Effects of Perceived Research Integration and Learning Approaches on Students Satisfaction During Pandemic

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Abstract

Higher educational institutions (HEIs) have been making every effort to improve student happiness since they understood it was a key factor in luring and keeping students. The issue of student happiness has been thoroughly studied, and numerous aspects that affect student satisfaction have been emphasized. However, these studies were conducted in traditional settings, like face-to-face instruction. Since the Covid-19 pandemic's eruption, all HEIs have switched to an online learning environment, raising the question of whether or not the same elements are hurting students' pleasure. This study aims to investigate how various learning strategies, including performance goals, learning goals, perceived instrumentality, intrinsic and extrinsic values, and perceived research integration, affect students' happiness during the pandemic. Data was gathered from undergraduate and graduate students enrolled in Saudi Arabian universities. The data were analyzed using reliability testing, correlation analysis, and regression analysis in SPSS version 20. The study's findings showed that even in conventional and online learning modes, performance goals, learning goals, intrinsic and extrinsic values, and perceived research integration significantly influenced students' satisfaction. The study's findings showed that while students are engaged in online learning, their perception of instrumentality has no bearing on their level of enjoyment. This study adds a powerful theoretical framework to the corpus of knowledge. Policymakers and academics will find it useful to use the practical ramifications to encourage performance and learning goals along with intrinsic and extrinsic values to increase student satisfaction.

Keywords: *Research integration, learning approaches, students' satisfaction, learning goals, extrinsic motivation*

1. Introduction

Student satisfaction is one of the key performance factors for higher education institutions (HEIs), and HEIs make every effort to increase student satisfaction. Elliott and Shin (2002) made the case that since HEIs compete fiercely for students and funds, student happiness has become a more significant factor in assessing the institution's performance. Furthermore, Khosravi et al. (2013) noted that internal evaluation of HEIs aids in understanding crucial elements that affect students' satisfaction and areas that must be changed for greater student satisfaction. While academic advising, campus climate, instructional effectiveness, safety and security, and campus access have all been well-documented areas of student satisfaction and factors that affect student satisfaction have been identified, these factors may still have an impact on students' satisfaction in everyday situations.

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Without a doubt, the pandemic has altered the established teaching methodology in educational institutions, impacting how pupils learn (Roxå et al., 2022). The transition to digitalization in the post-pandemic period has modified the traditional learning trends that weren't in line with the student's experiences (Jia et al., 2022). The Saudi Arabian lockdown made it difficult for pupils to visit educational institutions, and they were obligated to take online lessons instead (Zhongming et al., 2022). Numerous problems with the online learning environment affected how students behaved in their pursuit of education (Salas-Pilco, Yang, & Zhang, 2022). While some students were encouraged by the online education system, most encountered significant obstacles when trying to finish their studies during the epidemic era (Umar & Ko, 2022). Every country's students require that they receive appropriate materials in online learning systems, and there must be no barriers of any type to research (Maatuk et al., 2022). Even amid the dire circumstances of COVID-19, better-qualified teachers are constantly driven to help the children (Finlay, Tinnion, & Simpson, 2022).

When HEIs switch their educational systems from conventional to online learning due to the present pandemic, some characteristics that influence student satisfaction in normal circumstances may not be significant during the epidemic (Covid-19). The current study was conducted to understand better how different elements affect students' satisfaction when switching from a traditional learning system to an online one because few studies have evaluated students' satisfaction during pandemics. In this context, Alenezi (2022) claimed that student satisfaction is one of the crucial indicators to assess the efficacy of online teaching and learning. As a result, this study aims to determine how various learning strategies, including performance goals, learning goals, perceived instrumentality, intrinsic values, extrinsic values, and perceived research integration, affect students' satisfaction throughout the pandemic.

This study's foundation is a fresh notion that wasn't covered in earlier publications. The factors included in the theoretical framework of this study were not employed in earlier research (Al-Alami, Adwan, & Alsous, 2022; Garris & Fleck, 2022; Salta et al., 2022). However, there are many studies on students' satisfaction. As a result, this finding has important theoretical and applied ramifications. The study tests new relationships, which strengthens the theory. On the other hand, this study has outstanding practical ramifications essential for enhancing the Saudi Arabian educational system to be consistent with the research's principles and understanding. Furthermore, the study limits used to determine this research's future directions have led numerous scientists to other areas of study.

