An Overview of Parental Perceptions and Involvement in E-Learning in the Wake of the Covid-19 Pandemic

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Abstract

Online education became popular due to the COVID-19 pandemic. In this context, parents' role in improving school-level e-learning has grown. Students and parents had to adjust to online education during the pandemic. Previous research has acknowledged e-learning's potential and effectiveness, particularly highlighting the need for parental participation to optimize its benefits. This study aims to comprehensively examine the dynamics of parental involvement in e-learning and identify influential factors. The Structured questionnaires were employed to collect quantitative data from 300 respondents across India. The survey focused on various dimensions, including Performance, Perceived Challenges, Academic Differences, Perceived Usefulness, Parent Involvement, Perceived Ease of Use, Overall Satisfaction, and Intention to Use.The study indicates a reluctance among parents to actively engage in the e-learning process. Moreover, parental involvement is observed to correlate with the number of children. Parental involvement exhibits a negative influence compared to other factors, while perceived usefulness, ease of use, and academic differences display positive relationships.Based on the findings, the study proposes a strategic shift in approach. Rather than focusing on extensive parental involvement, the emphasis should be placed on highlighting the perceived usefulness and convenience of e-learning methods. Additionally, the implementation of school-based programs is recommended to enhance parental comfort and familiarity with the e-learning process.To enhance e-learning's integration and acceptance, a blended learning approach is suggested, allowing parents intermittent disengagement while promoting e-learning as an integral part of the educational future.In conclusion, redefining parents' roles in e-learning is crucial. By prioritizing perceived utility and strategic integration, the education system can use online learning while ensuring parental comfort and engagement.

1. Introduction

The recent development of the epidemic has prompted numerous businesses to alter their strategies. Innovative teaching and learning approaches represent one of the most significant improvements in the education industry. The usage of digital learning methods during this time period has helped students establish a learning environment and played a crucial role in integrating the new teaching and learning methods (Zuchdi & Nurhadi, 2019). It has been noticed that, if appropriately applied, digital learning methods can assist students learn collaborative learning methods and build suitable social awareness, as well as facilitate learning efficiently (Yadav, 2016). Among the benefits of digital

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learning methods cited by (Lubis & Yudhi, 2021) are the enhancement of interactivity, particularly between students and teachers, the flexibility of learning in terms of time and place, the ability to reach a greater number of students, and the ability to easily update the content. Many scholars have cited digital learning or e-learning as innovative and beneficial; yet, when it comes to transferring these approaches to kids at the school level, it requires a certain amount of parental commitment in order to employ them more effectively (Rita Panaoura, 2020).

There are two primary delineations of e-learning, encompassing the online modality and its offline counterpart (Nadeak, 2021). The emergence of the Covid-19 pandemic has instigated significant transformations in both of these approaches, often culminating in the manifestation of hybrid e-learning modalities (Amenduni et al., 2021). The digital landscape dominates online e-learning strategies, facilitated by an array of tools and resources. The discourse primarily centers on online e-learning, a realm intrinsically reliant upon real-time tools for the facilitation of knowledge dissemination. Within the domain of online e-learning, a distinction emerges between synchronous and asynchronous frameworks (Misnawati et al., 2021). This investigation, however, centers specifically on the synchronous paradigm of e-learning, whereby learning provisions transpire in both online and offline contexts, yet in real time.

In recent times, particularly in the aftermath of the pandemic, a notable surge in scholarly attention towards e-learning has been witnessed. Notably, the global online e-learning market, which was valued at 101 billion US dollars in 2019, is anticipated to ascend to 167.5 billion US dollars by 2026 (Statista Research Department, 2022). Concurrently, an expansion is anticipated across various facets of e-learning, encompassing virtual classrooms and mobile e-learning provisions. This growth projection extends to educational contexts, including school-level instruction where parental involvement assumes significance. While existing research endeavors have contributed to comprehending diverse e-learning methodologies and approaches for augmenting learning experiences, it remains imperative to consider perspectives of other stakeholders as well. Consequently, this study endeavors to bridge prevailing research gaps by addressing the following aspects comprehensively:

1.   The aftermath of the pandemic has spurred the rapid advancement of e-learning initiatives. This necessitates the incorporation of insights derived from diverse avenues of research. The present study embarks on an exploration of a critical stakeholder within this landscape, whose perceptions have the potential to significantly shape the practical utility of this method – Parents.

