

## Impact of Digital Learning Environment on Satisfaction of Customers in view of Learning Outcome of their Children

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## Abstract

Learning through digital medium has become a very common sight across the globe, especially post Covid-19 pandemic period. However, the impact of such environment on the learning outcome of the students is not thoroughly reviewed through scientific studies. In view of the same, a systematic study was conducted to determine the satisfaction of parent's vis-à-vis learning outcome of their children (studying in CBSE schools) receiving education through digital media. The study was carried out using a standard methodology, wherein online survey method was used to collect data from the parents (using a structured questionnaire). The collected data was analyzed using SPSS 18.0 software and the significance level was set at 0.05 level. The study results showed that apart from digital teaching aids, the school administration used dedicated school mobile app to communicate with the learning progress of students. Furthermore, the results indicated that digital education system has positive impact on the student's academic performance, wherein there is less rework, better preparation for exams, consistent good ranks in exams, effective time management and timely identification of shortcomings. Overall, the feedback from the parents showed that most of the parents are moderate to highly satisfied with the introduction of the digital teaching aids.

Keywords: Digital learning, learning outcome, customer satisfaction, digital teaching aids

## 1. Introduction

Customer satisfaction plays an important role in sustainable growth of any organization; educational organizations included (Gopal et al., 2021). The world witnessed unprecedented situations in all the fields during the Covid-19 pandemic period. The great transformation was evident in the education field as it was managed through technological advances (Vanitha and Alathur, 2021). Most of the schools and colleges shifted their teaching to digital form and E-learning (Baber, 2020). It has been reported that the effect of E-learning varies during different stages of our life. The modern day trends in education have opened up new avenues and have changed the traditionally held concepts (Singh, 2020). Indian education sector is passing through a stage of development and facing the problems posted by market forces through fast changing technology. Currently, students don't find the school to be interactive or challenging enough. Moreover, the E-learning mode has brought back the enjoyment in their learning experience through interactive, innovative content and delivery (David et al., 2019). However, the learning outcome is not very predictable and there are very few investigations that are carried out to check the same. Besides, the satisfaction of parents vis-à-vis performance of their children is also not very well known (Kumar et al., 2019).

The rapid growth of IT industry has made the world smaller and smarter and E-learning has revolutionized learning process through technology. E-learning has provided an opportunity for implementation of innovative ways to promote learning outcomes (Roldán-Álvarez et al., 2020). Innovation in digital field along with advanced ICT facilities have opened a new dimension of learning for the students of all ages (Sumi and Kabir, 2021). In this dynamic environment, e-learning has become popular with high-school students as it also is an effective learning tool for college students as well across India (Naik et al., 2020). E-learning has changed the views of users and beneficiaries how they see the learning and teaching process in view of overall quality of learning (Deshpande et al., 2012). In the backdrop of above information, this study was carried out to assess the impact of digital of e-learning environment on satisfaction of parents in view of learning outcome of their children.

## 2. Research Methodology

The study was conducted following steps that involved reconnaissance, sample survey, data analysis, followed by interpretation of statistics. The study is carried out in Nagpur City of Maharashtra. All the parents of students studying in various CBSE schools of the Nagpur City formed the universe of the study. The study is carried out by adopting a descriptive cross sectional research design. The sample selection was performed randomly following probability sampling technique. A sample size of 350 was considered as the appropriate sample size.

In the present investigation, the primary data was collected by using a reliable and valid structured questionnaire. The structured questionnaire was developed in view of the

objectives of this study. Prior to data collection, reliability and validity of the same i.e. structured questionnaire was estimated by employing test-retest method. The data was collected by using an online survey method and by using Google form of the questionnaire. Chi-Square Test was used as an inferential statistics test. Subsequently, the generated data was analysed with the help of SPSS 18.0 software. Significance level was selected to be 0.05 (or equivalently, 5%).

### Objectives of the Study

- To identify the various communication channels of Digital Platforms used by parents for knowing the academic progress of students.
- To study the impact of digital education on student's academic performance
- To study the effect of digital education medium on various aspects of learning
- To study the satisfaction level of parents/customers with digital education

### Hypotheses of the Study

- There is positive impact of digital education on student's academic performance
- Due to digital education medium there is less rework, focused learning, better preparation for exams and consistency in good ranks of the students.
- Digital education medium has high effect on effort expectancy and performance.
- To study the satisfaction level of parents/customers with digital platforms.