2.   Literature Review

The role of face-to-face and online learning on students' satisfaction has been the subject of various studies, according to Alenezi (2022), some of which found that online learning predicted higher student satisfaction, while others found no difference between the two types of learning. However, these studies came to the same conclusion: higher student satisfaction predicted higher performance (Wei & Chou, 2020). Additionally, Barbera, Clara, and Linder-Vanberschot (2013) revealed that the course design and learning materials greatly influenced students' happiness. Alzahrani and Seth (2021) also discovered that while self-efficacy and information quality significantly increase students' happiness, service quality does not affect it. Numerous research has shown that teachers' personalities and actions are acceptable for students' pleasure (Bektaş, Kılınç, & Gümüş, 2022). Additionally, professors can inspire pupils who are unsatisfied with their education

(Djonko-Moore, 2022). To help kids learn more effectively, there should be friendly and cooperative interaction between the students and the teachers (Hasibuan, 2022).

According to Temesgen et al. (2021), identifying the variables that affect students' satisfaction may enhance instructional input. Additionally, Kivunja (2014) emphasized that scholars have been attempting to comprehend how to make instruction effective, create supportive learning environments, and evaluate the development of purposeful learning environments. Further, Temesgen et al. (2021) argued that HEIs should concentrate on enhancing teaching and learning methods and incorporating research activities regularly. However, little research has been conducted to understand how successful teaching and learning approaches influence students' satisfaction and the role of research integration on students' satisfaction. However, Rotana, Kitti, and Rawin (2021) discovered that faculty services and student support facilities play a significant influence in raising students' loyalty and happiness. These results prove that when teachers employ effective teaching methods, and students obtain support resources for their academic endeavors, student happiness may increase.

Additionally, teachers are pleased with motivating students to do well in class and with their homework (Ye et al., 2022). Students' pleasure is essential for their above-average performance, but professors must inspire them and give them the correct research principles (Mendoza, Yan, & King, 2022). The teachers encouraging their pupils to perform better are well regarded by their charges and department (Kulikowski, Przytuła, & Sułkowski, 2022).

Miller et al. (1996)'s claims are supported by Kover and Worrell (2010) explanation that both intrinsic and extrinsic motivation produce favorable results such as greater pleasure and performance. Thus, it may be claimed that pupils consider both internal and extrinsic values, which may be potential learning drivers. Students may feel content when they believe their education will enable them to achieve intrinsic and extrinsic goals. According to Miller, DeBacker, and Greene (1999), learning and performance objectives forecast favorable student results. They also discovered that students' opinions of academic assignments have a favorable impact on their long-term objectives. As a result, students may exhibit increased satisfaction when they set their learning and performance goals.

Additionally, Steinberg, Dornbusch, and Brown (1992) showed that students value their academic achievement and learning even when their satisfaction levels have varied effects on these outcomes. Based on these justifications, this study suggests that students are more satisfied when they set their own performance and learning objectives. Similarly, pupils need external motivation because it might raise their performance to the required level (Lohbeck & Frenzel, 2022). In the modern educational system, teachers' motivation is the key to students' performance (Affuso et al., 2022). Compared to pupils whose teachers drive, demotivated kids do not make good students (Bas, 2022).

Visser-Wijnveen, van der Rijst, and van Driel (2016) discuss when faculty members should involve students in research activities and how research and teaching are two major components of HEIs. They also highlight how undergraduate and graduate students find it useful when professors integrate teaching and research into the classroom. Additionally, Buckley (2011) added that students value instructional strategies when learning activities are based on research. According to Breen and Lindsay (1999), incorporating research into teaching and learning methods benefits pupils. Based on this discussion and previous research, it is clear that learning approaches and perceived research integration impact students' satisfaction; however, it is necessary to determine whether these factors are equally significant

and can predict students' satisfaction when HEIs switch from face-to-face to online learning. It's critical to comprehend how these aspects affect students' happiness with online learning during pandemics since HEIs have converted traditional learning processes to online mode due to the pandemic. The teaching method should be enhanced, and teachers should strongly encourage their students to learn (Ogunode & Ajayi, 2022). The brightest students benefit from their teachers' unique teaching methods (Fuchs et al., 2022). Therefore, the study suggests that learning approaches like learning goals, performance goals, perceived instrumentality, intrinsic and extrinsic values, and perceived research integration positively influence students' satisfaction during the pandemic. This is based on the discussion that was just had. Figure 1 displays the study's theoretical framework.

