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HIGH-ACHIEVING STUDENTS' PERCEPTIONS OF INSTRUCTIONAL PRACTICES AND TEACHING STRATEGIES IN E-LEARNING AND TRADITIONAL EDUCATION: A COMPARATIVE STUDY

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ABSTRACT

The study aimed to investigate the e-learning (Virtual) comparison with face-to-face education from the perspective of high-achieving students in Saudi universities in terms of gender, college, using a descriptive survey approach, through a four domain questionnaire covering: (instructional strategies, learning environment, interaction and communication and evaluation), the sample of the study included 1,379 students during the first semester of the academic year 2023-2024.The study showed that the high-achieving students' evaluation of face- to-face education was at a high level compared to e-learning education which was at moderate level in all areas. Widely and more specifically in the assessment domain, the results showed that the high-achieving female students evaluated face -to-face education at a higher rate than males, in addition to their high evaluation of virtual education compared to males in all areas as well. At the college level, students in humanities colleges evaluated face-to-face education more positively compared to students in scientific colleges specifically in the areas of instructional strategies and learning environment, while the learning environment area has received a higher rate in virtual education experience by the humanities colleges students. According to the results, the study recommends further development the instructional strategies and learning environment domains in both actual and e-learning education.

KEYWORDS: Instructional Practices–Face -To- Face Learning – High-Achieving Students – Saudi Universities.

1. INTRODUCTION

Face-to-face education has continued to dominate other modes of learning, despite growing calls to integrate e-learning alongside traditional education. However, perceptions have begun to shift in recent years, particularly in the period following the COVID-19 pandemic, as the use of technology has expanded across various fields, including education. This development has prompted universities to revise their academic programs and transition some courses, or portions of them, to remote learning.

E-learning requires a set of conditions and possibilities that students aren't familiar with e-learning, such as infrastructure, qualifying teachers and students to use technology, legislative policies that support the educational process and providing electronic scientific content to be published on websites dedicated to educational institutions, in addition to appropriate monitoring and evaluation systems.

Table 1: Summarizes The Most Prominent Aspects of the Comparison Between Face-To-Face And E-Learning Education.

Variables	Education Method	
	Face-to-face education	E-learning education
Attendance to Teaching Facilities	Compulsory	Not Compulsory
Communication	High level of Communication	Low level of Communication
Elements of Educational Process	Teacher –Student – Curricula- Educational Environment	Communication means – Internet – plus the previous elements
Cost	Expensive	Less expensive than traditional education
Target Group	Homogeneous Group	Diverse Group
Study Programs	Restricted	More Extensive
Absorptive Capacity	Limited	Unlimited
Consideration for individual differences between students	Lowest capacity to account for individual differences	Highest capacity to account for individual differences
Privacy and Security	More Space for Privacy and security	Less Space for privacy and security
Overcome Barriers of Fear and Anxiety (Participation)	Less	More
Using all Senses in Learning	More functional during learning	Limited use of all senses in learning, with vision and hearing being dominant
Monitor and control	Students can be easily monitored and controlled	Difficult to monitor and control students
Certifications	Trusted	Not Trusted
(Salem & Al-Buqami, 2022; Belmqadem, Jalti, & Al-Muraad, 2020; Al Khani, 2019; Aswib, 2019; Wanwipa, 2013)		

The educational institutions have strived to benefit from new e-education developments causing the growth of a new generation that relied on interaction. Accordingly, virtual classes have appeared as one of the e-learning types that represent more popular and larger classes than the Face-to-face where students and their teachers meet freely at any time they choose, away from the classroom walls, communicate in a vast world of knowledge resources that unconstrained only by the teacher and curriculum boundaries through available tools such as correspondences, mail and dialogue forums, and this type is called asynchronous virtual classes, while the other type is called synchronous virtual classes, in which learners and teachers gather at the same time via Internet applications such as Blackboard, WebCT, Zoom or others using tools provided by these applications such as whiteboard, virtual rooms, chat and interactive videos(Abdel-Moneim, 2024 ; Al Hmidawi , 2016)

students perhaps vary in their capacity to adapt to and handle e-learning according to their capabilities and characteristics. The significant categories of students who may have a different perspective than others are students who have their special capacities, the high-achieving categories who adopt a resilient concept. Some saw that the high-achieving student is one who has a higher cultural level than their peers, or has greater educational attainment, or has skills that no one else has, and the source of this difference is the multiple theories that tried to explain the excellence as Freud's psychoanalysis, Adler's individual psychology, and Murray's achievement motivation theories, thus, the methods used were varied in diagnosing high-achieving students, some saw that it is possible to diagnose through individual and collective of intelligence metrics, academic readiness metrics, and personality metrics, or through the interview, etc. (Sulieman, 2004; Grawn, 2002)

The theoretical literature also indicates the existence of various factors that affect excellence,

including intelligence and motivation where most studies have shown the positive correlation between intelligence and excellence, between motivation and excellence according to the studies of Barshamal, (2017) and Oqab (2017) in addition to other factors such as the level of experience, ambition, environment, family, etc., the literature also indicates that one of the most prominent characteristics of the high-achieving is their possession to high mental and intellectual capacities shown through individual intelligence tests, for example, Stanford–Binet Intelligence test and Wechsler test with intelligence scores of 130 or higher, as they are more capable to recognize the relationships and correlations, and dealing with ambiguity, and understanding cause and effect, as well as being more emotionally open and stable, and accommodating others feelings' (Ghanem, 2017; Oqab, 2017).

