should acquire during their research and the APA ethical standards that must be upheld. A study by Alwahaishi (2020) on 234 Saudi students enrolled in a business programme found that students developed ethical competencies as a result of exposure to the business environment and practical training highlighting the significance of exposing students to the market to help them develop ethical competencies.

Trobec and Starcic (2015) demonstrated that students develop ethical competencies through active participation in simulations that involve solving ethical issues through social interaction and group collaboration. The type of learning environment whether online or traditional does not significantly impact this process. Additionally, Lechasseur, Caux, Dollé, and Legault (2018) found that experience is valuable for the exercise of ethical competence. On the other hand, managers and accountants can leverage broad management competencies, including ethics and social responsibility to consider various aspects of system-wide operations such as finance, investments, human resource management, marketing, economics, business law, mergers and acquisitions and globalization with the aim of creating organizational value (Meador, 2017). It is crucial to emphasize the skills necessary to promote diversity and freedom in the modern world and achieve the objective of ethical competence in teaching.

Ethical competence must be combined with improving instructional quality to achieve insightful results (Huda & Teh, 2018). According to Poikkeus, Numminen, Suhonen, and Leino-Kilpi's (2014) study, one way to improve ethical competencies is through ethics education. Different educational technologies must also be considered while developing ethical competence learning methodologies. The internet makes it easier to give lectures and exercises as well as to discuss issues in groups using digital tools. However, educators should be aware of ethical issues related to the use of the internet in education (Andersson et al., 2022). According to Pohling, Bzdok, Eigenstetter, Stumpf, and Strobel (2016), a crucial and major task is choosing employees with ethical competence for jobs with great responsibility. Putting ethical competence in the spotlight of human resource management is one method to attain this goal. Consequently, it is critical to encourage students at different stages to learn and develop ethical competencies in the digital era.

1.5. Digital Competency Models

Several models and approaches to digital competencies have been established in order to understand and evaluate individuals' digital skills. These models add to the body of knowledge on digital competencies by offering well-organized frameworks for assessing and improving digital abilities. One of the models is the Digital Competence Framework for citizens (DigComp), developed by the European Commission which covers five key areas of digital competence: information and data literacy, communication and collaboration, creating digital content, safety and problem-solving. DigComp is a useful resource for understanding and assessing digital competencies across various fields (Carretero, Vuorikari, & Punie, 2017).

The Norwegian Centre for ICT in Education developed the "Digital Competence Wheel" which visually represents the various characteristics of digital competence. Information, communication, collaboration, content creation, safety and problem-solving are highlighted as six essential areas. This paradigm provides a useful framework to help teachers and students assess and grow their digital competencies (Ferrari, 2013). The European e-skills association also created the e-skills framework which focuses on digital competencies that are especially suited for the workforce. It identifies crucial digital competencies and subject areas relevant to various professional vocations. According to employment needs, this framework makes it easier for businesses and individuals to assess and improve their digital competence (Fernández-Sanz, Gómez-Pérez, & Castillo-Martínez, 2017).

The Technological Pedagogical Content Knowledge (TPACK) approach integrates content, pedagogical knowledge and digital competency to enhance teaching and learning. This paradigm emphasizes the effective use of technology while considering instructional methodologies and topic understanding. Mishra and Koehler (2006) propose the TPACK model as a comprehensive method for incorporating digital competencies into educational contexts. Another model, Ruben Puentedura's SAMR (Substitution, Augmentation, Modification, Redefinition), provides a framework for evaluating technology's role in teaching and learning. The SAMR model categorizes technology use into four levels ranging from basic substitution to transformative reinterpretation. Educators are encouraged to move beyond mere substitution to reshape learning experiences and outcomes (Puentedura, 2006).

1.6. Research Problem

The shift towards e-learning has created many possibilities in the educational system. However, the success of e-learning depends on students having several competencies. One of the most important competencies in e-learning is ethical competency. During e-learning, students are responsible for following ethical educational practices to ensure the integrity of educational outputs, fair evaluation and equality in learning. Students need to avoid unacceptable practices such as plagiarism, cheating and data falsification.