H1: Learning goals positively influence students' satisfaction during the pandemic.
**H2:** Performance goals positively influence students' satisfaction during the pandemic.
H3: Perceived instrumentality positively influences students' satisfaction during the pandemic.
H4: Intrinsic values positively influence students' satisfaction during the pandemic.
H5: Extrinsic values positively influence students' satisfaction during the pandemic.
H6: Perceived research integration positively influences students' satisfaction during the pandemic.

Figure 1: Theoretical framework
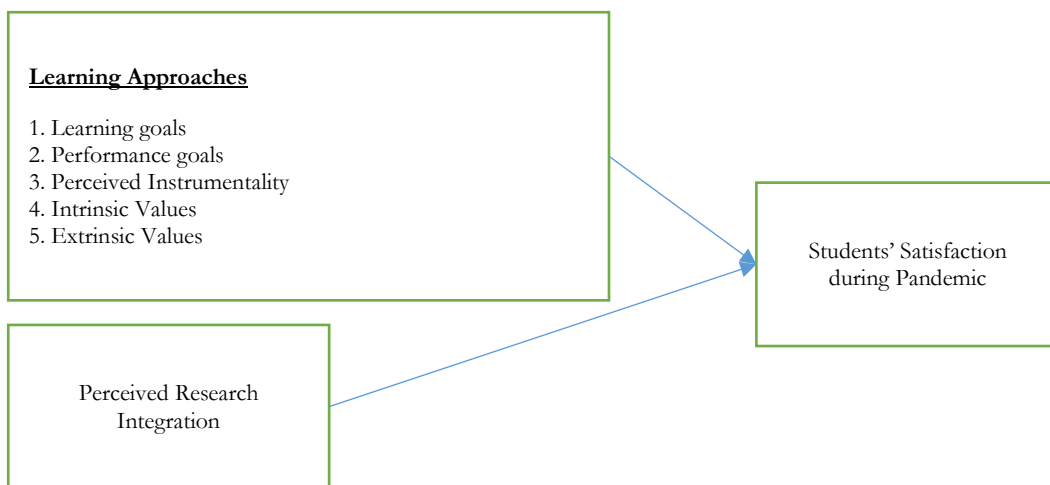
3. Methodology

The research used a quantitative technique and deductive reasoning. Therefore, the sample size was chosen using the probability sampling method. Bhatti and Sundram (2015) claim that the probability sampling approach is ideal for quantitative studies that aim to analyze the relationship between predictor and criterion variables. Additionally, the respondents were chosen using a basic random sample methodology under the probability sampling method. Students were selected as responders because they served as the study's unit of analysis, which was an individual. Using a straightforward random selection technique, questionnaires were given to 500 undergraduate and graduate students enrolled at various Saudi Arabian universities. The questionnaire was divided into three sections. The first requested students to supply demographic data such as their gender, age, education level, and the number of

semesters they had completed. In the second phase, students were required to react to questions using a 5-point Likert scale, with 1 denoting a strong disagreement, 2 a neutral opinion, 4 an agreement, and 5 a strong agreement. Out of 500 questionnaires, 239 were completed and returned, with 7 being deleted for providing nonsensical or missing information. 232 completed surveys were therefore employed in the study. Reliability testing, regression testing, and correlation analysis were conducted using SPSS version 20.

3.1   Measurements

The learning approaches scale consisted of 5 sub-scales: learning goals, performance goals, perceived instrumentality, intrinsic values, and extrinsic values developed by Miller et al. (1996). Learning goals consisted of 3 items such as 1. "I do the work assigned in this class because I like to understand the material I study" 2. "I do the work assigned in this class because I want to improve my understanding of the material" 3. "I do the work assigned in this class because I want to learn new things." The performance goal scale consisted of 6 items which included 1. "I do the work assigned in this class because I don't want others to think I'm not smart" 2. "I do the work assigned in this class because I want to look smart to my friends" 3. "I do the work assigned in this class because 1 don't want to look foolish or stupid to my friends, family, or teachers" 4. "I do the work assigned in this class because I don't want to be embarrassed about not being able to do the work." 5 "I do the work assigned in this class because I don't want to be the only one who cannot do the work well." 6 "I do the work assigned in this class because I can show people I am smart." The perceived instrumentality scale consisted of 5 items such as 1. "I do the work assigned in this class because my achievement plays a role in reaching my future goals." 2 "I do the work assigned in this class because my achievement is important for attaining my dreams." 3. "I do the work assigned in this class because understanding this content is important for becoming the person I want to be." 4 "I do the work assigned in this class because learning the content plays a role in reaching my goals." 5 "I do the work assigned in this class because learning this material is important for attaining my dreams." The intrinsic valuing scale consisted of 3 items 1. "Learning this material is enjoyable." 2. "I find learning this subject matter personally satisfying." 3 "The concepts and principles taught in this course are interesting." The extrinsic valuing scale consisted of three items, namely 1, "Learning this material is important because of its future value." 2 "Mastering the concepts and principles taught in this class is of value because they will help me in the future" 3. "Being able to use the ideas reflected in the assignments and projects in this course will be of value to me in the future."

