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PERCEPTIONS OF SAUDI UNDERGRADUATE STUDENTS' EXPERIENCES TOWARD ONLINE AND TRADITIONAL LEARNING: MIXED METHOD STUDY

(Research article)

Burhan Ozfidan [a] 1, Jennifer Mizell Marks [b]

[a,b] *Florida Gulf Coast University, 10501 FGCU Blvd, Fort Myers, FL 33965, USA*

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Abstract

This study delves into the perceptions of Saudi undergraduate students regarding the expeditious transition to online learning necessitated by the COVID-19 pandemic. Employing a mixed methods approach, it scrutinizes the experiences of students in both online and traditional learning modalities. In quantitative data analysis, the linear relationships between dependent and independent variables were clarified by applying multiple regression approaches. The qualitative data analysis entailed a multi-step process beginning with descriptive coding to systematically categorize patterns emergent from participants' perspectives on online and traditional learning. The findings unveil nuanced strengths and weaknesses inherent in each approach. Online learning exhibits cost-effectiveness, flexibility, accessibility, and heightened time management acumen, albeit at the expense of diminished interactivity, motivation, discipline, and academic attainment. Conversely, traditional learning environments foster interactive pedagogical atmospheres, bolstered motivation, social engagement, superior feedback mechanisms, and enhanced academic rigor and achievement. Nevertheless, traditional learning is encumbered by inflexibility, resource constraints, and challenges in time management. Participants express a penchant for the motivational dynamics inherent in traditional learning, underscored by meaningful interactions with instructors and peers, juxtaposed against the rigidity of prescribed temporal parameters. They perceive this temporal rigidity as encumbering their ability to juggle concurrent commitments effectively.

Keywords: Online learning, traditional learning, Saudi undergraduate students, COVID-19

1. Introduction

Scholars have underscored the pivotal role of students' perceptions in delineating effective modalities of online and traditional learning amidst the backdrop of the Covid-19 pandemic. Marsh's (2007, 1984) seminal work illuminates the reliability assessment of students' perceptions in validating

[1]Corresponding author: Burhan Ozfidan. ORCID ID.: https://orcid.org/0000-0002-2098-3409
E-mail bozfidan@fgcu.edu
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pedagogical practices within university settings. Marsh (2007) contends that "student ratings are clearly multidimensional, quite reliable, reasonably valid…, and are seen to be useful to students, faculty, and administrators" (p. 131). Effective learning, as posited, is contingent upon contextual nuances and warrants examination across diverse settings and criteria for robust validation (Fayez et al., 2023; Marsh, 1984; Ozfidan & Burlbaw, 2020). Both online and traditional learning modalities share intersecting realms of challenges and successes. Ozfidan et al. (2021) affirm the indispensable role of social presence in fostering communicative efficacy within educational institutions. Nonetheless, their scrutiny extends to elucidating the impact of social presence within online spheres, elucidating its role in engendering a sense of "realness" in virtual interactions.

The current study adopts a mixed-methods approach to explore and delineate participants' perceptions vis-à-vis online and traditional learning modalities. Specifically, it aims to investigate the experiences of undergraduate students in the Kingdom of Saudi Arabia in response to the rapid transition to online learning precipitated by the global Covid-19 pandemic. This inquiry accentuates the dichotomies inherent in online versus traditional learning and seeks to gauge student perspectives on the efficacy of these modalities. The significance of this study lies in its capacity to elucidate the factors contributing to student satisfaction amidst the exigencies of online and transitional learning paradigms during the Covid-19 pandemic.

2. Literature Review

COVID-19 brought about global changes, especially within the world of education both at the primary and secondary levels (Alkhresheh, 2021; Al Lily et al., 2020; Almusharraf & Khahro, 2020; Aziz Ansari et al., 2021; Aristeidou & Cross, 2021). Schools throughout the world were forced to close their doors and swiftly shift from traditional face-to-face learning to emergency remote teaching (ERT). ERT is different from online learning as it is implemented in response to a crisis or disaster and is intended to be temporary, forcing instructors to rapidly switch teaching pedagogies that involve skill sets they may not have (Hodges et al., 2020). The transition from traditional face-to-face learning to ERT was more difficult in some countries than others, especially those countries that did not already have a strong online education presence. The Kingdom of Saudi Arabia (KSA) is one such country. In order for students to continue their higher education instruction, all KSA schools became online institutions in an effort to reduce the spread of the coronavirus (Khalid Aladsani, 2022; Ashour, 2021).

