

## **A study on students' satisfaction in remote learning behaviour using digital platforms in Indian higher education institutions**

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### **Abstract**

Students are impacted by new developments in digital learning tools in various ways, enhancing their learning experience. The transition of the education system towards online education requires scrutiny of the satisfaction of the students with remote learning through the digital platform. This study intends to examine the level of satisfaction of undergraduate and postgraduate students through their experience with online learning. The present study took a sample of 147 students from higher education institutions and the data was collected through a questionnaire based on simple random sampling methods. The present study's result shows a significant and positive relationship between students' satisfaction and

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remote learning. The findings will aid educators and academics in identifying elements that can improve the level of students' satisfaction with remote learning.

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**Subject Classification:** I23: Higher education.

**Keywords:** Students, Satisfaction, Digital platform, Remote learning, Higher education institutions, NEP.

## 1. Introduction

According to Baber (2020) remote learning has grown rapidly since the outbreak of the covid pandemic, however, when it comes to the Indian higher education system, the teaching and learning process has been severely disrupted as a result of the pandemic. Remote learning has become the only source of education at the time of the pandemic. In recent years, distance education in India has grown significantly, and it has established a position in the lives of students. This massive expansion has generated interest in defining quality for online learning.

"According to the new education policy, 2020 will bring important adjustments to the education system," says the document (MHRD, 2020). Major aspects such as increasing the availability of fellowships, opening infrastructure for open and distance learning, remote learning, and focusing on boosting the use of technology are all considered in the NEP to be related to Indian higher educational institutions- one of the government's key targets is to raise the Gross enrolment ratio (GER) from 26.3% to 50% by 2035. Looking back in history, it has been witnessed that the key purpose of education policies in the past has been to enhance the Gross enrolment ratio (GER)" (MHRD, 2020).

However, many students in India drop out of school after finishing senior secondary education. The most common reason for this is that most students cannot afford higher education and begin working. Keeping this circumstance in mind, achieving the goal of raising GER is rather challenging. Thus, there are no physical fellow educators, and there is time and space freedom, unlike conventional learning. According to the study online education in India: 2021, published by KPMG India and Google, the market for online education in India is predicted to rise eightfold in three years, from USD 247 million in 2016 to USD 1.96 billion in 2021. The increase in paid online education users from 1.57 million in 2016 to 9.5 million in 2021 is expected to drive such rapid growth in the online education market. Let us look at some developing trends in the Indian

online higher education system since the e-learning market is expected to rise many times in the next years (KPMG, 2021).

However, in higher education, the Indian government has launched various digital initiatives. Where digital platforms make learning more flexible and give an option for people unable to attend regular classes for various reasons. With the advancement of technology and the Internet, e-learning has established itself as a viable academic option. E-learning is occasionally clubbed together with remote learning (Bates, 2005). There are many pros to online learning, especially in today's world, but there are also certain worries that contribute to the attrition of student participants and finally obstruct the evolution of online courses (McIsaac, 1996). One of the key factors constraining the expansion of online learning is a lack of interest or motivation, which increases the number of withdrawals from online courses (Aragon, 2008). However, researchers, educators, and other experts are curious to learn whether digital learning may provide greater success and academic accomplishments over traditional learning. Examining student experience and motivation is the only way to find the solution. Many comparison studies have been undertaken to determine if face-to-face or conventional teaching techniques are the most successful, or whether online or blended learning is the most effective said (Gomez, 2016). According to Bernard (2014) students do far better in online learning than they do in traditional learning, as seen in rising rates of course completion, learning satisfaction, and motivation to learn more through online learning. Several research has also shown that online learning delivers better performance than conventional learning approaches said (Lockman & Schirmer, 2020). Indeed, online learning is widespread in this revolutionary and digital age because of its growing relevance in the academic world; yet certain studies demonstrate that it has drawbacks also, however, face-to-face learning is preferred. Students' motivation, contentment, and absenteeism were used to conclude that online learners were less effective than face-to-face learners in comparative research conducted by (Adams, Randall, & Traustadóttir, 2014). In all modes of learning, course design plays a vital role in achieving high results and, as a result, impacts student engagement (Lee, 2014).