The e-learning topic has occupied interested people and researchers to search about its efficiency, its comparison with traditional education, and the evaluation of students' satisfactions with it whether in general or higher education, and such studies are:

Al-Dosari's study (2024) aimed to explore the differences between traditional and online education, focusing on the challenges and opportunities within each system. The study employed document analysis of educational literature without relying on a specific sample. The findings indicated that online education provides flexibility and saves time and effort, whereas traditional education remains superior in fostering direct interaction between teachers and students, which enhances a deeper comprehension of the subjects

Al-Zahrani's study (2023) aimed to assess the utilization of e-learning resources during the COVID-19 pandemic in the Graduate studies college. The study used a case study approach with a focus group tool to collect data from 2 faculty members and 9 doctoral students. The results indicated that faculty training facilitated their adaptation to virtual education, while students faced challenges related to insufficient training and psychological pressures stemming from the transformation of their homes into learning environments

Suleiman's study (2022) addressed the transition from traditional to online education during the COVID-19 pandemic. The researcher adopted a descriptive-analytical approach, relying on a review of literature and official reports. The results revealed that the digital shift was an inevitability, but its success depended on developing digital infrastructure and training teachers and students to effectively use e-learning tools. The study also highlighted the challenge of reduced social interaction in virtual learning environments

Ebaid study (2020) conducted a study that aimed to explore students' opinions specialized in Accounting toward e-learning, applied during COVID-19 pandemic, in which a Descriptive Method was used by a questionnaire distributed over 106 students at Umm Al Qura University in Saudi Arabia, where its results showed that most of the students expressed their insufficient access to e-learning within the domains of study including: (communication and skills development..), as well as students did not show advantages to e-learning, unlike female students who showed that it was more comfortable as it aligned with their privacy needs

For Murad and Mahasneh's study (2020), the study aimed to assess the quality of teaching practices Face-to-face from the students' perspective', in which the Descriptive-survey method was used through distributing a questionnaire included six -domains, the results showed that the appreciation level of students for teaching practices was moderate, and the evaluation of instructional strategies filed was high, while the domains of evaluation, hall environment and general communication behaviors were moderate, it was also found no statistically significant differences between students average estimates attributed to gender, academic level or educational attainment.

For Alcaide, Montserrat, and Galván (2019), the study aimed to analyze students' perceptions of their level of satisfaction on the environment with virtual learning, in which analytical surveys were used on previous studies during the period (2002-2017) by analyzing questionnaires which revealed that students have a high level of satisfaction with education in virtual environments, in addition to the knowledge level and special skills they had acquired.

Also, Elfak, Abdulraheem, and Abdulrahim (2019) study aimed to investigate the impact of e-learning on the academic performance for students compared to face-to-face education, a semi-experimental approach was used with 80 nursing students in Najran University, Saudi Arabia, the results showed that the average of e-learning students earned a higher level in the final exam than the average they received face-to-face learning, the general satisfaction with traditional face-to-face lectures was lower than that of e-learning students.

Habibzadeh et al.'s. (2019) study aimed to compare the traditional teaching methods with virtual teaching, in which the semi-experimental approach was used, by designing two experimental and control groups of nursing students in Urmia and

Khoy cities, the results showed that the experimental group that learned through the virtual method significantly outperformed the control group, which indicates the possibility of using e-learning as an alternative or complement to traditional education.

While Danner & Musa, s (2019) study aimed to identify common instructional strategies and methods of teaching Shakespeare plays (face-to-face) in secondary schools in Edo State in Nigeria, the results showed that the traditional methods are the most common such as lecture, discussion, and play reading. Also, the teaching methods based on performance and technology that are unpopular among teachers as well as there are no significant differences in gender, experience and training.

Al Azmeh's (2019) study aimed to evaluate the impact of e-services offered by Syrian Virtual University, as a study of Vishnukanth; Iram (2018) which aimed to reveal the University of Technology and Applied Sciences-Nizwa (UTAS-Nizwa) students' perceptions about e-learning through Learning Management System (LMS). The two studies adopted a descriptive approach through a questionnaire whose results showed that the students' evaluation of e-education was positive as well as no differences were founded in the level of satisfaction with respect to gender and academic specialization.

Whereas Al- Orabi's (2018) study aimed to identify the reality of Islamic education teachers for contemplative thinking skills in a face-to-face method for secondary schools' students in Mecca City, the results showed that the reality of teaching was moderate ,it also showed the absence of differences in specialization or experience variables.

Faulconer et al.'s. (2018) study aimed to compare direct teaching (face-to-face) and simultaneous learning through videos and online classes, in the physics curriculum; the experimental approach was used, results showed that the dropout rates who took face-to-face classes were lower, while students' grades who studies through the Internet wer higher, as their likelihood of failure was significantly less than other learning styles.

And close to it, Khairan's (2018) study aimed to compare the effectiveness of e-learning and face-to-face education in Najran University, in the Computer Science & Information Systems Department, after face-to-face education was stopped in Saudi Arabia's southern border region due to the Arab alliance war with Yemeni rebel groups, where the results of students were analyzed in two different years, through 36 curricula, in which some of them studied via the face-to-face method and others through the Internet using (Blackboard). The final tests were conducted electronically regardless of the teaching environment. The results showed the absence of statistically significant difference between online and face-to-face education related to students' performance, and the e-education provides a safe educational environment and most importantly it achieves a good educational outcome.

Brinson's (2015) study also aimed to compare the experimental studies results from 2005 on laboratory training (face-to-face, virtual training), as in Wanwipa's (2013) study which aimed to compare the students' achievement in e-learning and traditional learning, the semi-experimental approach was used, where the results showed that students' achievements were equal in pre- and post-measurements of studied domains, such as: knowledge and understanding, recognition and analysis, practical skills, social skills and Interaction and communication.