The concept of online learning in the Kingdom of Saudi Arabia did not begin with the COVID-19 pandemic (El-Sayed Ebaid, 2020; Tamim, 2018; Ashour, 2021). Online learning was first adopted in the 1990s with several blended learning and online courses provided at many KSA universities (El-Sayed Ebaid, 2020; Hamdan, 2014; Tamim, 2018). However, the push for increased online learning in KSA has been a recent phenomenon as the population of youth has increased along with the number of adults who are interested in pursuing higher education (Hamdan, 2014). For many students, the accessibility, flexibility, and improvement of higher-order thinking skills related to online learning are highly enticing (Tamim, 2018). Increased accessibility allows prospective students in rural areas access to learning that traditional higher education settings do not have. With the flexibility of most asynchronous online courses, non-traditional students are given the option to earn their degrees online while continuing to support their families through full-time employment. Additionally, those students who crave independent thinking and high-order thinking skills are given more opportunities to hone these skills in online learning versus traditional lecture-style courses.

Traditional higher education began in the Kingdom of Saudi Arabia in the 1950s (Alabdulkarem et al., 2021; Hamdan, 2014; Majed, 2011). Since then, there has been great growth and development in the higher education system (Smith & Abouammoh, 2013). The number of universities in the Kingdom of Saudi Arabia has rapidly grown from seven in 1995 to 32 in 2009 (Alnassar & Dow, 2013). In an effort to further promote higher education, there are no fees for students enrolled in public universities (Majed, 2011; Smith & Abouammoh, 2013). Those who chose to attend a private KSA university are provided government scholarships or "soft" loans (Smith & Abouammoh, 2013). Even a majority (85%) of students who attend university internationally are now supported by the King Abdullah Scholarship Program which was founded in 2005. This program provides students with funds to cover their travel, tuition, and living expenses for both the students and their families while the student is enrolled internationally (Majed, 2011; Smith & Abouammoh, 2013).

For most of its existence, higher education in KSA has been founded on a traditional model with students attending classes on campus. This environment has promoted a bank-like system where the instructors deposit information to the students while serving as the sole provider of knowledge (Hamdan, 2014). While this approach is not uncommon it does tend to leave little room for students to become critical thinkers (Alnassar & Dow, 2013; Hamdan, 2014). The most common teaching pedagogy in this bank-like system is that of lectures and teacher-centered assessments, such as examinations based on recall and memorization. Often the information is presented in one-way communication with little or no feedback from instructors, especially after the final examination (Darandari & Murphy, 2013).

As the world reacted to the COVID-19 pandemic educators were forced to quickly shift from their traditional face-to-face learning style to teaching their students online (Alkhresheh, 2021; Al Lily et al., 2020; Almusharraf & Khahro, 2020; Aziz Ansari et al., 2021; Ozfidan & Hos, 2023). Khan et al., (2021) found that in order for online learning to be most effective for students, instructors need adequate training not only in the design and organization of the course but also in the development of assessments. For many instructors, this rapid switch in instructional delivery brought an array of emotions from excitement in their ability to teach from any location to depression when presenting on a platform that they were unfamiliar with (Khalid Aladsani, 2022). This uncertainty among instructors had the potential to negatively impact students who looked to their instructors for guidance through this time of uncertainty.

In a study by El-Sayed Ebaid (2020), 106 accounting students attending one of the oldest and largest KSA universities expressed their dissatisfaction with the rapid switch to online learning as a result of the COVID-19 pandemic. According to the findings, the students who participated in the study felt that they did not benefit from the increased flexibility of online learning or the changes in communication both with instructors and peers. The study participants identified two major disadvantages to online learning. They included a lack of human contact and technical issues or overreliance on computers. The students in this study indicated a greater preference for traditional face-to-face learning. One possible reason for such strong negative feelings toward online learning could be related to the abrupt switch to online learning as a result of COVID-19 which did not allow for much time for students to adjust to the new learning format.

In contrast, Almusharraf and Khahro's (2020) study indicated that undergraduate students at one private, non-profit institution of higher education in KSA were satisfied with many aspects of their online learning experience during the COVID-19 pandemic. The survey gained insight into student perceptions of their online learning environment, the support provided by their school, and what learning method or platform they felt was the most effective. The findings suggested that these students were satisfied with

both the learning platforms used and the support they received from faculty and staff. They were merely content with the assessment types utilized during their season of online learning.