## **2. Literature Review**

According to Mukhtar, Anwar, Ahmed, & Baloch (2015), higher education is defined as education gained at the college or university level and is considered one of the most important tools for a country's

individual, social, and economic growth. Moreover, The majority of these studies are attitudinal in nature, with the goal of investigating instructors' and students' attitudes about the adoption of online, blended, and hybrid forms of learning, as well as identifying the problems that participants face (Hussein, 2020). Therefore, another key topic covered in the present study is the gross enrollment ratio (GER), why is the GER of higher education institutions low there might be a reason that the students were confused with technical knowledge and information abundance. They considered themselves, learners with low self-esteem. Students were worried about assuming that they had a suitable online engagement style with both other students and the teacher. They were concerned about their ability to successfully use the communication software system as a medium of interaction and as a learning tool said (Chyung, Winiecki, & Fenner, 1998).

Higher education institutions are under increasing pressure to implement market-oriented strategies in order to differentiate themselves from opponents and enrol as many students as possible while others still serve the needs and demands of current students. As a response, numerous empirical investigations have been conducted to identify the factors that impact student satisfaction in higher education said (Kanwar & Sanjeeva, 2022). According to Elliott & healy (2001), the students satisfaction is described as a short-term attitude arising from an evaluation of a student's academic experience. It is a multifaceted phenomenon impacted by a number of elements said Walker-marshall & Hudson (1999).

The quantity of research articles on remote learning has increased in this decade, and there is a need to identify new research topics investigated. Although remote learning environments can offer possibilities for learners to engage in the learning cycle, it's simply not expected that these possibilities would be taken benefit of said (Crane, 2000). However, Students may miss the essential learning techniques to complete the digital learning element. The abundance of alternatives and choices offered to students may place a cognitive burden on them (Lim, 2004). According to (Sweller, 1994) cognitive load theory is defined as good instructional materials increasing learning by redirecting cognitive efforts towards learning-related actions rather than learning-related processes. It has been argued in this context that mixing up quality online learning with emergency online learning may have a lengthy negative impact on the past because instructors and students with limited or no previous experience with digital learning may believe that it is a poor substitute for offline learning said (Bozkurt, 2020).

The pandemic has forced every organisation to continue operations through remote working (Mishra, Shukla & Sujatha, 2021). Educational institutions too sprang into digital learning, even though no one was prepared for it. Multiple researchers have highlighted the move to online learning as a significant yet necessary step in the learning process. The abruptness of this move prompted a discussion concerning learning quality and student satisfaction towards digital learning.

The present study aims to examine student's satisfaction with remote learning behaviour using digital platforms in Indian higher education institutions after COVID-19, which completely tumbled the educational system (Sharma & Kiran, 2021). The Pandemic has compelled educational institutes, including teachers and students, to relocate to the internet, something they were unfamiliar with (Danah, Creely, & Michael, 2020). The present study aims to conduct a survey to explore the students' satisfaction with remote learning in the Indian higher education system. Because the students were not mentally prepared for such a transition, this study will explore how they viewed the transition's outcome, what satisfaction they will show, and how satisfied they were with it.

### **3. Building a Hypothesis on the basis of theoretical background**

#### *3.1 Interaction in Digital Learning Environment*

In a digital learning environment, both synchronous (video conferencing, audio channels, online chat rooms) and asynchronous (email) tools can be used for online course engagement (e-mail, discussion boards) said (sharma & kiran, 2021). Interaction is a crucial aspect of perceived student learning and motivation in online courses, proposed Ku, (2013). According to M.G. (2002) the most important component in "student satisfaction" and "student learning outcomes" was discovered to be instructor-learner contact.

Instructors need to be able to construct course frameworks that stimulate social interaction while upholding challenging and demanding ideals and cultivating self-governing learning skills, according to the study conducted by (Muirhead, 2005). Knapp (2018) noted that while online classes have been utilising the learning management System (LMS) for many years, the system frequently lacks the necessary collaborative areas for students to engage in real-time, group discussion and learning. Alqurashi (2019) found that learner-content and learner-instructor interactions are very important for student-perceived learning and

satisfaction, however, learner-learner interaction is not such an important predictor.

### **Hypothesis 1**

HO: There is no significant positive influence of interaction in online classes on student satisfaction.

Ha: There is a significant positive influence of interaction in online classes on student satisfaction.