A wide range of challenges relating to students' conduct and ethical competence have been identified as a result of the introduction of e-learning in higher educational institutions worldwide (Mahfoodh & AlAtawi, 2020). These issues have raised doubts about evaluating students as this process requires students to follow the ethical guidelines of the educational institution. There is no reliable method to ensure that students follow ethical behavior in e-learning but academic staff can teach the students acceptable ethical practices and raise their awareness of the importance of following ethical behavior in e-learning. Therefore, this study attempts to address the gap by identifying the ethical competencies that information studies students at Sultan Qaboos University (SQU) develop and then examining how these competencies affected their behaviour during the e-learning phase during the COVID-19 pandemic.

1.7. Research Questions

The study mainly aims to explore students' ethical competencies during e-learning. As a result, a number of research questions have been proposed:

1) What are the current e-learning practices at Sultan Qaboos University and the Information Studies department?
2) What are the students' perspectives on ethical practices in the digital environment?
3) Are there gender differences in ethical practices during the e-learning period?

2. Methodology

This research project adopted a quantitative approach. The questionnaire was distributed among information studies students in the arts and social sciences faculty at Sultan Qaboos University. A list of students was obtained through the department coordinator and the questionnaire was distributed electronically using emails between September 2021 and November 2021. The total number of students is 141. However, we retrieved 93 responses representing 65.9% of the total number of students. The male respondents represented 44.1% of the respondents while the females were 55.9%. 52.7% of the respondents were in their final year. Only 7.5 % of the respondents were first-year students. The questionnaire is the best tool for collecting self-reported data about ethical competencies and students' perceptions towards e-learning. The questionnaire mainly contained closed-ended questions to measure the students' ethical competencies. The questionnaire was distributed electronically to participants and the data were analyzed using SPSS software. In order to give the students an understanding of the meaning of ethical competencies, examples of competencies that are regarded as ethical e-learning competencies were provided. Furthermore, the data were analyzed using SPSS 26 software. The questionnaire was distributed only among Information Studies students affiliated with Sultan Qaboos University to obtain rich data that can be generalized in similar contexts.

2.1. Data Collection Instrument

In order to design the questionnaire, the researchers adopted questions from the attitude towards plagiarism questionnaire validated by Mavrinac, Brumini, Bilić-Zulle, and Petrovečki (2010). In addition, the researchers used the Sultan Qaboos University policy for ethical practices during e-learning and the e-learning regulations policy to develop the questions. The questions were in Arabic and then translated to English.

2.2. Construct Validity of the (EES)

2.2.1. Exploratory Factor Analysis (EFA)

SPSS software version 26 was used to perform exploratory factor analysis on the scores of 93 students enrolled in the information studies department in the College of Arts and Social Sciences at Sultan Qaboos University. Assumptions of the EFA were met as the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.784 and Approx. Chi-Square of Bartlett's Test of Sphericity was 1384.522 (DF= 406, P < 0.01). Items 3, 4, 14, 15, 20, and 22 were excluded from the analysis due to their insignificant relationship to the total score.

Table 1 shows that the ethics of the e-learning scale consist of two factors: (1) plagiarism, (2) e-learning practices and quizzes. The total variance explained by both factors is larger than 30% which is an acceptable ratio. The initial pool of items was categorized into three factors but the exploratory factor analysis resulted in two factors. This is consistent with EFA being used to "reduce variables into a smaller set to save time and facilitate easier interpretations" (Yong & Pearce, 2013).

Table 1. Factor structure of the ethics of e-learning scale (EES) N=93.