It is evident from the above that the current study differs from previous studies. In general, Al-Dosari's (2024) study relied on document analysis of educational literature, while Al-Zahrani's (2023) study adopted a case study approach with focus groups for graduate students. On the other hand, Suleiman's (2022) study was based on a review of literature and official reports in terms of:

Few studies, such as Wanwip (2013) and Khairan (2018), have addressed the comparison between e-learning and traditional education. In contrast, the current study examines this comparison across several domains not previously explored including instructional strategies, learning environment, interaction and communication, and evaluation.

Study's methodology and tools: the current study's methodology and tools differ from many previous studies that used a semi-experimental approach with testing tools, or through meta-analysis such as Elfak et al. (2019), Faulconer et al. (2018), and Wanwipa (2013)

Study population and sample: it is a population and sample that represent a diverse spectrum of higher education students that included a large number of Saudi universities, focusing on high-achieving students, which has not been addressed by any of the previous studies.

2. STATEMENT OF THE PROBLEM AND QUESTIONS

The sudden shift from face-to-face learning to online education in higher education institutions in Saudi Arabia over the past five years —particularly after the COVID-19 pandemic has led to a massive

expansion in the use of technology in education. Virtual or blended learning has been widely adopted to teach many courses, with 2020 representing a true turning point for e-learning. However, research findings indicated weak limited of e-learning or blended learning by faculty members before that year, as highlighted in Al-Hamad's study (2019). Other studies pointed to insufficient user training and weak infrastructure as major challenges (Al-Tuwaim, 2020; Al-Nafjan, 2018).

The capacity of Saudi universities to manage technological transitions varied based on their resources, readiness levels, faculty and student competence, awareness, and the students' own capabilities. Accordingly, the current study targeted an exceptional category of students: the "gifted" due to their distinct cognitive traits and academic excellence, which enables them to handle various learning situations and styles with greater balance. Additionally, gifted students have unique needs that differ from their peers.

Therefore, the researcher considered it essential to explore this topic, with specific focus on answering the following sub-questions:

1. What is the evaluation level of high-achieving students in Saudi universities regarding to the experience of face-t0-face and e-learning education?
2. Are there any statistically significant differences at the 0.05 level between the mean responses of high- achieving students toward face-to-face and e-learning education?
3. Are there any statistically significant differences at the 0.05 significance level between the mean responses of high-achieving students toward face-to-face and e-learning education, based on the variables of gender, and college.

2.1. The Significance of Study

- **Theoretical significance:**
  - Global interest in the development of education through virtual classes.
  - The specific group addressed in this study is high-achieving students.

2.2. The Practical Significance:

- The study results are expected to benefit decision-makers in higher education; for the purposes of preparing plans formulating policies, developing faculty members' and students' competencies, and improving curricula.

2.3. The Study Limitations

- Substantive limits: The study is limited to examining high-achieving students' evaluation of e-learning experience compared to face-to-face education based on the variables addressed in the study.
- Geographical limit: The study is limited to governmental universities in the Kingdom of Saudi Arabia.
- Time limit: The study covers the first semester of the 2023–2024 academic year.

3. OPERATIONAL DEFINITION

Traditional education: A set of activities and procedures that take place within the classroom, under the supervision of a teacher, aiming to provide students with theoretical knowledge, or practical skills, or guidance (AlKhani, 2019). Here, it refers to face-to-face education between the teacher and the students.

E-learning: A set of educational processes that transfer and deliver knowledge and science in different disciplines to students wherever they are, through the Internet (Belmoqadem, Jalti, 2020).

Academic high-achieving students: Students who demonstrate distinguished performance in one or more domains of mental and academic capacities (Ghanem, Muhammad, 2015), The researcher defined them as students who obtain a GPA between 4-5 with a grade ranging from very good to excellent.

3.1. The Study Approach

Based on the problem and research questions, the descriptive survey method was followed:

3.2. Study Population and Sample

The study population consisted of all students from Saudi universities during the academic year 2023-2024, (2829) students responded, from 12 governmental universities including those in the Eastern Province: (Imam Abdulrahman Bin Faisal University [IAU], King Faisal University [KFU], King Fahd University [KFUPM], universities in the Central Province: (King Saud University, Princess Nourah University, Imam Mohammad Ibn Saud Islamic University [IMSIU], Shaqra University, and Qassim University), universities in the Western Province: (Taibah University, King Abdulaziz University, and University of Jeddah), and the respondents were counted, and focusing only on the high-achieving students – whose GPA ranged between 4-5 of 5 points – the number of high-achieving students who represented the study sample reached (1379) students, and table (2) shows the distribution of sample members according to variables:

Table 2: Students' Distribution in the Study Sample Based on Its Variables.

Variables	Variables Categories	Number	Percentage
Gender	Male	341	%24.7
	Female	1038	%75.3
	Total	1379	%100
	Total	1379	%100
College Type	Humanities	626	%45.4
	Scientific	753	%54.6
	Total	1379	%100

3.3. The Study Instrument

The questionnaire was used as a research tool, to collect the needed data to answer the questions. Through reviewing the theoretical literature and previous studies, where a two-part questionnaire was prepared; The first part concerns the basic data of study sample, while the second part about the measures of the high-achieving students' opinions in Saudi universities on the experience of e-learning compared to face-to-face education, it includes (37) items, distributed across four domains with 9 items for each except the fourth domain which includes 10 items: the first area measures students' opinions on instructional strategies, and the second area measures the learning environment, the third area measures interaction and communication, while the fourth area measures students' opinions on evaluation. responses to the items were measured on a five-point Likert scale.