These contrasting studies show that many factors impact students' feelings toward online learning (Almusharraf & Khahro 2020; El-Sayed Ebaid, 2020; El-Dakhs, et al., 2024). Regardless, of whether a course is created as an online learning course or is a result of emergency remote teaching (ERT) several key factors for student success exist. First and foremost, strong network connectivity is necessary for both instructors and students as this is a major drawback for learners (Asif et al., 2022; Lapitan et al., 2021; A et al., 2014). Studies indicate while asynchronous online learning provides students with the greatest amount of flexibility, and freedom of time allocated to studies and promotes self-discipline, this method does not always provide adequate communication and feedback from instructors (Lapitan et al., 2021). It is necessary for instructors to provide prompt feedback, maintain open lines of communication, and adjust their instruction to meet the needs of their students (Aziz Ansari et al., 2021; Asif et al., 2022; Kohnke & Moorhouse, 2021). Lapitan et al. (2021) suggested that for both instructors and students organization is key to successful online learning. Posting weekly objectives, running lists of upcoming due dates, and links to additional online resources help to promote a more effective online learning environment.

While online learning is not a new concept it became a widely discussed topic when educational systems around the world closed their doors in an effort to minimize the impacts of COVID-19. Higher education institutes in the Kingdom of Saudi Arabia were no exception. The majority of students and instructors were thrust into online learning which is far outside the comfort zone of traditional face-to-face learning. While there were problems that arose due to this sudden change in instruction most students found online learning to be beneficial to their education and were forced to become more self-motived, disciplined learners.

2.1. Theoretical Framework

This study's conceptual framework draws upon two theoretical perspectives: Self-Determination Theory (SDT) and Constructivist Learning Theory. Wehmeyer et al. (2003) asserted that self-determination theories fundamentally explore individuals' volitional control over their lives, encompassing the decisions and actions they undertake (p.180-181). Given the disruptive impact of the COVID-19 pandemic on traditional educational settings, where students experienced a loss of control over their learning environments, SDT offers a lens through which to examine the motivational dynamics underpinning students' adaptation to remote learning. As delineated by Ryan and Deci (2017), SDT emphasized three core psychological needs—autonomy, competence, and relatedness. Autonomy denotes the capacity for self-regulation in response to internal drives and external circumstances. Competence pertains to the desire for mastery and efficacy within one's activities. Relatedness underscores the significance of social connections and interpersonal relationships. Through the prism of SDT, this research aims to elucidate the motivational impetus propelling students' navigation of the abrupt shift from in-person instruction to emergency remote teaching.

Concurrently, the inquiry is informed by Constructivist Learning Theory, which elucidates how individuals construct knowledge and engage in social interactions within learning contexts. This theoretical framework traces its roots to seminal works by scholars such as Vygotsky and Piaget, who expounded on the cognitive processes involved in knowledge acquisition (Bada, 2015). Constructivist principles permeate instructional designs across both traditional and online learning modalities. Tam (2000) posited that constructivist learning environments mirror real-world settings characterized by

adaptable learning structures and collaborative interactions. This conceptualization readily applies to online learning, where diverse cohorts of learners, drawn from varied backgrounds and life experiences, collaboratively construct knowledge within virtual classrooms. Building upon findings by Macias et al. (2021) and Alismaiel et al. (2022), which underscored the enhanced engagement resulting from collaborative, constructivist pedagogies, the present study situates the sudden transition to remote learning within the Kingdom of Saudi Arabia as an opportunity for mutual learning among educators and students alike, as they navigate the intricacies of this novel educational landscape.

3. Method

To comprehensively gauge the participants' perceptions regarding online and traditional learning, an explanatory mixed-method approach was adopted, chosen for its efficacy in capturing both quantitative and qualitative data. This methodology enables a nuanced exploration of the multifaceted dimensions of participants' experiences, offering a more comprehensive understanding than either approach alone. The initial employment of a survey instrument in the first phase facilitates the systematic collection of quantitative data, allowing for the quantification of participants' perceptions and the identification of overarching trends and patterns. Subsequently, the incorporation of open-ended questions within the survey instrument in the second phase enriches the data by soliciting qualitative insights. This qualitative component affords participants the opportunity to articulate their experiences in greater detail, elucidating nuances, motivations, and contextual factors that may not be captured through quantitative measures alone. By synthesizing quantitative and qualitative data, this mixed-method approach enhances the robustness and validity of the findings, providing a more comprehensive and nuanced understanding of participants' perspectives on online and traditional learning modalities.