2.   India, a nation characterized by its rich diversity, houses students hailing from multifarious backgrounds. Incorporating their perspectives into the scholarly discourse can exponentially enrich the scope of future possibilities.

3.   Finally, the profound reliance of students on their parents for their e-learning requisites demands a thorough and resourceful investigation, an undertaking that constitutes the focal point of this study.

1.1 objectives

The objectives of the present research are as follows:

1. To determine how parents see the e-learning of school-aged children.

2. To assess parental participation in the e-learning of school-aged children.

The objectives mentioned above will be analysed using various statistical inferences. However, before moving on, a detailed literature review has been done to understand the current body of knowledge and is put forward in the next section.

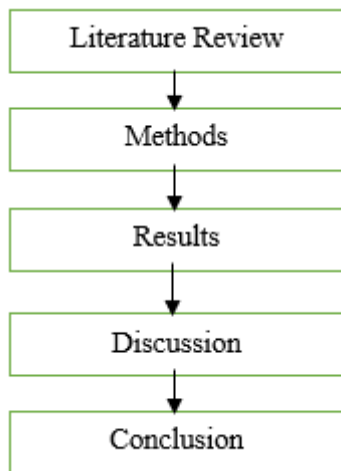The diagram below in Figure 1 represents the contents of the article further.

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│  Literature Review  │
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┌─────────────────────┐
│       Methods       │
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│     Discussion      │
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│     Conclusion      │
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Figure 1: Sub-Sections in the Article

2. Literature Review

The literature review encompasses an examination of prior research endeavors that have centered on the transformation and approaches of e-learning during the Covid-19 era. It also delves into an exploration of parental engagement within the realm of e-learning. Preceding the literature review, the third section of the Methods elucidates the research methodology employed, elucidating the instruments, participants, and procedural framework. Subsequently, the ensuing section undertakes a comprehensive analysis of the collected dataset, culminating in the presentation of results. The final two sections entail a thorough discussion and conclusion of the derived outcomes, while simultaneously addressing the identified research gaps.

2.1 E-Learning During Covid 19

(Maatuk et al., 2022) conducted a study to determine the challenges and opportunities of e-learning during the Covid-19 period and included both the students and the instructors in the study. The study suggested that students believe in e-learning provides them with opportunities to improve their academic levels, and the teaching staff agrees with the fact that e-learning helps in developing the technical skills of the students. However, there are barriers in terms of the high-cost structure for its implementation and the financial support required for the students as well to pursue the same. investigated the challenges in e-learning, especially in the tertiary sections of education. It is found that there are eight groups of issues in the section that can be specified. It includes issues related to the lecturer, social issues, academic issues, motivation, accessibility, and the intention of the learners. It also includes the issues of demographics and the generic issues that make the process further challenging.(Aboagye et al., 2020) analyzed the same but with regards to understanding the critical success factors contributing towards the same. The influential factors include increased awareness among the students, support from the management in terms of technology, and otherwise, the requirement of higher levels of IT from the instructors themselves. The blended method of learning however was found to be the most influential one out of the others.(Sakkir et al., 2021) undertook a study to understand the perception of students about e-learning during the Covid-19 period. It is quite interesting to note here that the students stated the process of e-learning is less effective when it comes to learning the English language. The perception is found to be impacted by various issues such as network issues, the cost associated, lack of motivation, time, and interaction.(Abbasi et al., 2020) took instances of a private medical college when understanding the e-learning perception of students. In the case of the

medical field as well, the majority of the students have stated that there is a negative perception of students about the e-learning process. The method of using e-learning is not found to be effective by the students.(Fauzi & Sastra Khusuma, 2020) conducted their study about e-learning during the pandemic in elementary schools. The teachers have been investigated for the study and it is found that although they are aware of the functioning of online teaching, the issues in implementation occur due to network issues, availability of the faculties, and collaboration with parents.