Perceived research integration was measured using 40 items developed by Visser-Wijnveen et al. (2016). Each scale item was started with "during this study module" 1 "I assimilated knowledge about research Findings" 2 "I learned to pay attention to the way research is carried out" 3 "developed an academic disposition" 4 "there were opportunities to talk with researchers about scientific research" 5 "attention was paid to recent developments in the field" 6 "the scientific research process was an essential part of the curriculum" 7 "I was inspired to learn more about this discipline" 8 "my understanding of the most important concepts in the domain has increased" 9 "attention was paid to research methodology" 10 "felt part of the institute's academic community" 11 "became familiar with the research carried out by my teachers" 12 "my teachers encouraged me not to be satisfied with an explanation too quickly" 13 "we searched for answers to unanswered research questions together with the teachers" 14 "I became enthusiastic about my scientific domain" 15 "my contribution to the research was valued" 16 "I came in contact with my teachers' research" 17 "my participation in the research was important" 18 "I

got the opportunity to hear about current scientific research" 19 "I became familiar with the results of scientific research" 20 "I was stimulated to critically assess literature" 21 "I felt involved in the institute's research culture" 22 "my awareness of the research issues that scientific researchers are currently contributing to was increased" 23 "I learned what kind of studies have been carried out in my field" 24 "my interest in research in this area was increased" 25 "I made a contribution to development in my field" 26 "I learned the ways in which research can be conducted in this field" 27 "the teachers encouraged us to ask critical questions about our work" 28 "as a student I felt involved with the research" 29 "I had opportunities to socially interact with researchers within the institute" 30 "links to current research practices were made" 31 "I became involved in my teachers' research" 32 "my teachers encouraged personal interest and enthusiasm for research in this field" 33 "my teachers encouraged personal interest and enthusiasm for research in this field" 34 "the teachers carried out their instruction adequately" 35 "my teachers were able to explain the subject matter effectively" 36 "I developed an accurate picture of what was expected of me" 37 "My learning is stimulated when education is grounded in research" 38 "It is important to me that my teachers conduct research" 39 "Education in which scientific research is central stimulates my learning" 40 "The research culture at the institute stimulates my learning process".

Students' satisfaction was measured using 6 items scale developed by Vaughn, Hur, and Russell (2019). Scales items are "1-I am satisfied with the way the course content was taught 2- I liked the techniques used by the teacher to teach the unit 3- The online delivery format was appropriate for course materials 4- I enjoyed the autonomy that the course provided 5- I enjoyed activities used in the course 6- Learning was enhanced with online content/material."

4.   Results

Each construct's Cronbach's alpha value was calculated during the reliability test (see Table 1). For learning purposes, Cronbach's alpha value was 0.66. Second, the performance goals' Cronbach's alpha value was 0.69. Thirdly, the intrinsic values' Cronbach's alpha value was 0.61. Fourth, the extrinsic incentive Cronbach's alpha score was 0.75. Fifth, the perceived research integration Cronbach's alpha value was 0.69. Finally, the satisfaction score for students, measured by Cronbach's alpha, was 0.79. The findings demonstrate the validity and dependability of the study's conclusions.

Table 1. Reliability Test

Variables	Reliability
Learning Goals	0.66
Performance Goals	0.69
Perceived Instrumentality	0.61
Intrinsic Values	0.75
Extrinsic Values	0.70
Perceived Research Integration	0.69
Students Satisfaction	0.79

Notes: *α>0.6 (Bhatti & Sundram, 2015)

Data for this study were gathered from 124 male and 108 female respondents. The responders' ages range from 18 to more than 40. 196 respondents had graduate degrees, and 36 had master's degrees. Table 2 lists the findings of this study's demographic analysis.