3.1. Instrument

The survey instrument commenced with a demographic section comprising five inquiries aimed at capturing essential participant characteristics. Subsequently, participants engaged with a series of 16 Likert-scale questions, each employing a five-point scale ranging from "strongly disagree" (1) to "strongly agree" (5). These questions were meticulously crafted to assess participants' attitudes and perceptions regarding online and traditional learning modalities. Drawing upon established literature, the formulation of these Likert-scale items was informed by seminal works such as those by Abrami et al. (1990), Cohen (1981), Feldman (1984), Hara & Kling (2000), and Marsh (1987), ensuring the incorporation of validated constructs and methodologies. Finally, the survey concluded with three open-ended questions designed to elicit qualitative insights into participants' understanding and sentiments regarding online and traditional learning. These open-ended inquiries provided participants with the opportunity to articulate their experiences in greater detail, enriching the dataset with qualitative data essential for a comprehensive analysis. Additionally, following an initial test run of the questionnaire, refinements were made to enhance its clarity, comprehensiveness, and relevance. Notably, particular attention was given to refining the survey items based on feedback from the control group, thereby ensuring the validity and reliability of the instrument.

3.2. Participants and Design

The participants, according to the IRB procedures (#2021-03-0034), were informed to be aware of the study's protocol, which included "voluntary nature and the measures to ensure confidentiality and anonymity of their responses." The study includes a total of 482 participants from two different institutions in Saudi Arabia. Of these participants, 225 of them were male and 257 of them were female,

and they all were undergraduate students. Furthermore, 205 of the participants were from the college of science and art (e.g. psychology, sociology, political science), 122 of them from the college of education, 75 of them from the college of business, and 80 of them from the college of engineering (e.g. Civil, Computer, Electrical engineering). Of the 482 participants, only 103 of them meaningfully responded to the open-ended questions. However, the researchers only used 38 of the responses for the qualitative part of the current study.

3.3. Reliability and Validity

The reliability and validity of the survey instrument were meticulously assessed to ensure the robustness and accuracy of the data collected. Initially, a pilot study was conducted with 30 participants randomly selected from the larger sample pool of 482 participants enrolled in the study. This pilot study served to evaluate the feasibility and comprehensibility of the survey instrument. Subsequently, Cronbach's alpha coefficient was computed to analyze the internal consistency and reliability of the scale. The average Cronbach's alpha score for the 16 Likert-style items was found to be $\alpha = .88$, surpassing the minimum threshold of .70 as recommended by Nunnally (1978) for acceptable reliability. Thus, the survey instrument demonstrated satisfactory reliability in measuring participants' perceptions of online and traditional learning modalities.

In addition to assessing reliability, content validity measures were employed to ensure the instrument's alignment with the intended constructs and the consistent interpretation of items by respondents. To this end, the survey instrument underwent rigorous scrutiny by two experts in the field of educational technology. These experts meticulously reviewed each item to verify its accuracy and relevance in measuring the targeted constructs. Any ambiguities or discrepancies identified during this review process were promptly addressed through item refinement to enhance the instrument's content validity. This thorough validation process ensured that the survey instrument accurately represented the constructs under investigation and could be consistently understood by all respondents, thereby bolstering the validity of the data collected. Moreover, it is pertinent to note that the final sample size and demographic characteristics of the participants should be elaborated upon to provide a comprehensive understanding of the study's reliability and validity assessments.

3.4. Data Collection

Data collection took place during the fall of 2021 utilizing the Qualtrics online survey platform. The survey instrument, meticulously prepared by the researchers, was distributed electronically via email to the department chairs of the colleges within the participating institutions. A total of 2,051 potential participants were targeted for inclusion in the study. However, ultimately, only 482 individuals completed the survey, resulting in a response rate of 23.6%. Prior to commencing the survey, each participant was required to provide informed consent via the Qualtrics platform, thereby ensuring adherence to ethical research practices. This study was approved by the Institutional Review Board (IRB) of a higher education institution in Saudi Arabia, underscoring the commitment to ethical standards, voluntary participation, and the protection of participants' rights throughout the data collection process.

3.5. Data Analysis

In quantitative data analysis, the linear relationships between dependent and independent variables were clarified by applying multiple regression approaches. Dupont and Plummer (1998) have explained that multiple regression analysis is a reliable methodological technique for analyzing the linear relationships between two or more variables. But the viability of this strategy depends on a number of crucial presumptions: (1) Linearity: a linear relationship between the independent and dependent

variables; (2) Independence: a lack of correlation between observations; (3) Homoscedasticity: a requirement that the variance of residuals be constant at all levels of the independent variables; (4) Normality: residuals should be roughly normally distributed; and (5) Absence of multicollinearity: independent variables should not be highly correlated with one another. These assumptions were assessed prior to conducting the regression analysis to confirm the appropriateness of the method.