The study here is dedicated to understanding the involvement of parents and as stated by teachers, collaboration with parents is, in fact, a challenge, this study would be able to throw further light on this aspect.

2.2 Parents' Involvement in the Teaching-Learning Process

(Alharthi, 2022) explored the involvement of parents in their children's learning process, especially during Covid-19 in Saudi Arabia. It has been found that due to the pandemic, the involvement required by the parents is much and it is stated that parents do not prefer to take the role of teaching which has been imposed upon them due to the Covid-19 period. Many of the parents are forced to change their mode of participation due to the shift seen in the learning process post-pandemic. (Lawrence & Fakuade, 2021) conducted a study to understand the participation of parents in the e-learning process in Nigeria through a questionnaire. The study found that parental involvement in the process of e-learning is significant and it led to generating a positive impact on the learning aspects of the students.(Ben-Amram & Davidovitch, 2021) in their study attempted to find the attitude of the teachers along with the students and parents about the e-learning methods being adopted during the Covid-19 period. The study has put forward that although in the past years the interaction between the schools and the parents has been declining, the emergence of the pandemic had reassured the active participation and integration required among the parents, teachers, and students to get through the learning process during this era.(Matković & Vejmelka, 2022) investigated the role of parental support in the e-learning process for primary school students during the Covid-19 period. The results of the study showed that due to the need of the students to use the internet for e-learning, parental involvement in their studies has increased and it also involved educating their students about fraud and the risks of using the internet.(Amanor-Mfoafo et al., 2020) conducted the study to determine the readiness of the parents of Ghanaian students toward the e-learning process. The study revealed that students having a higher socio-economic status are more ready to accept the e-learning methods to be applied during the Covid-19 period as compared to parents having a low socio-economic position.

The findings of the study by Iskandar et al (2023) show the challenges encountered by parents within the realm of online learning include time constraints, the learning environment, time constraints, digital literacy, facilities and infrastructure, gender, children's social development, children's health, and parents' social status. Additionally, the study's outcomes reveal a notable unpreparedness among parents for the full-fledged implementation of online learning.

From the above review of the existing literature conducted, it is found that the impact of Covid-19 on the education sector has led to using e-learning methods at all levels of education. The involvement of parents is imposed due to this nature of learning but there is not much information provided on what are the exact perception of the parents on being an essential part of the process. This study aims to explore diverse aspects of parental involvement, thereby addressing gaps in the existing literature. The uniqueness and strengths/novelty of this research, when juxtaposed with previous work, can be summarized as follows:

Aspect	Previous Work	This Research
Uniqueness	Limited focus on parental involvement in e-learning at school level	Comprehensive analysis of parental role in school-level e-learning
Strength/Novelty	Traditional emphasis on e-learning effectiveness	Prioritizes perceived usefulness and convenience
	Limited consideration of parental involvement impact	Examines correlations and factors influencing parental engagement
	Minimal exploration of relationship between parental involvement and other factors	Identifies negative relationship with other aspects, positive associations
	Generalized recommendations for parental involvement	Proposes strategic shift, school-based initiatives, blended learning
		Advocates future-oriented integration and disengagement opportunities

2.3. Research questions

When attempting to comprehend the efficiency of digital learning methods, parents' participation in the process must be taken into account. The present study seeks to provide a holistic perspective on the learning process by examining the role of parents in education and the possible elements that influence it. The study is founded on several fundamental notions that have evolved as the study's impetus.