### *3.2 Course Structure in Digital Learning*

According to M.G. (1991), the course structure is defined as “the amount to which an education programmed may accommodate or be attentive to each learner’s specific requirements,” as well as “the rigidity or flexibility of the program’s educational objectives, instructional tactics, and assessment techniques.” The usefulness of the themes and the grouping of these things in such a way that it is logical and understood by a student is the curriculum structure. The courses offered are the conception, administration, layout, content, practices and methodology, schedule, and general planning of the course (Julia et. al., 2019). This rational and clear structure helps in improving learning results and, as a result, student satisfaction with the course. To encourage student learning and positive results, instructors establish a plan that includes intended learning, outputs, task dates, rubrics, and guidelines for tasks (Gray, J. A., & Melanie, D., 2015). According to the findings of Eom, Wen and Ashil (2006), the course structure was found to have a considerable impact on student contentment, which is comparable to the findings of (Gray & DiLoreto, 2016). However, according to the findings of Eom, Wen and Ashil (2006) According to their findings, there is no substantial association between course structure and learning outcomes, which opposes the findings of (Gray & DiLoreto, 2016).

### **Hypothesis 2:**

H0: There is no significant positive influence of the course structure of online classes on student satisfaction.

Ha: There is a significant positive influence of the course structure of online classes on student satisfaction.

### *3.3 Instructor Knowledge and Facilitation in Digital Learning Environment*

Instead of employing traditional teaching methods, an instructor's responsibility in an online format is to stimulate, assist, and induce critical thinking in students with sovereignty and obligation (Huynh, 2005). Being a competent teacher and having robust technological tools are essential in online classrooms (Bolliger, 2004). Jones (2006), noted that in an online class, the educator should stimulate interaction not just between the student and the educator, but also between the learners. The role of instructor-led support and social presence is a key factor in online learning quality (Ladyshevsky, 2013). Educator competence and assistance were found to have a considerable impact on student satisfaction but were unimportant in influencing the learning outcome said (Eom, Wen, and Joseph, 2006).

### **Hypothesis 3**

HO: There is no significant positive influence of instructor knowledge and facilitation in online classes on student satisfaction.

Ha: There is a significant positive influence of instructor knowledge and facilitation in online classes on student satisfaction.

### *3.4 Student Perceived Learning Towards Digital Learning Environment*

Students' perceptions of learning and satisfaction, when integrated, can provide a better representation of online learning outcomes (Gray & DiLoreto, 2016). There was a robust association between students' overall perceptions of learning and their satisfaction with online learning (Richardson & Swan, 2003). A satisfied student is an apparent result of a successful learning experience, (Swan, 2001). According to Duque (2014), the same robust association, and it was discovered that the observed student learning outcome is a good determinant of student satisfaction in online learning said (Marks et. al., 2005). In the digital environment, it was observed that perceived learning results led to student satisfaction and had a positive effect on the digital environment (Ikhsan et. al., 2019).

### **Hypothesis 4**

HO: There is no significant positive influence of students' perceived learning in online classes on student satisfaction.

Ha: There is a significant positive influence of students' perceived learning in online classes on student satisfaction.

## Research Model

The following research structure is recommended for the study, as indicated in Figure 1, based on theoretical background and hypothesis:

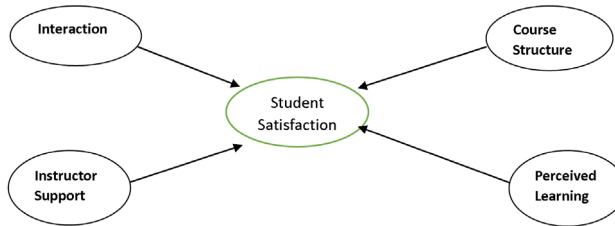


Figure 1

## 3. Research method

### 3.1 Measurement

The present study used a 5-point Likert scale survey with responses ranging from strongly disagree (1) to strongly agree (5). There were two components to the survey. The demographic information about the respondents was obtained in the first segment of the survey, which included age, gender, level of education, and comfort level. The survey's second segment examined all the key variables of the study, covering the structure of the course, interaction amongst students, instructor support, perceived learning and students' satisfaction. Students who were attending online classes during the COVID-19 epidemic were invited to complete the survey before and after the universities reopened. The variables of the segment are interaction among students, Structure of the course, instructor support, perceived learning, and students' satisfaction. The study created a 29-item measure for the study that includes the following factors: interaction amongst students (7 items), the structure of the course (5 items), instructor support (6 items), perceived learning (6 items), at last students' satisfaction (5 items) all items of the variable are adopted from the study of (Gray & DiLoreto, 2016).