Conversely, qualitative data analysis entailed a multi-step process beginning with descriptive coding to systematically categorize patterns emergent from participants' perspectives on online and traditional learning. The researchers employed interrater reliability to ensure consistency in the coding process, employing two independent raters to code the data transcriptions. Interrater reliability serves as a critical indicator of the consistency in the application of a rating system across multiple coders. Subsequently, thematic analysis was employed as a descriptive procedure to distill the relevant codes into overarching themes, thereby capturing the essence of the phenomenon under investigation. This iterative process of qualitative analysis facilitated a comprehensive exploration of the qualitative data, enabling the identification of recurrent themes and the extraction of meaningful insights from participants' narratives.

4. Findings

4.1. Quantitative Analysis

This study employed regression analysis to explore the associations between various dimensions of online and traditional learning environments and respondents' perceptions. The results are presented below, along with interpretations to aid understanding.

The online learning positively associated with comfortability ($\beta = .21$, $t = 3.20$, $p = .003$), cost-effective ($\beta = .27$, $t = 4.11$, $p < .002$), flexibility ($\beta = .34$, $t = 5.51$, $p < .002$), accessibility of resources ($\beta = .22$, $t = 3.32$, $p < .001$), time-management skills ($\beta = .26$, $t = 3.51$, $p < .001$), understanding course topics ($\beta = .20$, $t = 2.44$, $p < .000$), link course topics ($\beta = .19$, $t = 2.67$, $p < .003$), and quality of feedback ($\beta = .31$, $t = 3.61$, $p < .003$). The online learning negatively associated with interactive learning environment ($\beta = -.14$, $t = -2.23$, $p = .03$), motivation ($\beta = -.17$, $t = 2.61$, $p = .04$), discipline ($\beta = -.11$, $t = -3.12$, $p = .01$), social interaction ($\beta = -.21$, $t = -2.59$, $p = .04$), academic success ($\beta = -.12$, $t = 2.73$, $p = .02$), effects of teacher roles ($\beta = -.19$, $t = -1.99$, $p = .04$), connect important course goals ($\beta = -.18$, $t = -3.12$, $p = .01$), and learning course activities ($\beta = -.22$, $t = -3.12$, $p = .01$). The traditional learning positively associated with interactive learning environment ($\beta = .31$, $t = 3.51$, $p < .003$), learning activities ($\beta = .17$, $t = 2.81$, $p = .002$), motivation ($\beta = .21$, $t = 3.41$, $p = .003$), linking course topics ($\beta = .23$, $t = 4.11$, $p < .001$), social interaction ($\beta = .27$, $t = 2.01$, $p < .000$), connecting important course goals ($\beta = .19$, $t = 2.21$, $p = .003$), effects of teacher roles ($\beta = .25$, $t = 3.21$, $p = .001$), quality of feedback ($\beta = .14$, $t = 2.72$, $p < .001$), discipline ($\beta = .26$, $t = 3.32$, $p < .001$), understanding course topics ($\beta = .23$, $t = 3.32$, $p = .000$), and academic success ($\beta = .29$, $t = 2.07$, $p = .002$). The traditional learning negatively associated with comfortable ($\beta = -.11$, $t = 2.32$, $p < .01$), flexibility ($\beta = -.18$, $t = 2.09$, $p < .01$), cost-effective ($\beta = -.12$, $t = 3.02$, $p < .000$), accessibility of resources ($\beta = -.15$, $t = -2.12$, $p = .01$), and time-management skills ($\beta = -.14$, $t = 2.74$, $p < .01$).