The following research questions were generated to stimulate the study:

1. How crucial is parental involvement in digital learning processes for students?

2. How do parents perceive the need for their participation in online learning methods for their children?

3. Method

As described in the preceding sections, the purpose of this study is to determine how parents of students in schools perceive the e-learning methods being implemented. To collect individual responses, a structured questionnaire based on a 5-point Likert scale was developed using a quantitative methodology. In the next subsections, the details of the chosen methodologies are described.

3.1. Sample / Participants

The research framework includes the development of a methodical strategy for the analysis of the primary data.. Therefore, non-probabilistic sampling was utilized to pick study samples. Using the criterion of being parents of school-aged children, this study used purposive sampling. These students must have used e-learning techniques in their schools during the Covid-19 period. A total of 300 samples were collected from across India for the study.

A total of 300 samples have been collected for the study. The graph below shows the composition of the respondents.
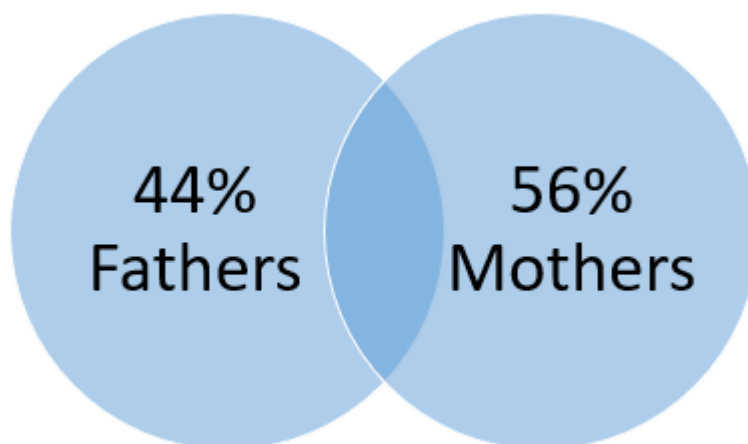

Figure 2: Composition of Respondents

Figure 2 above shows that the respondents consists of 44% fathers to the children undergoing e-learning and the remaining are mothers.

3.2. Instrument(s)

To accomplish the objectives of the study, a primary data set was obtained from the parents of school-aged children in order to comprehend the perception levels. A structured questionnaire on a 5-point Likert scale has been developed to collect the responses of the respondents using a quantitative methodology. These are put in an agreement scale where the responses are provided on a scale from 1 to 5. The scale was built using examples from numerous former researchers, such as (Hasan & Bao, 2020; Weng et al., 2015). However, the final questionnaire was designed with the context and demographic of this study in mind.

3.3. Data collection procedures

The primary objective is to determine the parents' perceptions of e-learning and their level of participation in the process. From the aforementioned questionnaire, the correlations between the components outlined in the literature were studied. Statistical procedures such as multiple linear regression, principal component analysis, t-tests, and ANOVA were used to assess them.

3.4. Data analysis

A pilot-scale study comprising 50 datasets was undertaken to assess the reliability of the scale. Additionally, validity was ensured through content validity, which entails measuring the adequacy of the research instrument in capturing the conceptual domain of the topic. Content validity involves validating the research instrument through multiple sources, enabling the researcher to refine and enhance its design effectively.

In this case, a panel of experts comprising educators and professionals in both education and management domains was engaged to assess the prepared questionnaire. Additionally, teachers experienced in utilizing e-learning for children were consulted to validate the questionnaire. The feedback and suggestions garnered from the panel members were meticulously examined and integrated into the questionnaire. Following these revisions, the questionnaire was subjected to further scrutiny by the experts before being subsequently circulated for pilot testing.

The reliability is measured using the Cronbach's alpha value. The acceptable value for the criteria is a score of 0.7 or more.

Table 1: Scale Reliability Statistics

	Cronbach's α
scale	0.748

The above calculation in Table 1 shows that the Cronbach's Alpha value for the first scale is at 0.748 which is above the acceptable level of 0.7. This shows that this section of the questionnaire is reliable for conducting the full-fledged data collection.