Table 2. Demographic profile

Demographics	No. of Students	Percentage
Gender		
Male	124	53.4
Female	108	46.5
Age		
18-28 years	198	85.3
29-39 years	30	12.9
40 and above	4	1.7
Education		
Diploma	0	0
Graduates	196	84.4
Masters	36	15.5
Others	0	0
No. of Semesters Completed		
1- 2 Semesters	96	41.3
3-4 Semesters	76	32.7
4 Semesters and above	60	25.8

The study established the findings' descriptive statistics and relationships. For correlations and descriptive statistics, $p<0.05$ is the suggested cutoff (Bhatti et al., 2013). The standard deviations for learning objectives are 0.35, performance objectives are 0.28, perceived instrumentality is 0.33, intrinsic values are 0.23, extrinsic values are 0.28, perceived research integration is 0.34, and student satisfaction is 0.35. The mean for learning goals is 3.01, performance goals are 2.81, perceived instrumentality is 2.11, intrinsic values are 2.32, extrinsic values are 3.14, perceived research integration is 2.84, and students' satisfaction is 2.77. Table 3 provides the findings of the descriptive statistics and relationships.

Table 3. Descriptive Statistics and Correlations

Variables	Mean	SD	1	2	3	4	5	6
Learning Goals	3.01	0.35						
Performance Goals	2.81	0.28	0.33					
Perceived Instrumentality	2.11	0.33	0.18	0.28				
Intrinsic Values	2.32	0.21	0.27	0.36	0.39			
Extrinsic Values	3.14	0.28	0.24	0.30	0.22	0.26		
Perceived Research Integration	2.84	0.34	0.33	0.29	0.20	0.37	0.18	
Students Satisfaction	2.77	0.35	0.31	0.27	0.36	0.27	0.35	0.28

Notes: $p<0.05$ (Bhatti et al., 2013)

The study's findings, presented in Table 4, show that students' satisfaction is favorably influenced by learning goals, performance goals, intrinsic values, extrinsic values, and perceived research integration ($p<0.001$; Bhatti et al. (2013)) but not by perceived instrumentality. According to the findings of multiple regression analysis, learning goals, performance goals, intrinsic values, extrinsic values, and perceived research integration account for 68% (R square = 0.68) of student satisfaction. In addition, the sample's condition for normality was met by a bell-shaped histogram and P-P plots. The Durbin-Watson value of 1.98 was within the range of 1.5 to 2.5, considered tolerable.

Table 4. Multiple Regressions

Independent Variables	Beta	t-value
Learning Goals	0.28	3.01
Performance Goals	0.31	3.45
Perceived Instrumentality	0.38	1.24
Intrinsic Values	0.28	2.22
Extrinsic Values	0.40	3.64
Perceived Research Integration	0.39	2.99
F-value	78.0	
Durbin Watson	1.98	
R Square	0.68***	
Adjusted R square	0.59***	

***$p < 0.01$; t-values> 1.96 (Bhatti et al., 2013)

The first hypothesis' findings are supported ($p = 0.022$ and $t = 3.01$), and learning objectives benefit students' satisfaction during the pandemic. Performance goals favor student happiness during the epidemic, according to the results of the second hypothesis ($p = 0.029$ and $t = 3.45$). ($p = 0.187$ and $t = 1.24$) The results of the second hypothesis are not accepted, and perceived instrumentality does not have a beneficial impact on student satisfaction during the epidemic. Accepted results from the fourth hypothesis show that intrinsic values benefit student happiness during the epidemic ($p = 0.024$ and $t = 2.22$). Extrinsic values have a beneficial impact on student satisfaction during the pandemic, according to the results of the fifth hypothesis ($p = 0.011$ and $t = 3.64$). The sixth hypothesis' findings are also accepted ($p = 0.033$ and $t = 2.99$), and perceived research integration positively impacts student satisfaction during the epidemic.

Table 5. Result of Analyses and Hypotheses Testing

	Hypotheses	P-value	t-value	Accept or Reject
H1	Learning goals positively influence students' satisfaction during the pandemic.	0.022	3.01	Accept
H2	Performance goals positively influence students' satisfaction during the pandemic.	0.029	3.45	Accept
H3	Perceived instrumentality positively influences students' satisfaction during the pandemic.	0.187	1.24	Rejected
H4	Intrinsic values positively influence students' satisfaction during the pandemic.	0.024	2.22	Accept
H5	Extrinsic values positively influence students' satisfaction during the pandemic.	0.011	3.64	Accept
H6	Perceived research integration positively influences students' satisfaction during the pandemic.	0.033	2.99	Accept

5.   Discussion

According to Temesgen et al. (2021), measuring student happiness is a key component of assessing the performance of educational institutions. In this regard, previous researchers have thoroughly documented factors that affect students' satisfaction in traditional settings. Still, little research has examined how similar factors affected students' satisfaction during pandemics when HEIs switched from conventional to online learning modes. This study investigates how different learning strategies affect students' satisfaction, such as performance goals, learning goals, perceived instrumentality, intrinsic and extrinsic values, and perceived research integration.