### 3.2 Data collection

Google forms were used to disseminate the surveys and then created a link which is further distributed with the help of emails and some social media platforms also. Researchers conducted a preliminary test before releasing the surveys to ensure that all of the items were clear. Researchers discussed the questionnaire with research academics to ensure that it was

understandable and that it was reliable and valid. The questionnaire was altered even further to make it easier to complete responses. There were 147 responses in total. The demographic information of the respondents is shown in Table 1. Male respondents were 43.5 % of the sample, while female respondents made up 56.5 %. Moreover, 47.6% of respondents were between the ages of 18 - 21, 36.1 % were between the ages of 22 -25, and 16.3 % were beyond the age of 25. Furthermore, 65.3 % were college graduates, 28.6 % were postgraduates, and only 6.1 % were PhD students. Almost all of the respondents said they were less comfortable with online learning. Table 2. shows the estimated mean and standard deviation for each variable.

**Table 1**  
**Demographic Profile**

| Variable           |               | Frequency | Percentage |
|--------------------|---------------|-----------|------------|
| Gender             | Male          | 64        | 43.5       |
|                    | Female        | 83        | 56.5       |
| Age                | 18-21         | 70        | 47.6       |
|                    | 22-25         | 53        | 36.1       |
|                    | More than25   | 24        | 16.3       |
| Level of Education | Graduate      | 96        | 65.3       |
|                    | Post Graduate | 42        | 28.6       |
|                    | Doctoral      | 9         | 6.1        |
| Level of Comfort   | Less          | 85        | 57.8       |
|                    | More          | 62        | 42.2       |

**Table 2**  
**Descriptive Measurement**

| Variable                     | Mean   | Standard Deviation |
|------------------------------|--------|--------------------|
| Structure of Course          | 3.0463 | 0.66624            |
| Interaction Amongst Students | 2.9864 | 0.93429            |
| Instructor Support           | 3.1984 | 0.88865            |
| Perceived Learning           | 3.3753 | 0.96925            |
| Student Satisfaction         | 3.2136 | 0.90468            |

#### 4. Data analysis

The data acquired for the study were analysed using SPSS. To confirm the measurement and evaluate the proposed hypothesis, correlation and regression techniques were applied.

##### 4.1 Measurement model

Cronbach's Alphas were utilised to measure construct reliability, as evidenced by the measuring model for the reliability test (Table 3). This has been done to maintain the stability of the constructs.(Cronbach, 1951). Cronbach's Alphas range from 0.733 to 0.863, with values >0.70 deemed acceptable. Initially, the structure of the course has the lowest Cronbach's alpha with <0.70 which is not acceptable therefore, 2 items were deleted from the total of 5 items at the time of the reliability test to achieve the required acceptable value. The Cronbach's alpha for Students' perceived learning(0.887) was found to be the highest. The data's validity was determined, and each construct's alpha value was above the threshold level of 0.7, Which is acceptable, represented in Table 3.

**Table 3**  
**Reliability Analysis**

| Variable                     | No. of Items | Cronbach's Alpha |
|------------------------------|--------------|------------------|
| Structure of Course          | 3            | 0.88             |
| Interaction Amongst Students | 7            | 0.848            |
| Instructor Support           | 6            | 0.809            |
| Perceived Learning           | 6            | 0.887            |
| Student's Satisfaction       | 5            | 0.832            |

##### Correlation Analysis

The researchers used correlational analysis to analyze the relationships between the dependent and independent variables or to comprehend the mutual relationship or connection between the study's dependent and independent variables, as shown in Table 4. Student satisfaction was significantly positively linked with all independent factors of online learning.

The independent variables of this study, perceived learning, and instructor support had the strongest correlation with student satisfaction (dependent variable) ( $r = .854, p < .01$ ), ( $r = .861, p < .01$ ), respectively. Another independent variable that has a moderate link with student satisfaction is

**Table 4**  
**Correlation Analysis**

| Variables                   | Independent Variables |                              |                    |                    |
|-----------------------------|-----------------------|------------------------------|--------------------|--------------------|
|                             | Structure of course   | Interaction amongst students | Instructor support | Perceived learning |
| Students Satisfaction (D.V) | .675**                | .623**                       | .861**             | .854**             |

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

course structure ( $r = .675$ ,  $p < .01$ ) & interaction among students ( $r = .623$ ,  $p < .01$ ). As a result, all factors were found to be moderately and positively significant. (See Table 4).