## 3. Results and Discussion

### 3.1 Communication through Digital Platforms about academic progress

**Table 1: Communication through Digital Platforms about academic progress of students**

	Nos.	Per	Chi-Square	Significance
School App	109	31.1	369.114	<0.05
WhatsApp Group	194	55.4		
Telecalling - Phone call	22	6.3		
E-mail	9	2.6		
Other	16	4.6		
<b>Total</b>	<b>350</b>	<b>100.0</b>		

Above Table 1 shows information pertaining to communication of parents through Digital Platforms about academic progress of students. According to 31.1% respondents they can communicate through school app about academic progress of students while 55.4% respondents communicate through WhatsApp group. In addition to this 6.3% respondents communicate through Telecalling-phone call and 2.6% respondents communicate through email. Further 4.6% respondents communicate through other digital platform about academic progress of students.

### 3.2 Receiving information through digital platform about various aspects

**Table 2: Receiving information through digital platform about various aspects of students**

	Yes		No		Total		Chi - Square	Significance
	Nos.	Per	Nos.	Per	Nos.	Per		
Attendance	75	21.4	275	78.6	350	100.0	114.286	<0.05
Academic progress	208	59.4	142	40.6	350	100.0	12.446	<0.05
School events	288	82.3	62	17.7	350	100.0	145.931	<0.05
Notices	273	78.0	77	22.0	350	100.0	109.76	<0.05
Holidays	321	91.7	29	8.3	350	100.0	243.611	<0.05
Balance fee reminders	299	85.4	51	14.6	350	100.0	175.726	<0.05

Above Table 2 shows information pertaining to receiving information through digital platform about various aspects of the students by the parents of study area.

- **Attendance:** 21.4% respondents receive attendance related information through digital platform while 78.6% respondents do not receive such information through digital platform.
- **Academic Progress:** 59.4% respondents receive academic progress related information through digital platform while 40.6% respondents do not receive such information through digital platform.
- **School events:** 82.3% respondents receive school events related information through digital platform while 17.7% respondents do not receive such information through digital platform.
- **Notices:** 78.0% respondents receive notice through digital platform while 22.0% respondents do not receive notice through digital platform.
- **Holidays:** 91.7% respondents receive holiday related information through digital platform while 8.3% respondents do not receive such information through digital platform.
- **Balance fee reminders:** 85.4% respondents receive balance related reminders through digital platform while 14.6% respondents do not receive balance related reminders through digital platform.

### 3.3 Nature of impact of digital education on academic performance of the student

**Table 3: Nature of impact of digital education on academic performance**

Impact	Nos.	Per	Chi-Square	Significance
Positive	288	82.3	378.638	<0.05
No impact	39	11.1		
Negative	23	6.6		
Total	350	100.0		

Above Table 3 shows information pertaining to opinion of the parents of study area about nature of impact of digital education on academic performance of students. 82.3% respondents feel there is positive impact of digital education on academic performance while according to 11.1% respondents there is no impact of digital education on academic performance. Further 6.6% respondents feel there is negative impact of digital education on academic performance of students.

### 3.4 Effect of digital education medium on various aspects of learning

**Table 4: Effect of digital education medium on various aspects of learning**

	To a large extent		To Some extent		Not at all		Total		Chi-Square	Significance
	Nos.	Per	Nos.	Per	Nos.	Per	Nos.	Per		
Less rework	228	65.1	67	19.1	55	15.7	350	100.0	160.078	<0.05
Focused learning	261	74.6	47	13.4	42	12.0	350	100.0	268.06	<0.05
Better prepared for exams	198	56.6	118	33.7	34	9.7	350	100.0	115.399	<0.05
Consistent good ranks	233	66.6	98	28.0	19	5.4	350	100.0	200.867	<0.05
Better time management	122	34.9	204	58.3	24	6.9	350	100.0	139.336	<0.05
Timely identification of shortcomings	97	27.7	231	66.0	22	6.3	350	100.0	192.294	<0.05

Above Table 4 shows information pertaining to opinion of the parents of study area about effect of digital education medium on various aspects of learning.

- **Less rework:** 65.1% respondents feel due to digital education medium there is less rework up to a large extent while according to 19.1% respondents due to digital education medium less rework is there up to some extent. Further 15.7% respondents feel there is no effect of digital education medium on rework.
- **Focused Learning:** 74.6% respondents feel due to digital education medium there is focused learning up to a large extent while according to 13.4% respondents due to digital education medium there is focused learning up to some extent. Further 12.0% respondents feel there is no effect of digital education medium on focused learning.