The subsequent section elaborates on the data analysis performed.

4.   Results

As stated previously, a total of 300 parent responses were collected in order to conduct statistical analyses and achieve the study's objectives. Continuing with the study, the demographic composition of the samples is presented in the Table 2 below.

Table 2: Demographic Variable	Frequency	Percentage
Relation to the Child		
Mother	168	56.0
Father	132	44.0
Age Group(*in years*)		
25-34	162	54.0
35-44	138	46.0
Education Level		
Graduate	180	60.0
Post Graduate	120	40.0
Employment		
Salaried	162	54.0
Self-Employed	120	40.0
Unemployed	18	6.0
Area of Residence		
Urban	120	40.0

Semi-Urban	90	30.0
Rural	90	30.0
Number of Children		
1-2	156	52.0
3-5	144	48.0

The respondents fall into two distinct age groups and either hold a bachelor's degree or a master's degree, as shown in the table above. Despite the fact that 40% of respondents are from urban areas and 30% are from semi-urban and rural areas, the entire region is represented in this study. The respondents have anywhere between one and five children.

A total of 30 questions have been included in the questionnaire to investigate parental participation in the e-learning process. Principal component analysis (PCA) was initiated in order to extract the process's underlying factors from these items, which represent different aspects of the process. This PCA utilized the varimax rotation to optimize factor loadings and produce a total number of factors with eigenvalues greater than 1. In addition to the PCA, the sampling adequacy tests of Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity are being computed as shown in tables 3 and 4.

Table 3: Bartlett's Test of Sphericity

χ^2	df	p
6103	435	< .001

Table 4: KMO Measure of Sampling Adequacy

	MSA
Overall	0.731
Finding the e-learning course for my child was clumsy	0.766
The procedure of enrolment was not an easy task	0.542
Task performance was not creative as a textbook	0.720
Performance feedback was in general	0.436
The teacher was supportive	0.382
I did not like the student assessment procedure	0.646
It was not easy to access the internet	0.764
An E-Learning system is more costly rather than a physical classroom	0.495
It is uncertain when the academic session will start	0.708
I become nervous concerning academic year decision	0.498
I am worried about future higher study	0.732
I often feel nervous about the e-learning mode	0.579
I often feel that everything is not worth the effort	0.449
Using the e-learning service can improve the learning performance	0.844
I find the e-learning service to be useful to my child	0.847
When using the e-learning service, I encourage and praise my child	0.476
When my child faces problems during e-learning, I listen and provide the affection they need	0.517
When my child uses the e-learning service, I voluntarily take over my share of the work.	0.472

Table 4: KMO Measure of Sampling Adequacy

	MSA
When my child uses the e-learning service, I help them collect the necessary information they need.	0.664
When my child use the e-learning service, I share with them my experience of e-learning and any other important things they need to know	0.524
Learning to operate the e-learning applications of my child is easy for me	0.592
It is easy for me to become skillful at using the e-learning applications	0.478
I will continue to make my child use the e-learning system frequently in the future	0.813
I will strongly recommend others to use e-learning solution	0.705
I am satisfied with the way my child's e-learning is presented	0.423
I am satisfied with the fact that e-learning will be able to provide multiple learning channels	0.581
I am satisfied with the interactivity of the e-learning course	0.519
Overall, I am satisfied with the e-learning environment.	0.624
Overall, I am satisfied with the sociability of the e-learning service	0.682
I am satisfied with the learning effect and various evaluation methods offered by the e-learning solution	0.558

The overall KMO value is at 0.731 and Bartlett's test shows a p-value of less than 0.05 and hence it fulfills the sampling adequacy criteria according to (Hair et al., 2006).

The factors extracted from PCA are shown in the table 5 below.