#### 4.3 Hypothesis testing

To evaluate the proposed hypothesis, the correlation between variables was first verified, and then linear regression models for all four hypotheses were implemented. The findings of the correlation study between the independent and dependent variables indicated a significant positive relationship, and subsequent regression models were utilized to assess the level of association between the variables based on the correlation analysis.

The first hypothesis, H1, was tested using a linear regression model with the students' satisfaction as the dependent variable and interaction among students in online learning as the independent variable. The regression model provides an explanation with  $t = 9.585$ ,  $\beta = 0.592$ ,  $p < 0.000$  significant for  $p < 0.05$ , and 38.8% (R square) of the overall variance is significant (Table 5). However, H1 is accepted, implying that interaction among students has a positive and significant impact on student satisfaction.

Likewise, the second hypothesis, H2, was tested using a linear regression model with the students' satisfaction as the dependent variable and the structure of the course in online learning as the independent variable. The regression model explains with  $t = 11.006$ ,  $\beta = 0.9$ ,  $p < 0.000$  significant for  $p < 0.05$ , 45.5% (R square) of the overall variance is significant (Table 5). Therefore, H2 is accepted, implying that the structure of the course in online classes has a positive and significant impact on student satisfaction. H3 was also examined again using a linear regression model, this time with instructor support in online learning as the independent

**Table 5**  
**Hypothesis Testing**

| Variable |                              | R Square | Beta  | Sig-value | T-value |
|----------|------------------------------|----------|-------|-----------|---------|
| IV       | Interaction amongst Students | 0.388    | 0.592 | <0.000    | 9.585   |
| DV       | Student's Satisfaction       |          |       |           |         |
| IV       | Structure Of course          | 0.455    | 0.9   | <0.000    | 11.006  |
| DV       | Student's Satisfaction       |          |       |           |         |
| IV       | Instructor Support           | 0.741    | 0.846 | <0.000    | 20.392  |
| DV       | Student's Satisfaction       |          |       |           |         |
| IV       | Perceived Learning           | 0.729    | 0.783 | <0.000    | 19.743  |
| DV       | Student's Satisfaction       |          |       |           |         |

variable and student satisfaction as the dependent variable. The regression model provides an explanation with  $t = 20.392$ ,  $\beta = 0.846$ ,  $p < 0.000$  significant for  $p < 0.05$ , and 74.1% (R square) of the overall variance is significant (Table 5). Hence, H3 is accepted, implying that instructor support and knowledge in online learning have a positive and significant on students' satisfaction.

The study's final hypothesis was also examined using a sequential linear regression model, with students' perceived learning as the independent variable and satisfaction as the dependent variable. The model explained 72.9 per cent (R square) of the total variance and is statistically significant with a significance value  $p < 0.000$ ,  $t = 19.743$ , (Table 5). Students' perceptions of online learning have a direct, positive impact on their satisfaction ( $\beta = 0.783$ ). H4 was supported, indicating that students' perceptions of online learning had a positive impact on their satisfaction.

#### *Regression Coefficient*

Table 6 summarizes the findings of all proposed hypotheses based on the aforementioned data analysis. A hypothesis is accepted or rejected based on its p-value; if the p-value is less than 0.005, the hypothesis is accepted and the variable is deemed to have a significant relationship or vice versa. Based on correlation regression modelling, all significance values were less than 0.005, indicating that all hypotheses were accepted.

**Table 6**  
**Hypothesis status**

| Hypothesis | Description                                                                          | Result   |
|------------|--------------------------------------------------------------------------------------|----------|
| H1         | Interaction in online learning influences student's satisfaction positively          | Accepted |
| H2         | course structure in online learning influences student's satisfaction positively     | Accepted |
| H3         | instructor support in online learning influences student's satisfaction positively   | Accepted |
| H4         | Students' perceiveness in online learning influences student satisfaction positively | Accepted |

## 5. Findings of the study

1. The study found that interaction in online learning has a significant positive influence on students satisfaction, hence researchers rejected the null hypothesis and accepted the alternative hypothesis which checked the influence of interaction in online learning on students satisfaction.
2. The study found that course structure in online learning has a significant positive influence on students satisfaction, hence researchers rejected the null hypothesis and accepted the alternative hypothesis which checked the influence of course structure in online learning on students' satisfaction.
3. The study found that instructor support in online learning has a significant positive influence on students' satisfaction, hence researchers rejected the null hypothesis and accepted the alternative hypothesis which checked the influence of instructor support in online learning on students' satisfaction.
4. The study found that students' perceiveness in online learning has a significant positive influence on students' satisfaction, hence researchers rejected the null hypothesis and accepted the alternative hypothesis which checked the influence of students' perceiveness in online learning on students' satisfaction.