The study's conclusions showed that even in an online learning environment, learning and performance goals favorably impact students' satisfaction. These results align with the theories by Steinberg et al. (1992). They claim that although students often attain their learning and performance goals independent of the learning environment, these goals have varied effects on performance. Therefore, whether they are studying online or in person, students feel fulfilled when they achieve their learning and performance goals. It is important to remember that students may not feel content if they encounter difficulties when learning online because these difficulties may make it more difficult for them to reach their learning and performance objectives. Another possible explanation for how learning and performance objectives affect students' satisfaction in an online environment is that HEIs in Saudi Arabia make every effort to ensure that the online learning process is successful and that there is no difference between face-to-face and online instruction.

This study's results showed no correlation between student satisfaction during the pandemic and perceived instrumentality. These results are consistent with earlier research by Kover and Worrell (2010), who argued that perceived instrumentality influences students' intrinsic and extrinsic motivation and leads to better outcomes. One of the potential explanations for these results could be that perceived instrumentality indirectly affects students' pleasure through intrinsic and extrinsic motivation. That might explain the study's findings, which showed that intrinsic and extrinsic values directly impact students' pleasure. In other words, students tend to feel fulfilled when they believe their efforts will result in intrinsic or extrinsic values.

Finally, this study's findings showed that perceived instrumentality positively impacts students' satisfaction, and these results are consistent with the suggestions made by Visser-Wijnveen et al. (2016) and Buckley (2011) that faculty members incorporate research-based knowledge into their teaching methods. These findings may be explained by the possibility that when faculty members attempt to involve students in research activities and incorporate research findings into their instruction, students feel more engaged and satisfied because they perceive the learning process as being grounded in research findings and close to real-world applications. Additionally, incorporating research into teaching strategies may enable students to connect what they have learned to actual life situations.

6.   Theoretical and Practical Implications

This study's theoretical foundation is a valuable addition to the corpus of knowledge. The association found in this study is important and has improved the body of work on student happiness. The study has shown that the learning objectives have a favorable impact on students' satisfaction. Second, the study has demonstrated that performance goals have a favorable effect on students' satisfaction. Thirdly, the study has shown how intrinsic values have a favorable impact on students' contentment.

T study has shown that extrinsic values have a favorable impact on students' contentment. This study also shows that the students' pleasure is positively impacted by how well research is integrated. The research's framework has improved the body of knowledge, and it will give upcoming scholars more data to use in their studies of this body of knowledge concerning students' pleasure.

Numerous recommendations have been made based on the recent investigation results. First and foremost, faculty members in Saudi Arabia's HEIs should assist students in identifying their learning and performance goals because when students are aware of what they are working toward, they are more likely to put out their best efforts to do so and produce better results.

Second, instructors should ensure that students properly understand how the learning process will lead to intrinsic and extrinsic values and how to observe intrinsic and extrinsic values during learning. These activities will raise their level of satisfaction, which could result in improved performance. To maximize the effectiveness of online learning, management and policymakers should also make sure that all necessary tools, digital infrastructure, and technology are available. This is because a lack of these facilities will affect students' learning and performance goals, which may affect how satisfied they are with their education. Finally, instructors should build their course content on research findings and include learners in research-related activities at every stage of the learning process. Students will be encouraged to actively participate in the learning process by incorporating research activities into course design and teaching strategies, increasing their satisfaction and maximizing learning outcomes.

7.   Future Directions

In reality, this study aims to determine how different teaching strategies—including performance goals, learning goals, perceived instrumentality, and intrinsic and extrinsic values—affect students' satisfaction during the pandemic. There are certain restrictions on this study, though. The study has addressed the importance of students' intrinsic values in this regard, but it has not addressed the extent of their perceived values. Therefore, the moderating effect of perceived values on the link between intrinsic motivation and student satisfaction should be covered in the future study. The study also covered the importance of extrinsic values for pupils but left out the crucial influence that teachers' motivation plays. As a result, teachers' basis should be discussed in future research on the relationship between extrinsic motivation and student happiness. Finally, while the data for this study were drawn from a random sample, it is recommended that cluster-based sampling be used in subsequent research to validate the findings.

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