Table 1. Summary of multiple regression analysis

Dependent Variable	Predictors	*B*	*SE B*	β	Adj. R^2	*F*
Clearly link course topics	Online	.04	.02	.19*	.03	2.57
	Traditional	.06	.07	.23**		
Clearly connect important course goals	Online	-.03	.01	-.18	.08	3.28**
	Traditional	.11	.03	.19*		
Clearly provide course learning activities	Online	-.05	.03	-.22	.07	6.11***
	Traditional	.05	.04	.17*		
Understanding course topics	Online	.06	.02	.20**	.11	4.45***
	Traditional	.03	.03	.23*		
Interactive learning environment	Online	-.12	.04	-.14	.05	8.55***
	Traditional	.02	.07	.31*		
Quality of feedback	Online	.05	.02	.31**	.12	4.78***
	Traditional	.08	.03	.14**		
Effects of teacher roles	Online	-.01	.11	-.19	.10	7.01***
	Traditional	.09	.04	.25**		
Academic success	Online	-.11	.03	-.12	.04	4.41***
	Traditional	.05	.07	.29**		
Comfortable	Online	.03	.04	.21**	.06	6.09***
	Traditional	-.04	.02	-.11		
Motivation	Online	-.06	.08	-.17	.13	5.41***
	Traditional	.03	.01	.21**		
Discipline	Online	-.12	.03	-.11	.02	3.65**
	Traditional	.05	.03	.26**		
Cost-effective (Cost of learning)	Online	.03	.11	.27**	.14	3.61**
	Traditional	-.06	.02	-.12		
Social interaction	Online	-.03	.03	-.21	.13	3.91**
	Traditional	.13	.05	.27**		
Flexibility	Online	.02	.08	.34**	.07	5.57***
	Traditional	-.06	.02	-.18		
Accessibility of resources	Online	.08	.02	.22**	.10	4.21***
	Traditional	-.03	.11	-.15		
Time-management skills	Online	.09	.05	.26**	.08	2.59
	Traditional	-.01	.03	-.14		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

In summary, respondents emphasized the positive impact of online learning on comfortability, cost-effectiveness, flexibility, accessibility of resources, and time-management skills. However, concerns were raised regarding its lack of interactivity, motivation, discipline, academic success, teacher roles, and alignment with course goals and activities.

On the other hand, traditional learning was praised for its interactive environment, engaging learning activities, motivation, social interaction, teacher roles, feedback quality, discipline, understanding of course topics, and academic success. Yet, participants noted drawbacks related to comfort, flexibility, cost-effectiveness, resource accessibility, and time-management skills.

These findings underscore the nuanced differences between online and traditional learning environments, highlighting strengths and weaknesses inherent in each modality. Further graphical

representation of the Likert scale scores for each question could enhance accessibility and facilitate comprehension, particularly for readers with limited numerical proficiency.

4.2. Qualitative Analysis

There are six emerged themes from the thematic analysis: flexibility and accessibility, interaction and academic success, self-motivation and discipline, feedback, lower costs, and teacher role and time management.

4.2.1. Flexibility and accessibility

The majority of the participants highlighted that online learning is quite flexible compared to traditional learning. One of the participants of the study emphasized that online learning is able to mold with the student's schedule and allow them to log into their course at any time that works best for them, as opposed to having to attend a lecture at a particular time. Another participant stated that

> Online learning follows a weekly format where we are expected to log in, read course materials, contribute to online class discussions, and complete assignments prior to the beginning of the next week. With this way, we are having plenty to do for each class—but we will have more options for fitting this work in around other commitments.

Participants highlighted that traditional learning is an option for students who have a little more freedom in their schedules. Some of the participants said that traditional learning has some flexibility regarding scheduling because some institutions offer night classes or some institutions offer classes that follow a schedule where they meet only once per week. Participants also highlighted that online learning provides easy access to resources regardless of time. In other words, they affirmed that they can access any of the course resources at any time throughout the semester.

4.2.2. Interaction and academic success

Most of the participants stated that social interactions with instructors and other students are not as common as in online courses. Only a few of the participants highlighted that interaction happens via video chat or through online discussion posts. One of the participants said that "the lack of peer connection and technological issues seem to be significant problems for us during online learning and could contribute to our issues with engagement." Most of the participants also highlighted that they did not have healthy communication between instructors and students. However, most of the participants stated that online courses have an affirmative impact on students' academic success in terms of learning motivation, learning engagement, and learning achievement.

Traditional learning, according to most of the participants, is the better option for students who thrive on face-to-face communication. One of the participants said that "seeing and interacting with your instructors on a regular basis can be motivating for some—it's a little easier to go the extra mile if you know your instructor is likable and invested in your education." Overall, most of the participants highlighted that traditional courses have too many social interaction opportunities.