3.4. The Validity and Reliability of the Study

The credibility of the tool was verified in its initial form by presenting it to a committee of universities' lecturers from different educational disciplines, then, the arbitrators' opinions were taken into account and necessary adjustments were made, after that, the study tool was applied to a survey sample from the study community as well as from outside it, including (50) students from the study community, and therefore the internal consistency *validity* coefficients were calculated by using Pearson Correlation formulas, between each item and the domain belongs to, Table (3) shows the values of correlation formulas.

Table 3: Correlation Coefficients Values for Each Item, With the Total Score of the Domain to Which It Belongs (N=50).

Face- to- Face Education							
Instructional strategies		Learning Environment		Interaction and communication		Evaluation	
Item no.	Correlation coefficient	Item no.	Correlation coefficient	Item no.	Correlation coefficient	Item no.	Correlation coefficient
1	**0.865	1	**0.633	1	**0.799	1	**0.820
2	**0.705	2	**0.772	2	**0.882	2	**0.808
3	**0.897	3	**0.828	3	**0.870	3	**0.850
4	**0.814	4	**0.738	4	**0.799	4	**0.850
5	**0.805	5	**0.712	5	**0.886	5	**0.790
6	**0.727	6	**0.779	6	**0.702	6	**0.847
7	**0.886	7	**0.752	7	**0.808	7	**0.787
8	**0.752	8	**0.763	8	**0.820	8	**0.837
9	**0.735	9	**0.800	9	**0.777	9	**0.827
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E-learning							
Instructional strategies		Learning Environment		Interaction and communication		Evaluation	
Item no.	Correlation coefficient	Item no.	Correlation coefficient	Item no.	Correlation coefficient	Item no.	Correlation coefficient
1	**0.803	1	**0.721	1	**0.876	1	**0.738
2	**0.783	2	**0.750	2	**0.742	2	**0.765
3	**0.845	3	**0.739	3	**0.763	3	**0.757
4	**0.753	4	**0.709	4	**0.841	4	**0.793
5	**0.646	5	**0.702	5	**0.833	5	**0.793

6	**0.593	6	**0.772	6	**0.747	6	**0.725
7	**0.886	7	**0.752	7	**0.646	7	**0.730
8	**0.752	8	**0.763	8	**0.894	8	**0.684
9	**0.735	9	**0.800	9	**0.814	9	**0.627
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**** Statistically Significant at a Level (A =0.01)**

The Correlation coefficient values in Table (3) indicate that each tool item is statistically positive and significant at a level (α = 0.01) with the total score it belongs to, and after verifying the internal consistency validity, the reliability coefficients of the study tool domains were extracted, according to Cronbach's alpha formula, as in the table (4).

Table 4: Stability Coefficients of the Study Tool and Its Four-Domains (N=50).

Domains	Item numbers	Face- to- Face Education	Virtual Education
		Stability coefficient	Stability coefficient
Instructional strategies	9	0.925	0.919
Learning Environment	9	0.902	0.893
Interaction and communication	9	0.934	0.927
Evaluation	10	0.939	0.905
Tool (Total)	37	0.971	0.964

The results in a table (4) indicate the stability coefficient of the study tool and its four domains at a high level and are suitable for measuring the experience of e-learning and face-to-face education.

3.5. Statistical Processing

1. To answer the first question, the mean and standard deviation were used, as well as to explain the meaning of students' responses, the following standard was used in Table (5), according to the five-category responses.

Table: Descriptive Scale for Interpreting Students' Mean Responses

Response Level	Mean	The evaluation average of high-achieving students
Strongly Agree	4.21 -5.00	Very High
Agree	3.41 – 4.20	High
Neither agree nor disagree	2.61 – 3.40	Medium
Disagree	1.81 – 2.60	Low
Strongly Disagree	1 – 1.80	Very Low

2. To answer the second question, (Paired Samples t-test) has been used for two associated samples to compare the averages of students' responses to Face- to- Face and e-learning education.
3- To answer the third question, (3-Way MANOVA) analysis was used to detect the significance of differences between the mean responses of the sample members according to variables: gender and college.

4. RESULTS AND DISCUSSION

The results related to the first question: What is the evaluation level of high-achieving students in Saudi universities regarding to the experience of face-to-face and e-learning education? To answer this question, the mean and standard deviation have been calculated as shown in table (6).

Table (6) The Means and Standard Deviation of High-Achieving Students' Responses in Saudi Universities About the Face -To-Face Education And E-Leaning Experience.

Domains		Items	Face -to-Face Education				Virtual Education			
Instructional strategies Domain	N		The Arithmetic Average	standard deviation	Score	Arrangement	The Arithmetic Average	standard Deviation	Score	Arrangement