Table 5: Component Loadings

	Component								Uniqueness
	1	2	3	4	5	6	7	8	
Finding the e-learning course for my child was clumsy						0.721			0.3278
The procedure of enrolment was not an easy task						0.643			0.3768
Task performance was not creative as the textbook						0.493			0.6040
Performance feedback was in general						0.665			0.4662
The teacher was supportive						0.609			0.3742
I did not like the student assessment procedure						0.667			0.4764
It was not easy to access the internet					0.769				0.3795
An E-Learning system is more costly rather than a physical classroom					0.679				0.2374
It is uncertain when the academic session will start					0.492				0.5897
I become nervous concerning academic year decision					0.637				0.4166
I am worried about future higher study				0.657					0.3060
I often feel nervous about the e-learning mode				0.488					0.2298
I often feel that everything is not worth the effort				0.590					0.5608

Table 5: Component Loadings

	Component								Uniqueness
	1	2	3	4	5	6	7	8	
Using the e-learning service can improve the learning performance	0.944								0.0778
I find the e-learning service to be useful to my child	0.962								0.0602
When using the e-learning service, I encourage and praise my child								0.821	0.2544
When my child faces problems during e-learning, I listen and provide the affection they need								0.441	0.9298
When my child uses the e-learning service, I voluntarily take over my share of the work.								0.559	0.5834
When my child uses the e-learning service, I help them collect the necessary information they need.								0.468	0.8433
When my child use the e-learning service, I share with them my experience of e-learning and any other important things they need to know								0.687	0.3327
Learning to operate the e-learning applications of my child is easy for me		0.835							0.2023
It is easy for me to become skillful at using the e-learning applications		0.857							0.1951
I will continue to make my child use the e-learning system frequently in the future			0.964						0.0567
I will strongly recommend others to use e-learning solution			0.954						0.0600
I am satisfied with the way my child's e-learning is presented							0.594		0.3506
I am satisfied with the fact that e-learning will be able to provide multiple learning channels							0.443		0.5582
I am satisfied with the interactivity of the e-learning course							0.649		0.4073
Overall, I am satisfied with the e-learning environment.							0.899		0.1258
Overall, I am satisfied with the sociability of the e-learning service							0.721		0.3481
I am satisfied with the learning effect and various evaluation methods offered by the e-learning solution							0.404		0.3719

Note. 'varimax' rotation was used

Table 5: Component Loadings

	Component								
	1	2	3	4	5	6	7	8	Uniqueness

It is quite evident from the table 5 that a total of eight factors have been generated from the PCA which have a factor loading of more than 0.4. The details of the factors extracted are hereby provided in the table 6 below.

Table 6: Description of Factors

Factor Name	Number of Items	Description
Performance	6	This refers to the performance of various tasks by the parents for their children
Perceived Challenges	4	It refers to the challenges both physical and intellectual that apply to the e-learning process
Academic Differences	3	It refers to the differences in the academic schedules and processes as compared to the traditional methods of learning
Perceived Usefulness	2	It defines the usefulness of the e-learning system according to the parent
Parent Involvement	5	It refers to the level of support and involvement provided by the parent to the child during the e-learning process
Perceived Ease of Use	2	It defines the ease of using the e-learning methods by the parent
Overall Satisfaction	6	It represents the overall satisfaction level of the parent about the use of e-learning for their children
Intention to Use	2	It refers to the intention of using the e-learning process by the parent for their children in the future

The above factors being generated are analyzed using statistical tools to determine the relationship among them. The multiple linear regression method has been used to determine the relationship between the dependent and independent variables.