4.2.3. Self-motivation and discipline

Most of the participants highlighted that students need to be highly self-motivated during online courses. One of the participants stated that "courses require us to keep up on required readings and assignments, but some of us may struggle to stay motivated when learning from the comfort of our

home." Some of the participants emphasized that they, in online courses, develop different strategies for staying up to date on their coursework. When it comes to discipline and motivation, traditional education does have an advantage in the eyes of many. One of the participants stated that "we in traditional, on-campus settings have more opportunities to be reminded of upcoming assignments, which can help if we tend to procrastinate on large, time-consuming assignments." Some of the participants highlighted that traditional courses do have an advantage in the eyes of many when it comes to motivation and discipline.

4.2.4. Feedback

Participants of the study highlighted that clear and constructive feedback can develop students' growth and provide opportunities while sharpening critical thinking abilities. Some of the participants stated that feedback helps motivate them to continue with difficult material, take creative risks, and investigate innovative perceptions by creating a springboard for learning. Most of the participants highlighted that feedback in online courses is more important than in traditional courses. One of the participants stated that

> As coronavirus-related school closures drove more students to attend class remotely, most of the educators understood how to give efficient and effective feedback in the online classrooms; however, there were also some educators who always taught f2f courses and they were not aware of the quality of the feedback.

Overall, many of the participants highlighted that students usually benefit from receiving clear and constructive peer feedback, working together in groups, and debating with one another.

4.2.5. Lower costs

Most of the participants highlighted that online learning is usually less expensive when compared to traditional learning carried out face-to-face in institutions. One of the participants stated that "this is to account for the lack of access to infrastructure, libraries, labs, and other on-campus facilities that traditional courses have access to." According to another participant, students in traditional learning usually need to pay additional fees over their tuition and need to cover their transport, accommodation, and other course materials required for the course; however, online learning does not consist of too much additional payment.

4.2.6. Instructor role and time management

Participants highlighted that the instructors should have an active role in online discussions. According to one of the participants, "instructors need to share what they are learning about the subject. They might also have to complete all or parts of some assignments, sharing their work with the students." This forms clearly a nurturing and healthy online learning community.

Time management is also another important factor in online learning. One of the participants highlighted that "one of the most helpful tips for online learning is to be deliberate with your time." Another participant stated that we need to prioritize our work and we should make smart decisions regarding how to wisely spend our time.

5. Discussion

Throughout this mixed methods study, the participants' perceptions regarding online and traditional learning were thoroughly explored within the context of undergraduate education in the Kingdom of Saudi Arabia (KSA), particularly in response to the swift transition to online learning prompted by the COVID-19 global pandemic. While previous research has investigated aspects of both traditional and online learning in KSA, as well as best practices in online education, there remains a

dearth of mixed methods studies on this specific topic. Therefore, this study aimed to contribute to the existing literature by examining the impact of online learning in KSA amid the COVID-19 pandemic. In this section, we discuss the themes identified in relation to the review of literature, findings from open-ended qualitative questions, and quantitative survey responses.

Quantitative analysis revealed that students perceive online learning positively due to factors such as increased flexibility and enhanced accessibility to resources, both of which were viewed negatively in the context of traditional learning. These perceptions were further corroborated by insights gleaned from open-ended qualitative inquiries. Participants articulated the freedom to engage with course materials and fulfill assignments according to their personal schedules, as well as the immediate access to resources throughout the semester. These findings resonate with prior research, such as Tamim (2018), which underscores how enhanced accessibility and flexibility in online learning cater to diverse student needs. Similarly, studies by Lapitan et al. (2021) emphasize the benefits of flexibility and autonomy afforded by asynchronous online learning. However, it is noteworthy that while flexibility and accessibility are deemed conducive to online learning success, the same cannot be unequivocally asserted for interactive learning and academic achievement.

In this study, participants expressed concerns about the negative impact of online learning on interactive engagement and academic success, attributes they perceived as strengths of traditional learning environments. Despite some participants engaging in interactions with instructors and peers through video conferencing and online discussions, many lamented the absence of face-to-face communication and real-time interaction, which they deemed essential for meaningful engagement. This sentiment aligns with findings from El-Sayed Ebaid's (2020) study, where participants identified the lack of human contact as a major drawback of online learning. Nonetheless, online learning has been associated with enhancements in higher-order thinking skills, as students are tasked with assuming greater responsibility for guiding their learning and fostering independent thought processes (Tamim, 2018; Whitelock et al., 2021). The heightened sense of responsibility for learning correlates directly with students' self-motivation and academic discipline.