	1	Diversity of methods and ways of Teacher's Explanation	3.71	1.14	H	7	2.86	1.16	M	5
	2	Providing an alternative to the learning method when a flow occurs	3.44	1.15	H	9	2.92	1.16	M	4
	3	Appropriate teaching methods to the learner's pattern (Audio-Visual-Sensory)	3.89	1.05	H	1	2.61	1.07	M	8
	4	Implement individual activities during the lecture	3.77	1.13	H	4	2.76	1.15	M	7
	5	Application for group learning	3.81	1.16	H	2	2.97	1.17	M	3
	6	The effort and energy the student exerted to understand lessons	3.68	1.06	H	8	3.68	1.22	H	1
	7	Develop thinking skills	3.73	1.05	H	6	3.29	1.17	M	2
	8	Students' Responsibility for Learning	3.78	1.04	H	3	2.83	1.10	M	6
	9	Appropriateness of the teaching method and style to the nature of the learning environment	3.77	1.09	H	5	2.45	1.14	L	9
	The general average of instructional strategies domain		**3.73**	**0.80**	H	-	**2.92**	**0.83**	**M**	-
Learning environment Domain	1	Stress during learning	2.92	1.17	M	9	2.86	1.23	M	5
	2	Students' commitment to actual attendance	4.10	1.03	H	1	2.67	1.26	M	9
	3	Appropriateness of educational environment to curriculum's nature	3.93	0.99	H	3	2.87	1.17	M	4
	4	The score of organizing and managing the learning environment	3.97	1.02	H	2	3.25	1.22	M	2
	5	Students' concentration and attention during learning	3.91	0.97	H	4	2.82	1.17	M	7
	6	Learning pleasure	3.71	1.14	H	6	2.85	1.20	M	6
	7	Psychological comfort while participating	3.45	1.16	H	8	3.02	1.21	M	3
	8	Students' motivation for learning	3.81	1.03	H	5	2.75	1.19	M	8
	9	The size of promotion and encouragement during learning	3.67	1.16	H	7	3.38	1.26	M	1
	The general average of learning environment domain		**3.72**	**0.76**	H	-	**2.94**	**0.85**	M	M
Interaction and communication Domain	1	Communication with the teacher during the lecture	4.05	1.04	H	2	3.12	1.23	M	3
	2	Ease of communication with the teacher outside lecture time	3.80	1.07	H	8	2.88	1.12	M	7
	3	Interaction with colleagues during learning	3.95	1.07	H	6	3.08	1.25	M	4
	4	Communication with colleagues outside lecture time	3.99	1.04	H	4	3.48	1.23	H	1
	5	Clear oral communication at the lecture's time	4.04	1.00	H	3	2.87	1.19	M	8
	6	Effectiveness of written communication during lecture	3.57	1.15	H	9	2.97	1.18	M	6
	7	Use of symbolic communication (body language - external appearance)	4.13	1.02	H	1	3.37	1.17	M	2
	8	Understand what others clearly mean in communication	3.96	0.98	H	5	2.99	1.14	M	5
	9	Appropriateness of communication methods to the learning environment	3.89	1.04	H	7	3.12	0.97	L	9
	The general average of interaction and communication domain		**3.93**	**0.79**	H	-	**2.97**	**0.83**	M	-
Evaluation Domain	1	Satisfaction with educational attainment level	3.80	1.05	H	9	2.44	1.16	L	8
	2	Achievement of individual budget and duties	3.94	1.07	H	5	3.08	1.26	M	6
	3	Achievement of group projects	3.94	1.10	H	6	3.41	1.32	H	3
	4	Diversity of evaluation formats (homework-presentations –short tests)	3.82	1.12	H	8	2.13	1.17	L	10
	5	Take teacher's feedback to improve performance	3.73	1.18	H	10	2.69	1.28	M	7
	6	Clarity of the test procedure and instructions for applying for the test	3.99	1.07	H	4	3.53	1.25	H	2
	7	Sufficient time to answer test questions	4.04	1.06	H	3	3.25	1.22	M	4
	8	Possible revision of answers during testing	4.11	1.06	H	1	3.09	1.21	M	5
	9	Dealing with technical problems during testing	4.06	1.07	H	2	3.59	1.19	H	1
	10	Appropriateness of the time to conduct tests (morning-evening)	3.89	1.20	H	7	2.41	1.22	L	9
	The general average of evaluation		**3.92**	**0.87**	**H**	-	**2.96**	**0.86**	**M**	-
General Average tool (total)			**3.83**	**0.73**	**H**	-	**2.95**	**0.77**	**M**	

***H= high M= Medium L=Low**

Table (6) results indicate the high-achieving evaluation score in Saudi universities for the face- to-face education experience which was high, with an average (3.83), and a standard deviation (0.73). As the evaluation scores of the four-domains were high, arranged as follows: interaction and communication domain with an average (3.93) and a standard deviation (0.79), the evaluation domain was next, with an average (3.92) and a standard deviation (0.87), instructional strategies with an average (3.73) and standard deviation (0.80), where the learning environment domain had an a average of (3.72) and standard deviation (0.76). However, all items in face-to-face education also received a high score except for Item (1) which received an average score of (2.92) in the learning environment domain and standard deviation (1.17).

This may be due in general to the nature of high-achieving students and their needs for special care and attention; therefore, they prefer face- to-face education over e-learning, as the ranking of domains in its current form also made sense since the interaction and communication between students and academic members, and among students themselves would be better in ace to-face education, easier and better understood, and thus better achieved. For the evaluation domain, it came at the second rank with an average (3.92) with apparent differences from the first domain with (3.93) which is a very sensitive domain for high-achieving students, since their interest in maintaining academic excellence is closely tied to their goals; the reasons behind the arrangement.

The instructional strategies domain was in the third place at an average (3.73) with apparent differences from the fourth domain (Learning environment domain) of (3.72); this is probably because the high-achieving students evaluated these domains from the perspective of its impact on their educational attainment, and regarding the sole item that obtained a medium score, Item (1) in the learning environment domain of 'Stress during learning', and this result explains that the face-to-face learning generates more tension than e-learning, and therefore it is a logical result.

The previous results agree in part with Muraad and Mahasneh (2020) study which showed that students' level of appreciation for instructional strategies was high and differed in other domains which were at medium scores such as evaluation and communication. It also varies with the result of Danner & Musa, (2019) and Orabi (2018) studies which showed dissatisfaction with face-to-face instructional strategies used by teachers which are described as traditional, based on lectures, and it's probably because these studies were carried out before the sudden transformation that were caused by COVID-19, which has yet been implemented to compare real-life education with e-learning.