N	Items	Factor 1	Factor 2	H^2
30	I refuse the course professor to use Turnitin.	0.804		0.581
35	I saw a video on the same subject as my project and gained new knowledge from it so I don't need to reference it.	0.746		0.466
27	I have the right to source without specifying short deadlines.	0.740		0.506
31	Turnitin was considered an unfair assessment tool because I put so much effort into writing the course.	0.732		0.478
28	When I don't know what to write, I translate part of a paper into a foreign language.	0.729		0.497
33	There are too many citation rules that prevent me from learning how to write a citation.	0.705		0.461
25	If the student cannot write the assignment well, it is possible to copy parts of a similar paper already published in that language and translate it into Arabic.	0.668		0.430
16	I find it normal to help my colleagues during the exam by giving them advice.	0.649		0.366
17	I will clarify the ambiguity at certain times to a colleague if he asks me during the exam.	0.603		0.310
34	The large number of sources of information (Books, conference papers, reports, interviews, etc.) makes it difficult to cite them correctly.	0.589		0.370
29	I do nothing illegal if a colleague gives me permission to copy from his paper since I have his consent.	0.578		0.448
26	I cannot write an assignment without translation from English sources.	0.557		0.319
19	I use the study guides to complete the response as soon as possible because of limited time. .	0.500		0.419
12	I think e-learning is a waste of time.		0.818	0.720
10	I attend electronic lectures to register my attendance only.		0.812	0.705
8	I see that e-learning is not feasible so I don't attend all the lectures.		0.810	0.685
9	I simply attended the online lecture to register my attendance.		0.802	0.767
7	I do not pay attention to online lectures because it is difficult to follow the synchronous lectures.		0.730	0.498
11	I think that face-to-face lectures are more useful than online ones.		0.636	0.315
21	There is no fairness in the assessment in the e-learning system due to the non-compliance of some students with ethical rules.		0.598	0.279
5	I attend the lecture from a quiet place sometimes (the car, the club, the family.		0.529	0.409
18	Some students recruit others to solve their exams.		0.505	0.326
2	I share the username and password of the model account with my colleagues.		0.437	0.467
13	I use external sources (books, websites) while performing the exams for the courses.		0.427	0.338
1	The breach of conduct policy at Sultan Qaboos University ensures the integrity of the educational process and the commitment of students to sound academic behavior.		0.405	0.139
32	I know the rules for crafting APA citations.		0.395	0.143
24	I think e-learning is a waste of time.		0.338	0.089
6	I attend electronic lectures to register my attendance only.		0.316	0.093
Eigenvalue		8.454	3.191	
% of variance		29.152	11.002	
Accumulative variance		29.152	40.155	

Note: H^2= Communalities, factor 1= Plagiarism, factor 2= e-learning practices and tests.

2.3. Item Discrimination Index

The item discrimination index is computed through item-total correlation. The results of item-total correlations are given in Table 2.

Table 2. Item-total correlation (Item discrimination index), n= 93.

Item	Correlation**	Item	Correlation**
30	0.607	12	0.717
35	0.501	10	0.714
27	0.588	8	0.696
31	0.557	9	0.774
28	0.582	7	0.572
33	0.550	11	0.302
25	0.546	21	0.297
16	0.498	5	0.611
17	0.461	18	0.548
34	0.542	2	0.659
29	0.629	13	0.552
26	0.499	1	0.278
19	0.648	32	0.327
24	**0.197**	6	0.283

Note: ** All values are significant at 0.01 level; value in Bold is insignificant.

All values are significant at the 0.01 level while only item 24 was insignificantly associated with the scale as its correlation value was 0.197.

2.4. Internal Consistency and Reliability of the (EES)

McDonald's Omega and Cronbach's alpha were used to assess the internal consistency of the EES. McDonald's Omega Coefficient is more accurate than Cronbach's alpha (Khalaf & Abulela, 2021; Khalaf & Al-Said, 2021; Khalaf & Omara, 2022). Accordingly, both coefficients were computed to ensure the reliability of the EES scale.

Table 3. Cronbach's alpha and McDonald's omega of the EES, N=93.

Coefficient	Subscales	Value	SE	95% CI. lower	CI. upper
Alpha α	Factor 1	0.889	0.002	0.830	0.923
	Factor 2	0.873	0.020	0.824	0.903
	Total score	0.906	0.018	0.863	0.931
Omega ω	Factor 1	0.885	0.025	0.818	0.919
	Factor 2	0.878	0.022	0.823	0.909
	Total Score	0.902	0.021	0.856	0.938

Note: SE= Standard error, CI= Confidence intervals.

Table 3 presents the internal consistency and reliability of the questionnaire using McDonald' Omega and Cronbach's alpha.

3. Results

3.1. E-Learning Practices

Q1. What are the current e-learning practices and perceptions of the Information Studies department's students at Sultan Qaboos University?

Means, SDs, frequencies and percentages were computed to answer this question.

Table 4 presents the mean, SDs, frequencies and percentages of e-learning items (N=93).

Table 4. Means, SDs, frequencies, and percentages of e-learning items, N=93.