Further analysis of quantitative data revealed that participants perceived traditional learning environments as more conducive to fostering motivation and discipline for coursework completion compared to online learning. Participants elaborated on this aspect in qualitative responses, citing challenges in maintaining motivation while learning remotely and the perceived lack of reminders for upcoming assignments compared to traditional settings. Some participants also noted a decline in academic discipline when not under the direct supervision of face-to-face instructors. Lapitan et al. (2018) emphasize the importance of instructors setting clear weekly objectives and communicating assignment due dates to facilitate student self-discipline and motivation. Prompt feedback and open channels of communication between instructors and students were also identified as crucial for promoting motivation and self-discipline (Aziz Ansari et al., 2021; Asif et al., 2022). Participants in this study echoed the significance of instructional feedback in their learning experiences.

Both peer and instructor feedback emerged as pivotal for successful online learning, although participants reported a preference for the quality of feedback received in traditional learning environments. While participants acknowledged the importance of feedback in online learning, they noted inconsistencies in its provision by instructors. Qualitative analysis underscored the motivational benefits of quality feedback, which encourages creative risk-taking and fosters innovative thinking. While participants viewed feedback more positively in traditional settings, Darandari and Murphy (2013) highlight the limited feedback typically associated with traditional lecture-based instruction. However, Lapitan et al. (2021) caution that asynchronous online learning may not always afford adequate instructor

feedback. Participants in this study also recognized the value of peer feedback and collaborative group work, which correlates with increased self-discipline and motivation.

Despite government funding support for higher education in Saudi Arabia, participants highlighted the cost-effectiveness of online learning, citing savings on transportation and on-campus facilities fees compared to traditional learning. Quantitative analysis further underscored the negative impact of instructor roles on online learning, while emphasizing the positive correlation between online learning and improved time management skills. Participants advocated for increased instructor involvement in online assignments akin to traditional learning environments. While participants perceived instructor roles more positively in traditional learning, Almusharraf and Kharo (2020) found high levels of student satisfaction with faculty support in online learning settings. Moreover, participants identified the need for effective time management strategies in online learning, which Lapitan et al. (2021) associate with the freedom to allocate study time.

6. Conclusions

In summary, the quantitative survey and qualitative findings highlight several positive aspects of online learning, including cost-effectiveness, flexibility, accessibility, and improved time management skills. Conversely, negative aspects of online learning encompass diminished interactive engagement, motivation, discipline, and academic success. These findings align with qualitative themes, wherein participants elucidated on the benefits of flexible scheduling, reduced financial burden, and increased access to course materials in online learning environments, alongside challenges related to limited interaction with instructors and peers, motivational struggles, and academic setbacks.

Furthermore, positive attributes of traditional learning, such as interactive engagement, heightened motivation, social interactions, quality feedback from instructors, and enhanced academic discipline and success, were delineated. However, drawbacks of traditional learning, such as reduced flexibility, resource availability, and time management skills, were also acknowledged. Participants emphasized the motivational benefits of face-to-face interactions in traditional settings but expressed reservations about the rigidity of traditional learning schedules.

Recommendations:

The results of this study suggest that the Kingdom of Saudi Arabia can improve the efficacy of online education by implementing a number of important recommendations. To start, teachers should actively participate in online tasks and give prompt feedback in order to motivate students and uphold order in virtual learning settings. In order to create a more dynamic and participative learning environment, educational institutions should also employ tactics to encourage interactive involvement, such as hosting online discussion forums and group projects.

Students should be given the tools and direction they need to learn efficient time management techniques that are suited to the requirements of online learning in order to aid in their adjustment. Additionally, it is important to provide educators with ongoing professional development opportunities so they can become more proficient with online teaching technology and approaches.

Lastly, more investigation is required to examine novel strategies that tackle the issues found in online education. Online education can be maximized to improve educational achievements in Saudi Arabia by utilizing its potential, guaranteeing a more efficient and interesting learning environment for all parties involved.

Limitations of the study:

The results of this study should be interpreted with a number of caveats in mind. First, only Saudi Arabian undergraduate students were included in the sample, which limits the results' applicability to other educational levels and cultural circumstances. More thorough measuring techniques are required, as the study's reliance on quantitative survey measures may have left out important facets of both traditional and online learning. Another drawback is the absence of a thorough examination of contextual elements that might have a big impact on learning experiences, like institutional regulations, technology infrastructure, and instructional techniques. Additionally, because the study was carried out during the COVID-19 epidemic, its conclusions might have been influenced by the sudden switch to online instruction, which would have limited the study's ability to provide insights into what learning would be like in other situations. Future studies can provide a more detailed knowledge of the interplay between online and traditional learning by addressing these constraints, which will ultimately lead to more successful teaching methods.

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