- **Better prepared for exams:** 56.6% respondents feel due to digital education medium better preparation for exams is achieved up to a large extent while according to 33.7% respondents due to digital education medium there is better preparation for exams up to some extent. Further 9.7% respondents feel there is no effect of digital education medium on preparation for exams.
- **Consistent good ranks:** 66.6% respondents feel due to digital education medium consistent good rank is achieved up to a large extent while according to 28.0% respondents due to digital education medium, consistent good rank is achieved up to some extent. Further 5.4% respondents feel there is no effect of digital education medium on achieving good rank consistently.
- **Better Time Management:** 34.9% respondents feel due to digital education medium better time management is achieved up to a large extent while according to 58.3% respondents due to digital education medium, better time management is achieved up to some extent. Further 6.9% respondents feel there is no effect of digital education medium on achieving better time management.
- **Timely identification of shortcomings:** 27.7% respondents feel due to digital education medium timely identification of shortcomings is achieved up to a large extent while according to 66.0% respondents due to digital education medium, timely identification of shortcomings is achieved up to some extent. Further 6.3% respondents feel there is no effect of digital education medium on timely identification of shortcomings.

### 3.5 Effect of digital education medium on learning outcome and satisfaction

**Table 5: Effect of digital education medium on learning outcome and satisfaction**

	High		Moderate		Low		Total		Chi-Square	Significance
	Nos	Per	Nos	Per	Nos	Per	Nos	Per		
Effort Expectancy	174	49.7	102	29.1	74	21.1	350	100.0	45.622	<0.05
Performance Expectancy	234	66.9	73	20.9	43	12.3	350	100.0	180.858	<0.05
Perceived Enjoyment	99	28.3	107	30.6	144	41.1	350	100.0	9.88	<0.05
Satisfaction Levels	84	24.0	189	54.0	77	22.0	350	100.0	67.478	<0.05
Trust	70	20.0	179	51.1	101	28.9	350	100.0	54.073	<0.05
Mobile Self-efficacy	59	16.9	78	22.3	213	60.9	350	100.0	120.859	<0.05

Above Table 5 shows information pertaining to opinion of the parents of study area about effect of digital education medium on learning outcome and satisfaction.

- **Effort Expectancy:** 49.7% respondents feel due to digital education medium there is high effort expectancy while according to 29.1% respondents due to



digital education medium there is moderate effort expectancy. Further 21.1% respondents feel there is less effect of digital education medium on effort expectancy.

- **Performance Expectancy:** 66.9% respondents feel due to digital education medium there is high performance expectancy while according to 20.9% respondents due to digital education medium there is moderate performance expectancy. Further 12.3% respondents feel there is less effect of digital education medium on performance expectancy.
- **Perceived Enjoyment:** 28.3% respondents feel due to digital education medium there is high perceived enjoyment while according to 30.6% respondents due to digital education medium there is moderate perceived enjoyment. Further 41.1% respondents feel there is less effect of digital education medium on perceived enjoyment.
- **Satisfaction Levels:** 24.0% respondents feel due to digital education medium there is high satisfaction level while according to 54.0% respondents due to digital education medium there is moderate satisfaction level. Further 22.0% respondents feel there is less effect of digital education medium on satisfaction level.
- **Trust:** 20.0% respondents feel due to digital education medium there is high trust while according to 51.1% respondents due to digital education medium there is moderate trust. Further 28.9% respondents feel there is less effect of digital education medium on trust.
- **Mobile Self-efficacy:** 16.9% respondents feel due to digital education medium there is high mobile self-efficacy while according to 22.3% respondents due to digital education medium there is moderate mobile self-efficacy. Further 60.9% respondents feel there is less effect of digital education medium on mobile self-efficacy.

#### 4. Conclusions

Based on the study results, it is observed that parents receive various information about their children such as academic progress, school events, notices, holidays related information and balance fee reminders through digital platform and feel that digital education has positive impact on the student. Most of the parents communicate through WhatsApp group about academic progress of students. They feel that due to digital education medium there is less rework, focused learning, better preparation for exams and consistency in good ranks and according to most of the parent's digital education medium has high effect on effort expectancy and performance expectancy.

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