For the high-achieving students' evaluation of e-learning experience, it was a medium on the arithmetic average of (2.95), with a standard deviation of (0.77) which explains that high-achieving students do not generally favor e-learning, and fear of its impact on their academic excellence. The order of the four-domains was as follows: interaction and communication first with average arithmetic (2.97) and standard deviation of (0.83), followed by evaluation domain with average arithmetic (2.96) and standard deviation of (0.86), followed by learning environment domain with average arithmetic (2.94) and standard deviation (0.85), and at last the instructional strategies domain with average arithmetic (2.92) and standard deviation (0.83). it is noticeable that all domains are at a moderate level, with apparent differences in averages, which means similarity in evaluating virtual education experience.

The current order of domains is logical, as the interaction and communication between students and faculty members and students with each other have been maintained in the top place, but with a lower score, this can be explained by the fact that e-learning relies on technology reduces the effectiveness and limitations of communication in virtual halls; to control the education process and reduce dispersal factors, the evaluation field also maintained its second place; because its important and sensitive in this domain for high-achieving students as already mentioned, whereas instructional strategies was the last rank, as the most affected domain, where e-learning impedes the competence of faculty and students in investing perfectly for instructional strategies, as well as forcing them to choose strategies and ways that are consistent with this kind of education.

For the items' results in e-learning, the score of students' evaluation ranges from high to low in the instructional strategies domain, in which Item no. (6) in 'The effort and energy the student exerted to understand lessons' was average arithmetic of (3.68) and standard deviation of (1.22) which is considered a high score, and that is a logical result, where students are expected to do more in e-learning, whereas the Item (9) in 'Appropriateness of the teaching method and style to the nature of the

learning environment' was average arithmetic of (2.45) and standard deviation of (1.14) at a low score, which may explain that teaching staff is still using traditional methods inappropriate to the e-learning environment. In an e-learning environment, students evaluated all domains at a medium score in which the arithmetic averages for all items ranked between (3.38) to (2.67) which indicates the strong impact of the e-learning environment on the similarity of high-achieving students' responses.

For interaction and communication domain results, the evaluation results of items were ranked between high and medium, the Item no. (4) 'Communication with colleagues outside lecture time' had an arithmetic average of (3.48) and standard deviation of (1.23) at a high score, which explained the necessity of students communicating with their colleagues outside lecture time; to accomplish tasks assigned to them, or to understand the educational content especially that the evaluation ranked at a medium score of communicating with a teacher inside and outside the classroom as well as among students themselves; virtual education impedes the effectiveness of communication and is replaced by students communication outside the classroom. The Item no. (9) 'Appropriateness of communication methods to the learning environment' had an arithmetic average of (1.95) and a standard deviation of (0.97) which is considered a low score, which is expected and consistent with other medium-scale evaluations, which indicated the use of traditional communication methods with students and means that the teaching staff should be trained to communicate effectively in an e-learning environment.

For the evaluation filed, the results of students' evaluation ranged between high and low scores, in item no. (9) 'Dealing with technical problems during testing' had an arithmetic average of (3.59) and a standard deviation of (1.19) , which is considered a high score, which explains the Saudi universities success in overcoming technical problems during testing as universities have formed technical support teams of faculty and computer teachers to deal with technical problems during tests. Accordingly, high-achieving students evaluated at a high scale despite the seriousness and sensitivity of tests matter for them. In Item no. (4), Diversity of evaluation formats (Homework, presentations, short tests)' had an arithmetic average of (2.13) and a standard deviation of (0.97) at a low scale. This explains that the e-learning environment requires more appropriate and reliable evaluation tools than those contained in this Item, which requires universities to diversify into students' evaluation methods in line with a virtual learning environment.

The previously mentioned results generally agree with Ebaid 's (2020) study which showed students' appreciation of e-learning was weak in terms of developing interaction and communication or solving problems, while the result also differ with (Alcaide et al. 2019; AlAzmeh 2019; Abdulraheem et al ., 2019) which showed that students have a high level of satisfaction with the nature of the virtual environment and its acquired level of knowledge and skills.

The results are related to the second question: Are there any statistically significant differences at the 0.05 level between the mean responses of high-achieving students toward face-to-face and e-learning education?

To answer this question, the arithmetic means and standard deviations of high-achieving students' responses were calculated regarding the experience of face-to-face education and virtual education, in addition to conducting a (Paired Samples t-test) test for two related samples

Table 7: The Results of the T- Test Reveal the Differences Between High-Achieving Students' Responses to Face-To-Face Education And E-Learning.

Domains	Education type	Arithmetic mean	Standard deviation	Mean difference	calculated value t-value		Degrees of Freedom	Significance level
Instructional Strategies	Face-to-face	3.73	0.8	0.8	31.817		1378	*0.000
	E-learning	2.93	0.83					
Learning Environment	Face-to-face	3.72	0.76	0.78	28.241		1378	*0.000
	E-learning	2.94	0.85					
Interaction and Communication	Face-to-face	3.93	0.79	0.96	36.817		1378	*0.000
	E-learning	2.97	0.83					
Evaluation	Face-to-face	3.93	0.87	0.97	35.184		1378	*0.000
	E-learning	2.96	0.86					
Tool (total)	Face-to-face	3.83	0.73	0.88	36.489		1378	*0.000
	E-learning	2.95	0.77					

***Statistically Significance at A Level (α ≤0.05)**

In table (7), The results of the arithmetic averages indicated an apparent difference between the arithmetic averages of high-achieving students' responses in both face-to-face and e-learning experiences, and when using the (T) test of two associated samples (Paired Samples t-test) to verify the significance of these differences in arithmetic averages, the results showed that the differences between high-achieving students' responses in both face-to-face and e-learning experience were statistically significant, as the (T) values ranged between (28.241) and (36.817) which are statistically significant at the level (α ≤0.05), where students' responses to face -to-face education were higher across all four domains of the tool.