Table 7: Model Fit Measures

Model	R	R^2	Adjusted R^2	Overall Model Test			
				F	df1	df2	p
1	0.959	0.920	0.918	477	7	292	< .001

Table 8: Model Coefficients - Intention to Use

Predictor	Estimate	SE	t	p
Intercept	1.3270	0.6952	1.909	0.057
Performance	0.0498	0.0553	0.900	0.369
Perceived Challenges	-0.2891	0.0695	-4.160	< .001
Academic Differences	-0.0326	0.0654	-0.498	0.619

Table 8: Model Coefficients - Intention to Use

Predictor	Estimate	SE	t	p
Perceived Usefulness	0.9433	0.0297	31.809	< .001
Parent Involvement	-0.5828	0.1258	-4.633	< .001
Perceived Ease of Use	0.0308	0.0255	1.208	0.228
Overall Satisfaction	0.1862	0.0806	2.309	0.022

The model is statistically significant, as determined by the regression model constructed in Table 7 & 8 to serve as the dependent variable. The adjusted R^2 value is 0.918, indicating a 91.8 percent change in parents' intention to use e-learning for their children in the future when independent factors are considered. The model-coefficients table revealed that only four of the seven variables have statistically significant effects. It consists of perceived challenges, perceived usefulness, parental participation, and overall satisfaction. The impact of perceived usefulness and parental involvement is quite high. This demonstrates that the intention to use is highly factor-dependent.

Second, a second regression model I. Table 9 & 10 is generated by considering overall e-learning satisfaction as the dependent variable and the remaining six factors as the independent variables.

Table 9: Model Fit Measures

Model	R	R²	Adjusted R²	Overall Model Test			
				F	df1	df2	p
1	0.819	0.670	0.663	99.2	6	293	< .001

Table 10: Model Coefficients - Overall Satisfaction

Predictor	Estimate	SE	t	p
Intercept	3.2108	0.4675	6.87	< .001
Performance	0.1619	0.0390	4.15	< .001
Perceived Challenges	0.2497	0.0482	5.18	< .001
Academic Differences	0.1125	0.0469	2.40	0.017
Perceived Usefulness	0.2883	0.0133	21.62	< .001
Parent Involvement	-0.5006	0.0863	-5.80	< .001
Perceived Ease of Use	0.0353	0.0184	1.92	0.055

In this case, the adjusted R^2 is 0.663, representing a 66.3% variance caused by the independent factors. The independent variables show that apart from perceived ease of use, all others have a statistically significant impact on parents' overall satisfaction. In this case, too, the influence of parental involvement is quite high.

The second objective of the study is to understand the involvement of parents in the e-learning process for their children. To understand this, the factor of parental involvement in the study is further analyzed in terms of the demographic factors considered in the study and shown in Tables 11 & 12 below.

Table 11: Independent Samples T-Test- Relation to the Child

		Statistic	df	p
Parent Involvement	Student's t	-0.128	298	0.898

Table 12: One-Way ANOVA - Parent Involvement				
	F	df1	df2	p
Age	3.55	1	280	0.061
Education Level	0.589	1	268	0.444
Employment	0.481	2	58.7	0.621
Area of Residence	2.18	2	193	0.116
Number of Children	5.65	1	285	0.018

According to the t-test and ANOVA conducted on the demographic factors of the parents, an evident disparity in mean scores in parental involvement based on the number of children emerges, signifying a potential association between the two variables at a discernible level. It is quite interesting to note that parental involvement is independent of the parents' other demographic characteristics.

The present statistical analysis illustrates the parents' involvement in and perception of the e-learning process. The results of the data collection are discussed in the following section.

5. Discussion

Overall, the study shows that parental involvement has a negative influence comparable to the other variables, whereas perceived usefulness, perceived ease of use, academic differences, etc. are positively related. The findings in the study have shown certain results that are unique to the population, however some of them are in concordance with those in the previous era. For example, the study is in concordance with the results provided by (Alharthi, 2022; Ben-Amram & Davidovitch, 2021) who also stated that the involvement of parents is not sought after in the e-learning process during the pandemic. It has been observed that parental involvement factors, including perceived usefulness, perceived ease of use, and perceived challenges, have been extensively debated by researchers in the past (Alassfi, 2022; Castiblanco Jimenez et al., 2020; Mailizar et al., 2021; Nikou & Maslov, 2021; Zalat et al., 2021). However, investigating the role of academic differences as a novel variable apart from the perceived challenges is a novel endeavor that could be pursued further in this field.