Item no.	Mean	SD	Agree N (%)	Neutral	Disagree
I think e-learning is a waste of time.	2.57	1.18	19 (20.4)	25 (26.9)	49 (52.7)
I attend online lectures for attendance only.	2.47	1.20	21 (22.6)	18 (19.4)	54 (58.1)
I see that e-learning is not feasible, so I do not attend all the lectures.	2.68	1.24	26 (28.0)	21 (22.6)	46 (49.5)
I attend the online lectures only for attendance.	2.59	1.22	24 (25.8)	19 (20.4)	50 (53.7)
I do not pay attention to online lectures because it is difficult to follow the synchronous lectures.	3.03	1.18	33 (35.5)	30 (32.3)	40 (32.2)
I think that face-to-face lectures are more valuable than online ones.	3.91	1.02	60 (64.6)	25 (26.9)	8 (8.6)
There is no fairness in the assessment in the e-learning system due to the non-compliance of some students with ethical rules.	3.82	1.14	57 (61.3)	25 (26.9)	11 (11.8)
I attend the lecture from a quiet place sometimes (The car, the club, the family).	2.81	1.35	33 (35.5)	19 (20.4)	41 (44.1)
Some students use other sources for their exams.	3.37	1.22	45 (48.4)	27 (29.0)	21 (22.6)
I share the username and password of the model account with my colleagues.	1.97	1.21	14 (15.1)	12 (12.9)	67 (72.0)
I use external sources (Books, websites) during the exams.	3.32	1.12	45 (48.4)	24 (25.8)	24 (25.8)
The breach of the conduct policy at Sultan Qaboos University ensures the integrity of the educational process and the commitment of students to sound academic behavior.	3.91	0.89	70 (75.2)	17 (18.3)	6 (6.5)
I know the rules for crafting APA citations.	3.89	1.03	67 (72.0)	18 (19.4)	8 (8.6)
Self-citation should not be punished in the same way as citation of another student's work.	3.96	0.99	69 (74.2)	17 (18.3)	7 (7.5)
I join the lecture from the phone to make it easy.	3.35	1.25	45 (48.4)	25 (26.9)	23 (24.8)

According to many statements, there was a propensity among the students to follow bad practices, hence it was discovered that the students mixed between acceptable and unsatisfactory e-learning practices. For example, the students believed that self-citation was an acceptable practice (M= 3.96). Many students believe that e-learning is inferior to face-to-face learning (M= 3.91). The students have indicated that the misconduct policy of Sultan Qaboos University guarantees the integrity of the e-learning process and ensures equality among the students (M=3.91). However, many students indicated that the e-learning system lacks fairness as many students do not comply with ethical rules (M=3.82). Noticeably, the students claimed that they have a good awareness of the APA citation style which is the adopted style at the university (M=3.89).

The Sultan Qaboos University encourages the students to attend the e-learning courses in quiet places to understand the lecture. There was an agreement among the students that they might use phones or tablets to attend the lectures (M= 3.35). Moreover, many students agreed that other students might cheat by getting help from their friends (M=3.37). Students were also found to use external sources during online exams and quizzes (M= 3.32).

Notably, some practices such as sharing passwords with friends (M=1.97) and only attending lectures for attendance (M=2.47) were among the practices that students disagreed with. Yet, the results indicated that students still need more training in rigorous e-learning practices. The responses have shown that students might lack proper training and would benefit from workshops by the department or the university on e-learning.

3.2. Plagiarism Practices

Q_2. What are the current plagiarism practices of the Information Studies department's students at Sultan Qaboos University?

Means, SDs, frequencies and percentages were computed to answer this question.

Table 5. Means, SDs, frequencies, and percentages of plagiarism items, N=93.