This may indicate that high-achieving students prefer face-to-face learning over online education: It could also suggest that e-learning requires further efforts and enhanced services to improve its quality and make it more suitable for students." The results generally disagree with Abdulraheem et al. (2019) Faulconer et al. (2018) Habibzadeh et al. (2019), (studies which indicated statistical differences about the students' results in the interest of e-learning, and with Khairan (2018), Brinson (2015) and Wanwipa (2013) studies whose results indicated statistically significant differences, either favoring e-learning and face- to-face education.

The results related to the third question: Are there any statistically significant differences at the 0.05 significance level between the mean responses of high-achieving students toward face-to-face and e-learning education, based on the variables of gender, and college.

To answer this question, the arithmetic averages and standard deviations of high-achieving students' responses were calculated in both face-to-face education and virtual education experiences, according to the variables of gender, and college. The 3-Way MANOVA analysis was also used to determine the significance of differences between the mean responses of students

According to variables, the following presents the results:

1- Differences in high-achieving students' responses to face-to-face education:

Table 8: Arithmetic Averages and Standard Deviations of High-Achieving Students' Responses to Face-To-Face Education, According to Gender, And College.

Variable	Variable Categories	Descriptive Statistics	Instructional strategies	Learning Environment	Interaction and Communication	Evaluation	Tool (Total)
Gender	Male	arithmetic average	3.65	3.56	3.79	3.57	3.64
	Female	standard deviation	0.48	0.54	0.58	0.72	0.51
College	Humanities	arithmetic average	3.90	3.87	4.04	4.05	3.97
		standard deviation	0.76	0.71	0.73	0.78	0.69
	Scientific	arithmetic average	3.59	3.59	3.84	3.84	3.72
		standard deviation	0.81	0.78	0.82	0.92	0.75

Table (8) shows an apparent difference between the arithmetic averages of high-achieving students' responses to face-to-face education, according to the variables of gender and college. to determine the level of statistical significance of these differences, the 3-Way MANOVA analysis was applied without interaction; table (8) shows the results.

Table 9: Shows The Results Of 3-Way MANOVA Analysis Without Interaction, Revealing the Significance of Differences Between the Average Responses of High-Achieving Students on Face-To-Face Education, Based on the Variables of Gender and College.

Discrepancy Source	Domains	Total Squares	Freedom degrees	Average squares	Calculated Value "F"	Significance Level
Gender Hotelling *38.043 = 0.001 = α	Instructional strategies	0.716	1	0.716	1.232	0.267
	Learning environment	1.357	1	1.357	2.595	0.107
	Interaction and communication	1.676	1	1.676	2.928	0.087
	Evaluation	38.114	1	38.114	54.946	*0.000
	Tool (total)	4.248	1	4.248	8.651	*0.003
College Hotelling	Instructional strategies	8.785	1	8.785	15.122	*0.000

*8.776 = 0.001 = α	Learning environment	5.522	1	5.522	10.561	*0.001
	Interaction and communication	0.561	1	0.561	0.980	0.322
	Evaluation	0.240	1	0.240	0.346	0.557
	Tool (total)	2.583	1	2.583	5.260	*0.022

***Statistically Significance at a Level (α ≤0.05)**

Table (9) results indicated that the value of Hotelling for gender variable reached (38.043) which is a statistically significant value at a level (α ≤0.05), indicating the presence of statistically significant value in high-achieving students' responses on the face- to-face education attributed to gender variable, and in reviewing the previous table results, it is shown that the differences were on the evaluation domain and tools in general (total), where the 'F' values were calculated for differences between males and females in this domain and the tool as a whole (54.946) and 8.651 in a row, which are statically significant values at a level (0.05≥ α). About the arithmetic averages in table (7), it has been noted that female students' average responses were higher than males; indicating that the high-achieving female students generally evaluated the face-to-face education, and evaluation domain with a greater score than male, while both male and female ratings are similar to instructional strategies, learning environment and interaction and communication in face -to-face education.

Perhaps the reason that female students' ratings are higher than male for the tool as a whole, and the evaluation domain for the females' nature in terms of discipline, the ability to pay attention and focus, good listening and adherence to instructions, besides, high motivation for learning, hence higher collection. For males, there is a rise in drop-out rates, their early involvement in the labor market to help their families, their busyness in life tasks and other responsibilities, which contributed to female excellence, as confirmed by Al-Badri and Al Kendi (2019) study. The Daniel and Susan (2014) study, which covered 30 countries including Arab countries, showed the female excellence over males in educational attainment, as the results in the joint study with the World Bank (2012) showed the females excellence over males in general tests, especially in citizenship education, language, math and science in the Sultanate of Oman.

For the college variable, the Hotelling's T^2 value reached (8.776) which is a statistically significant value at a level (α ≤0.05); which indicates statistically significant differences in high-achieving students' responses on face-to-face education attributed to the college variable. Given the results in the table above, it has been noted that the differences were based on instructional strategies, learning environment and the tool (total) in general, in which calculated F-value of differences between humanities and science students in these domains and tool as a whole in a row (15.122), (10.561) and (5.260), and these values are statistically significant at the significance level (α ≤0.05). Concerning the arithmetic averages in table (7), it has been noted that the indication was in favor of students in humanities colleges due to their response averages were higher than those of scientific faculty students.