The study was conducted solely from the perspective of the parents. Investigating the teachers' points of view in the same situation could have helped to get a holistic view of the same. Also, the time was given for Covid-19 and therefore there were limitations related to the context of the study. Further insights into the overall context of the Covid-19 period can be drawn, which are not taken into account. However, the results of the

study have paved the way for many agendas for future research, which will be discussed in the next section. Based on the results of the study, a pictorial representation of the regression model is provided below in Figure 3.

Figure 3 – Conceptual Model

Results from the study are discussed, explained, and interpreted in the Discussion part. This part should explore the significance of the results of the study, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature. The results are examined to determine whether the study's hypotheses were confirmed. This section allows you to offer your interpretation and explain the meaning of your results. If the findings are different from those that were predicted by the hypotheses, you have to provide tentative explanations for those discrepancies. For example, some common explanations for unexpected results in a study are that the sample size was too small, the study was too short, directions given to participants were not followed properly, the instruments were not valid or reliable, or the survey response rate was too low. Or, in some studies, one may speculate that the responses given by the participants were contrary to what was expected because people were dishonest in their responses or were reluctant to share certain sensitive information with others.

6. Conclusions

Along with the pandemic, the concept of e-learning has emerged and made its way into various levels of education. It is a new development, despite the fact that it was discovered in the past that higher education institutions engaged in various integrated learning methods at the primary level. Several innovative methods have emerged as a result of e-learning methods, but their implementation in schools presents some challenges. The study conducted here has been primarily focusing on understanding the parents' perception of the e-learning methods being adopted in the education system after the emergence of Covid-19. The study employs a statistical method of analysis to determine the perception and involvement of parents in this regard. The questionnaire was able to identify a total of eight factors involved in the process of parental

participation in e-learning. These eight factors include- Performance, Perceived Challenges, Academic Differences, Perceived Usefulness, Parent Involvement, Perceived Ease of Use, Overall Satisfaction, and Intention to use. Two regression models are generated, one with the dependent variable of overall satisfaction and the other for use. For both factors, the generated models show a high variance in the dependent variable through the independent variables. The detailed model coefficient reveals, however, that the perceived challenges, perceived usefulness, parent involvement, and overall satisfaction play a significant role in the intention of parents to use e-learning in the future for their children. The intention to use is largely influenced by parents' perceptions of the medium's utility for their children and the necessity of their participation in the process. The perceived barriers, such as internet connection issues and academic evaluations, also play a significant role. This refers to the fact that parental involvement is negatively associated with the intention to use e-learning methods in the future. This indicates that parents want their children to be capable of managing these aspects independently in the future. Similarly, the other significant components are positively associated with overall satisfaction, whereas parent involvement is negatively associated. This indicates that parental participation in the e-learning process is not preferred by parents. It is also discovered that parental involvement is proportional to the number of children. The statistical analysis conducted have shown how parents are reluctant to get involved in the process of e-learning. This study investigates parental participation as one of the aids required to implement e-learning in school settings. Parents are reluctant to participate in the e-learning process, as indicated by the statistical analysis conducted. As a suggestive measure, this study suggests emphasizing the perceived usefulness and ease of using e-learning methods rather than the parents' need to actively participate in the process. Parents must be made more comfortable and at ease with the entire e-learning process through the implementation of school-based programs. It can also be promoted as the future of education and a blended approach can be taken in the present to allow parents to be detached from their involvement at certain times.

In addition, the study includes some recommendations for the future. It entails conducting a comparative analysis of parental perceptions in developed and developing economies in order to suggest reformative strategies for both types of nations. Qualitative research methods can be utilized to gain further understanding of the topic. In addition, now that the Covid-19 times have passed, it is possible to compare the e-learning processes before and after the pandemic situations.

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