Statement	Mean	SD	Agree N (%)	Neutral	Disagree
I refuse the course professor to activate Turnitin.	3.28	1.15	42 (45.2)	28 (30.1)	23 (24.7)
I do not need to cite a video file I watched on the same assignment topic and learned new information from it.	3.22	1.15	38 (40.9)	30 (32.3)	25 (26.9)
I have the right to source without specifying short deadlines.	3.24	1.18	38 (40.9)	28 (30.1)	27 (29. 1)
Turnitin is considered an unfair assessment tool because it requires effort to write the course.	3.70	1.14	57 (61.3)	21 (22.6)	15 (16.1)
When I do not know what to write, I translate parts of a paper into a foreign language.	3.32	1.04	42 (45.2)	31 (33.3)	20 (21.5)
There are too many citation styles that prevent me from learning how to write a citation.	3.40	1.06	44 (47.4)	34 (36.6)	20 (21.5)
If the student cannot write the assignment well, it is possible to copy parts of a similar paper already published in that language and translate it into Arabic.	3.10	1.16	35 (37.6)	28 (30.1)	30 (32.3)
I find it normal to help my colleagues during the exam by giving them advice.	3.58	1.14	54 (58.1)	21 (22.6)	18 (19.4)
I will clarify the ambiguity at a particular moment to a colleague if he asks me during the exam.	3.52	1.18	53 (57.0)	19 (20.4)	21 (22.6)
The large number of sources of information (Books, conference papers, reports, interviews, etc.) makes it difficult to cite them correctly.	3.55	1.10	54 (58.1)	23 (24.7)	16 (17.2)
I do nothing illegal if a colleague gives me permission to copy from his paper.	2.88	1.31	36 (38.7)	15 (16.1)	42 (45.2)
I cannot write an assignment without translation from English sources.	3.47	1.02	47 (50.5)	31 (33.3)	15 (16.1)
The short exam time prompts me to look at the educational materials during the exam in order to finish the answer quickly.	3.37	1.18	46 (49.5)	22 (23.7)	25 (26.9)

Table 5 presents the means, SDs, frequencies and percentages of plagiarism items indicating the percentage of agreement and disagreement.

Regarding plagiarism practices, students were found to disagree with the use of plagiarism checkers such as Turnitin which is used by Sultan Qaboos University staff (M = 3.28). Additionally, they consider plagiarism checkers an unfair assessment tool that affects their grades in the assignments (M= 3.70). The students also lacked the skills needed to cite the information they used for their work. For example, students indicated that it is difficult to cite different types of resources (M = 3.55). They do not need to cite videos that they used to obtain information (M= 3.22). They are not accustomed to the citation styles which leads them not to cite the work appropriately (M = 3.40).

Unethical practices followed by the students included direct lifting and translating text in the English language without referring to the original source (M =3.47 and 3.10). A few students were also found to copy text from their friends which is considered a break of university rules and ethical practices (38.7%).

Online exams were also affected by the lack of ethical competencies. The data indicated that students help each other during the online exams (M= 3.52) as they consider it a normal practice (M= 3.58). Moreover, many students stated that they might use external sources of information during the exams to find answers to complex questions (M = 3.37). The data indicated a need to revise the students' ethical skills and provide them with a program that improves their ethical competencies in e-learning.

3.3. Gender Differences in Ethical E-Learning

Q_3. Are there gender differences in e-learning practices and ethical practices?

A t-test was conducted to find gender differences in both e-learning practices and ethical practices to answer this question.

Table 6. Gender differences in ethics of e-learning, N= 93.

Subscales		Sum of squares	Df	Mean square	F	P
Plagiarism	Between groups	264.513	1	264.513	2.867	0.094
	Within groups	8395.552	91	92.259		
	Total	8660.065	92			
E-learning practices	Between groups	2.204	1	2.204	0.021	0.886
	Within groups	9682.786	91	106.404		
	Total	9684.989	92			
Total score	Between groups	315.002	1	315.002	1.078	0.302
	Within groups	26595.277	91	292.256		
	Total	26910.280	92			

Table 6 reveals that gender differences in ethical competencies were detected. The F values were insignificant because the p values were > 0.05. Concerning plagiarism, this result can be attributed to the similar inclination of both males and females to search for solutions while completing assignments or writing research proposals. Consistent with this result, Pagaddu (2021) found that both males and females have similar levels of plagiarism.

However, other studies found that female students adopted more negative attitudes towards plagiarism than male students (Jereb, Urh, Jerebic, & Šprajc, 2018).