Perhaps the reason behind this result was that high-achieving students in humanities colleges are less qualified and well- qualified than those in scientific colleges, and accordingly, they need further attention in the learning environment and instructional strategies in face-to-face education that provides interaction with each other and their teachers without barriers and obstacles.

The previous results generally differ from studies of Danner & Musa (2019) and Al- Orabi (2018) which showed the absence of differences according to gender and academic specialization in instructional strategies used by teachers in the face-to-face education method.

2- Differences in high-achieving students' responses on e-learning:

Table 10: Arithmetic Averages and Standard Deviations of High-Achieving Students' Responses To E-Learning, According to Gender and College Variables.

Variable	Variable Categories	Descriptive Statistics	Instructional Strategies	Learning Environment	Interaction and Communication	Evaluation	Tool (Total)
Gender	Male	Mean	2.67	2.66	2.68	2.73	2.69
		Std. Deviation	0.65	0.66	0.59	0.69	0.59
	Female	Mean	3.01	3.04	3.06	3.04	3.04
		Std. Deviation	0.87	0.89	0.88	0.90	0.80
		Std. Deviation	0.87	0.87	0.77	0.90	0.78

College	Humanities	Mean	3.01	3.06	3.06	2.97	3.02
		Std. Deviation	0.72	0.75	0.76	0.73	0.67
	Scientific	Mean	2.86	2.85	2.89	2.96	2.89
		Std. Deviation	0.91	0.92	0.88	0.96	0.84

Table (10) shows an apparent difference between the arithmetic averages of high-achieving students' responses on e-learning according to the variables of gender, and college. To identify the level of statistical significance of these differences, the 3-Way MANOVA analysis has been applied, and table (11) clarifies the results.

Table 11: Results Of The 3-Way MANOVA Analysis Without Interaction to Reveal Statistical Significance of Differences in High-Achieving Students' Responses On E-Learning, According to Gender and College.

Source of Discrepancy	Domains	Total Squares	Degrees of Freedom	Mean squares	Calculated "F" value	Significance Level
Gender Hotelling *38.043 = 0.001 = α	Instructional strategies	18.387	1	18.387	27.672	*0.000
	Learning environment	23.961	1	23.961	34.758	*0.000
	Interaction and communication	21.935	1	21.935	33.367	*0.000
	Evaluation	23.475	1	23.475	32.840	*0.000
	Tool (total)	21.925	1	21.925	38.865	*0.000
College Hotelling *8.776 = 0.001 = α	Instructional strategies	2.429	1	2.429	3.656	0.056
	Learning environment	9.559	1	9.559	13.867	*0.000
	Interaction and communication	1.536	1	1.536	2.337	0.127
	Evaluation	0.010	1	0.010	0.014	0.906
	Tool (total)	2.131	1	2.131	3.777	0.054

***Statistically Significance at a Level (α ≤0.05)**

Table (11) results indicate the value of Hotelling for gender variable that reached (9.959) which is a statistically significant value at a level (α ≤0.05), means that the existence of statistically significant value in high-achieving students' responses on virtual education attributed to gender variable, based on the four domains and the tool as a whole, and the calculated F- value between males and females reached (27.672) and (38.865), which are statistically significant values at a level (α ≤0.05). Regarding the arithmetic averages in a table (10), it has been noted that female students' average responses were higher than those of males. This is probably because females have higher attainment and disciplined and therefore, they are more adaptable than males, as the e-learning may be more accessible to females than face -to-face education which requires attendance at the university campus and daily transportation, especially given the many burdens and roles expected of females in managing household requirements in the Saudi environment as compared to males.

For the college variable, the Hotelling's T value reached (7.331), a statistically significant value at a level (α ≤0.05); which means the existence of statistically significant differences in high-achieving students' responses to e-learning attributable to college variable, and about Regarding the above table results, it has been noticed that the differences were only in the learning environment domain, where 'F' value of differences between humanitarian and scientific colleges was (13.867), statistically significant at the level of (α ≤0.05). About the arithmetic averages in a table (10), it has been noted that the Significance was in favor of students in humanitarian colleges, Perhaps the reason for this result is that the nature of subjects and curricula in Humanitarian colleges is more adaptable to e-learning than scientific disciplines which prefer the face- to-face education method, As a logical result, this is the same reason that led the distance learning and e-learning to be successful and more widely adopted in humanitarian disciplines than scientific disciplines.

The previous results generally differ from the results of the studies by Al Azmeh (2019) and Vishnukanth & Iram (2018), which showed the absence of significant differences based on gender, or

academic specialization in the domains that studied in the virtual learning environment.

5. FINDINGS

The study results showed that the high-achieving students' evaluation of e-learning experience was at a moderate level across all domains, which indicates the need to develop e-learning systems, enhance infrastructure and develop user competencies. The results also showed the evaluation of high-achieving female students which was higher than that of males in all domains which summarized that females are more adaptable than high-achieving males. Additionally, the results showed that the evaluation of humanitarian and scientific colleges on e-learning was similar and lower than that of face- to-face education – except for the learning environment domain – which reflects the effectiveness of face-to-face education and the limited previous efforts by higher education institutions in developing e-learning.

6. RECOMMENDATIONS AND PROPOSALS

6.1. Recommendations

In light of what has been revealed in the study, the researcher recommended that stakeholders in higher education institutions take the following actions:

- Develop medium-rated domains in e-learning, especially in (instructional strategies and learning environment) domains, which are rated lower in face -to-face education of scientific disciplines.
- Integrate blended Learning as a standard approach in teaching high-achieving students.

6.2. PROPOSALS

- Implement a study that monitors the experience of high-achieving students in e-learning in private universities compared to public universities.
- Implement a semi-experimental study to compare blended Learning and virtual education for high-achieving students.

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