## 6. Discussion

Remote learning behaviour is usually seen to be a direct indicator of student satisfaction using the digital platform, indicating that students

in higher education during the Covid outbreak will like online learning and have a good view regarding it. This research looked at the aspects that affect student satisfaction in a forced online learning environment, and whether students are satisfied with the digital learning environment or not. Therefore, the results of the current literature provide that online learning (those students who are comfortable with online learning) has a positive and significant relationship with the satisfaction level of students. But, according to the findings, the structure of the course and interaction among students shows a moderate effect the student satisfaction which means that students are not very satisfied with the course structure and interaction amongst students. According to the researcher, Despite the significance of offline learning for in-person connection and offline classroom interaction, some studies demonstrate that the somewhere lack of in-classroom interaction reduced the satisfaction level of students (Saghafi, 2014). However, according to other studies, remote learning provides extremely pleasant environmental elements, allowing a professional classroom environment to be transformed into a more sociable, dynamic, and creative environment as needed (Gomez, 2016). Furthermore, these external elements contribute to the uniqueness of the remote learning experience. Saghafi (2014) indicated that the value of a one-to-one learning environment cannot be replaced by a remote learning environment; both platforms, they believe, have upsides and downsides. In both physical and digital scenarios, interaction is a key aspect of learning. Instructor-to-learner and learner-to-learner, the two ways of interactions are also possible. Interaction between the instructor and the student is critical for facilitating learning and response. In both circumstances, the significance of this relationship cannot be overstated. Internet communication may not be as successful as conventional communication in online classrooms, which is a point of contention. In online classrooms, the lack of emotional responses, nonverbal cues, and body language is essential. The findings of this study are consistent with those of (Moore J. , 2014). The relationship between the mentor and the mentee was found to be a major factor in students' perspectives of education and satisfaction. According to earlier studies, the course format had a mixed effect on student satisfaction and learning results. The findings of the present study suggest that course structure has a moderately significant impact on student satisfaction. This indicates that learners are unsatisfied with the online learning course structure. The conclusions of this study support those of Gray (2016) during the pandemic, the structure of online courses changed. COVID-19 was not created with online learning in mind. The course format was

created with traditional, offline learning in mind. The course format had to be changed to accommodate online learning, which may have improved student satisfaction. In an online context, an instructor serves as both a developer and a communicator (Martin, 2018). Furthermore, throughout the class, the instructor must behave as a 'facilitator,' supporting learning and actively participating in conversations with students (Riva, 2003). Student satisfaction is influenced by the instructor's facilitative role and the information he or she holds. Instructors who were conducting online classes during the epidemic had an added obligation. They had to adjust to a changing environment while polishing their technical abilities and imparting technical advice to pupils who were new to the setting. The findings indicate that teacher facilitation and expertise are major determinants of student happiness during online learning amid the pandemic.

## **7. Conclusion**

In the past, researchers have looked at students' perceptions of learning outcomes and student satisfaction Gray (2016), and (Baber, 2020). In varied situations and courses, multiple components are responsible for favourable perceived learning outcomes. The present study differed from past research in that it focused on students' satisfaction with online learning using the digital platform of learning throughout and even after the pandemic. Interaction among students, course material, the role of the instructor and the perceived learning were discovered to be major determinants of online learning, and all of these factors have a favourable impact on student satisfaction. Learners are also aware of the critical context in which this shift has happened, and they are appreciative of their institutions' and teachers' efforts. The current study reached at a conclusion, though students were relatively satisfied with their academic performance and success, they preferred face-to-face learning over remote learning.

## **8. Limitations and Future Research**

The study's drawback is that the university students chosen as a sample are from urban and semi-urban areas; universities or colleges in rural areas were not considered. Only students who study in cities are included in the analysis. However, student satisfaction levels from remote institutions are as relevant and might be considered for future research.

Moreover, digital platforms can also be considered for future scope of research.

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