4. Discussion

Our results have shown that e-learning practices in the information studies department during COVID-19 had positive and negative effects. In general, the university has issued an e-learning practices policy that aims to guarantee the fairness of the education process within the e-learning context. Nevertheless, the students lacked training on best practices in e-learning which affected their experience during this period. The problem confronting the students in the e-learning system is mainly related to trust. Students were discovered to have a low level of confidence and this lack of trust encouraged them to disregard the guidelines established by the institution for online learning. Trust between students and the staff allows them to avoid unacceptable practices and follow the rules. They understand that each student will follow the same rules and the final evaluation will be fair. However, as the students do not trust the system's effectiveness or the assessment process, they lean towards unacceptable practices. For example, the finding showed that students mix acceptable e-learning practices with unacceptable practices such as attending lectures to make sure they are registered on the attendance list, not listening to the lecture and using phones to join the lecture. Trust in e-learning was regarded as a challenge that led to better practices and increased the efficiency of the teaching process (Dwyer & Marsh, 2016; Seufert, 2012). Students should be empowered to face these academic challenges and to be academically resilient (Khalaf, 2014; Khalaf & Alshammari, 2023).

Students lacked training on how to engage in the learning system or deal with different assessments which led to the formulation of the belief that e-learning is inferior to face-to-face lectures which increased their engagement with the teaching staff and gave them more skills. In many courses, including library and information sciences, some of the curriculum is meant to be taught face-to-face. The students need to practice cataloguing and classifying the actual material in the teaching labs. In general, the e-learning system at Sultan Qaboos University was not meant to be an alternative to traditional learning. However, the pandemic forced the staff to shift to an e-learning approach without prior adjustment of the curriculums which increased the number of issues during this transition phase. Many studies have indicated several challenges that faced the shift towards e-learning during COVID-19 that were not different from the issues indicated by the students at Sultan Qaboos University including the negative perception of the students (Abbasi, Ayoob, Malik, & Memon, 2020; Alhumaid, Ali, Waheed, Zahid, & Habes, 2020; Amarneh, Alshurideh, & Al Kurdi, 2021).

Students lack ethical competencies in e-learning. The study's findings indicated that students' behaviour during e-learning includes many unacceptable practices such as cheating, plagiarism, copying from friends and translating information from English sources. During the shift to e-learning, the university instructed the students to follow several guidelines that guarantee fair educational practices. In addition, students were trained on using references and citing information. However, the students' responses indicated they lacked ethical skills which compromised the education process. Although there were e-learning rules at Sultan Qaboos University, their general efficacy is in question due to the behaviour of the students and their capacity to adapt to the new learning techniques.

Additionally, the faculty members were provided with many training workshops in e-learning practices and available tools that can be used to ensure academic rigor and prevent cheating and unethical practices in online assessments. Baticulon et al. (2021) and Nagi (2006) indicated that students who shifted to the e-learning style confronted many barriers including the ability to adapt to this learning style, ethical learning practices, personal integrity and accountability. Shifting to e-learning requires preparing the students for the new style including enhancing their ethical competencies and building their technological and personal skills to help them accommodate the change.

5. Conclusion

The results address questions of scientific ethics pertaining to plagiarism and draw upon the guidelines established by the American Psychological Association (APA) as a reference point. The authors aimed to offer an ethical perspective on issues related to research methodologies with a particular emphasis on the scientific legitimacy of texts produced by students. However, these guidelines should be explored in greater practical detail, particularly with regard to the presentation of results in scholarly manuscripts.

Information studies department students confronted many barriers while shifting to e-learning during COVID-19. Moreover, students lack the ethical skills required for the e-learning environment. From the findings, we can conclude that students consciously and unconscionably engage in unethical behavior. Hence, students need extensive training for the e-learning environment after COVID-19. The university suggested many guidelines to guarantee the fairness of the educational process in order to prepare students for e-learning. However, policies and guidelines are not enough to guarantee that students will comply with the requirements of e-learning. Students must be trained on e-learning practices to ensure they follow the best educational practices. Students need to follow ethical practices through several workshops and seminars. Appropriate intervention and enhancing students' ethical competencies will lead to better practices in the future.

The present study emphasizes the significance of ethical competence and research methodologies in the academic domain. Although our approach is centered on a specific teaching institution "Sultan Qaboos University" we assert that it is crucial to continue exploring these topics to encourage ethical conduct and ensure scientific legitimacy in student writing. Ethical training is not the sole solution. Higher education institutions must implement a teaching program that addresses research methodologies and promotes ethical reasoning, decision-making, communication and behavior. Additionally, the implications of our findings are not limited to the e-learning context but extend to all forms of teaching. We hope this study can contribute to the ongoing discussion on ethical competence and research methodologies in education and encourage further research and development in this area.

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